Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Aal1Ces

NN10600-060

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COMPONENT Aal1CircuitEmulationService (Aal1Ces)

Instance	Decimal (1..65535)
Groups	GROUP Aal1Ces CustomerIdentifierData (CidData) GROUP Aal1Ces Provisioned (Prov) GROUP Aal1Ces OsiState (State) GROUP Aal1Ces Operational (Oper) GROUP Aal1Ces Statistics (Stats)
Scope	Application
Description	*Aal11CircuitEmulationService/n* An *Aal1Ces* component identifies an instance of the AAL1 Circuit Emulation Service. A separate instance of this component is required for each logical channel of a port which is offering a constant bit rate service to a customer. Instance numbers, which are used to uniquely identify *Aal1Ces* component instances, are arbitrary.
Mib	CircuitEmulationService
Opt. Subcomp.	COMPONENT Aal1Ces NailedUpAdaptationPoint (Nap) COMPONENT Aal1Ces ActiveEndPoint (Aep) COMPONENT Aal1Ces PassiveEndPoint (Pep) COMPONENT Aal1Ces Reroute
Dyn. Subcomp.	COMPONENT Aal1Ces LogicalConnection (LCo) COMPONENT Aal1Ces AtmConnection (AtmCon) COMPONENT Aal1Ces RerouteInfo (RerInfo)
Common Verbs	Help List Display Add DELete

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GROUP Aal1Ces CustomerIdentifierData (CidData)

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

ATTRIBUTE Aal1Ces customerIdentifier (cid)

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

GROUP Aal1Ces Provisioned (Prov)

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

ATTRIBUTE Aal1Ces serviceType (servType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the service type for the CES. In an ***unstructured*** service, the entire data stream at the service interface (including any framing bits which may be present) is passed across the network transparently.

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The unstructured service uses the Unstructured Data Transfer (UDT) mode of AAL1.

In a structured service, an Nx64kbit/s fraction of the data stream at the service interface is passed across the network. Two modes of structured service are supported: ***basicStructured*** and ***casStructured***. In a ***casStructured*** service, the Channel Associated Signalling (CAS) bits are carried in a separate data structure from the Nx64 payload. In a ***basicStructured*** service, they are not.

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

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

Mib	CircuitEmulationService
Values	unstructured basicStructured casStructured
Default	unstructured

ATTRIBUTE Aal1Ces bufferSize (bufSize)

Access	Read and write
Criticality	Component
Description	On ***4pDS1Aal1*** and ***4pE1Aal1*** cards, this attribute specifies the size of the AAL1 receive segment reassembly buffer in bytes. On initialization the buffer is filled to a level determined by *cellDelayVariationTolerance.* Thereafter the buffer is emptied as TDM frames are transmitted, and is filled as ATM cells are received. If the buffer overflows, sufficient data is discarded to bring the level down to that set after initialization. The cause of a buffer overflow may be one or a combination of any of the following: cell-arrival-jitter, initialization with delayed ATM cells, or TDM clock difference or wander. On ***4pDS1Aal1*** and ***4pE1Aal1*** cards, if this attribute is ***autoConfigure***, the buffer size applied is equivalent to two times *cellDelayVariationTolerance*. A provisioned numeric value of *bufferSize* must be higher than the equivalent *cellDelayVariationTolerance*, plus an allowance of one ATM Cell for the quantization of data in cells, and an allowance, if applicable, for the ATM overheads of structured CES. On the ***4pDS3ChAal1***, ***4pOC3ChSmIr***, ***2pSTM1eCh***, ***2pSTM1Ch*** and MSA cards, this attribute's value must be ***autoConfigure***, to acknowledge

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	that *maximumBufferDelay* is provisioned instead of this attribute. Setting this attribute too low allows traffic with normal CDV to cause unnecessary loss of data on the service interface. Setting this attribute too high permits the buffer to introduce an unnecessarily high propagation delay.
Mib	CircuitEmulationService
Values	Decimal (94..15651) autoConfigure
Units	bytes
Default	autoConfigure

ATTRIBUTE Aal1Ces cellLossIntegrationPeriod (lossPeriod)

Access	Read and write
Description	This attribute specifies the cell loss integration period. This period defines the interval of time (in milliseconds) for which a loss of cells condition must persist before a buffer underflow alarm is raised. A loss of cells condition occurs when the flow of cells to the AAL1 reassembly buffer stops, causing a buffer underflow or starvation condition. The operational attribute *cellLossStatus* will be set to ***loss*** when the buffer underflow alarm is raised. Value ***noLoss*** indicate it has not experienced any cell loss. The minimum value of this attribute is 10 seconds for the ***4pDS3ChAal1*** card. The value ***autoConfigure*** corresponds to a period of 10 seconds on the ***4pDS3ChAal1*** card, and 2 seconds on all other cards.
Mib	CircuitEmulationService
Values	Decimal (1000..60000) autoConfigure
Units	msec
Default	autoConfigure

ATTRIBUTE Aal1Ces interfaceName (ifName)

Access	Read and write
Criticality	Component
Description	This attribute identifies the instance of *Chan* to which an instance of *Aal1Ces* is linked.
Mib	CircuitEmulationService

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Values	Link (Hardware, applicationFramerName)
Default	No default

ATTRIBUTE Aal1Ces partialFill (partFill)

Access	Read and write
Criticality	Component
Description	A significant source of delay in a structured service is the amount of time it takes to collect enough data to fill a cell. This period of time can be reduced by sending cells that are only partially filled with data (*idlePattern* octets are added to the ATM payload beyond the partial fill level). This attribute specifies the number of payload octets to fill with data. It is applicable to structured services only, and must be set to ***47*** for unstructured services. On a given AAL1 Function Processor, the maximum cell rate that can be sustained is dependent upon the combined bandwidths of the provisioned services, and (for structured services) the levels of *partialFill*. The smaller the *partialFill* level, the greater the cell rate and hence the fewer the services that can be sustained at that fill level. On the ***4pDS3ChAal1***, ***4pOC3ChSmIr*** , ***2pSTM1eCh*** and ***2pSTM1Ch*** cards, the only allowed value for this attribute is ***47***.
Mib	CircuitEmulationService
Values	Decimal (8..47)
Units	octets
Default	47

ATTRIBUTE Aal1Ces idlePattern (idlePat)

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

ATTRIBUTE Aal1Ces cellLossRecoveryPeriod (recPeriod)

Access	Read and write
Description	This attribute specifies the cell loss recovery period. This period defines the interval of time (in seconds) for which a loss of cells condition must

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desist before the buffer underflow alarm is cleared.

The operational attribute *cellLossStatus* will be set to ***noLoss*** when the buffer underflow alarm is cleared.

Mib	CircuitEmulationService
Values	Decimal (0..60)
Units	seconds
Default	20

ATTRIBUTE Aal1Ces dummyDataByte

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

ATTRIBUTE Aal1Ces maximumBufferDelay (maxBufDelay)

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

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

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

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

On the ***4pDS3ChAal1***, ***4pOC3ChSmlr***, ***2pSTM1eCh*** and ***2pSTM1Ch*** cards, this attribute's value is rounded up to the nearest multiple of 1 ms when applied to the buffer. The range is 2 to 32 ms in steps of 1 ms. Note that the *maximumBufferDelay* must be at least 1 ms greater than the *cellDelayVariationTolerance.*

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

ATTRIBUTE Aal1Ces cellDelayVariationTolerance (cdvt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum time that a cell may arrive late, compared to a nominal time established at buffer initialization, without producing errors on the service interface. The nominal time of a cell's arrival is predicted according to the time interval required to transmit a cell's worth of data on the service interface. This attribute's value is the delay that the Cell Delay Variation Tolerance buffer adds to the egress stream immediately after the buffer initializes. The buffer absorbs variation in the arrival time of cells from the network, so that a steady stream of data appears on the service interface. If the buffer underflows, due to a late cell, fill-in data is output on the service interface while the buffer re-initializes. When the buffer has re-initialized, normal data is output on the service interface and the delay in the buffer is restored to the value of this attribute. This attribute must have a value lower than a numeric value of *maximumBufferDelay*. The relationship between this attribute and *bufferSize* is described under that attribute.

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

On MSA cards this attribute's provisionable range is 0.01 to 31.87ms and the value applied is rounded up to the nearest multiple of 0.125ms. On ***4pOC3ChSmIr*** card, this attribute's provisionable range is 1 to 31ms in steps of 1ms. On ***2pSTM1Ch*** and ***2pSTM1eCh*** cards, this attribute's provisionable range is 1 to 28ms in steps of 1 ms.

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

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

ATTRIBUTE Aal1Ces remoteEndType (remEndType)

Access	Read and write
Criticality	Process
Description	If this attribute is set to ***ces***, then the remote end Inter Working Function (IWF) is a CES IWF as defined by the ATM Forum. This is the default value for all card types. If this attribute is set to ***pvgExclusivePrs***, the remote end IWF is a CES IWF in a VSP (Voice Services function Processor) and the TDM channel is used as a PVG TDM service channel. Furthermore, the primary rate stream (that is, E1 or DS1 stream) that this CES uses cannot be shared with another CES with *remoteEndType* set to ***pvgExclusivePrs*** or ***pvgSharedPrs***. The Primary Rate Stream (PRS) may be shared with other *Aal1Ces* components with *remoteEndType* set to ***ces***. If this attribute is set to ***pvgSharedPrs***, the remote end IWF is a CES IWF in a VSP FP and the TDM channel is used as a PVG TDM service channel. The PRS may be shared with other *Aal1Ces* components with *remoteEndType* set to ***pvgSharedPrs*** or ***ces***.
Mib	CircuitEmulationService
Values	ces pvgSharedPrs pvgExclusivePrs
Default	ces

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GROUP Aal1Ces OsiState (State)

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

ATTRIBUTE Aal1Ces adminState (osiAdmin)

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

ATTRIBUTE Aal1Ces operationalState (osiOper)

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

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	CircuitEmulationService
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Aal1Ces usageState (osiUsage)

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

ATTRIBUTE Aal1Ces availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

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

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

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

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

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

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

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

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

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

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

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ATTRIBUTE Aal1Ces proceduralStatus (osiProc)

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

ATTRIBUTE Aal1Ces controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

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

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

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

Mib	CircuitEmulationService
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Aal1Ces alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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

ATTRIBUTE Aal1Ces standbyStatus (osiStby)

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

ATTRIBUTE Aal1Ces unknownStatus (osiUnknw)

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

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

GROUP Aal1Ces Operational (Oper)

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

ATTRIBUTE Aal1Ces cellLossStatus (cellLoss)

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

ATTRIBUTE Aal1Ces aal1LayerLossStatus (aal1Loss)

Access	Read only
Description	This attribute is set to ***loss*** when an AAL1 layer alarm is raised, and ***noLoss*** when it is clear. This attribute and the AAL1 layer alarm are not supported by the ***4pDS3ChAal1***, ***4pOC3ChSmlr*** , ***2pSTM1eCh*** and ***2pSTM1Ch*** cards. Thus, this attribute does not appear for these two cards.
Mib	CircuitEmulationService
Values	noLoss loss
Default	noLoss

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ATTRIBUTE Aal1Ces connectionStatus (connStatus)

Access	Read only
Description	This attribute indicates whether a service is non-operational because of a problem with the service interface side of the service (in which case, it is set to ***channelNotReady***) or because of a problem with the ATM side of the service (in which case, it is set to ***atmNotConfigured*** or ***atmNotReady***). When this attribute is set to ***channelNotReady***, it is an indication that the corresponding *Chan* component (as defined by the attribute *interfaceName*) or the *Chan* component's parent port component (*Lp/n Ds1/m* or *Lp/n E1/m*) is locked. When this attribute is set to ***atmNotConfigured***, it is an indication that no sub-component has been provisioned, and thus no ATM connection has been configured for the service. When this attribute is set to ***atmNotReady***, it is an indication that the ATM connection with which the service is associated (as defined by a sub-component) has been lost or that it is currently unable to carry CES data. This attribute is set to ***connected*** when a service is operational (that is, the OSI attribute *operationalState* is ***enabled***.)
Mib	CircuitEmulationService
Values	connected channelNotReady atmNotReady atmNotConfigured
Default	channelNotReady

GROUP Aal1Ces Statistics (Stats)

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

ATTRIBUTE Aal1Ces cellsTransmitted (txCells)

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

ATTRIBUTE Aal1Ces cellsReceived (rxCells)

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

ATTRIBUTE Aal1Ces lostCells (lostCells)

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

ATTRIBUTE Aal1Ces bufferUnderflows (uFlows)

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

ATTRIBUTE Aal1Ces bufferOverflows (oFlows)

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

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Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces reassembledCells (reassCells)

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

ATTRIBUTE Aal1Ces headerErrors (hdrErrors)

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

ATTRIBUTE Aal1Ces pointerReframes (ptrReframes)

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

ATTRIBUTE Aal1Ces pointerParityErrors (ptrParityErrors)

Access	Read only

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Description	This attribute counts the number of times that the AAL1 reassembly unit detects a parity check failure at the point where an SDT pointer is expected. Errors of this kind can occur because of problems at the far end. This attribute is meaningful for structured services only, and will be 0 for unstructured services. This counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces aal1SequenceErrors (seqErrors)

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

ATTRIBUTE Aal1Ces misinsertedCells (misinsertCells)

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

COMPONENT Aal1Ces NailedUpAdaptationPoint (Nap)

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

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from ATM cells.

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

Mib — CircuitEmulationService

Common Verbs — Help, List, Display, Add, DELete

GROUP Aal1Ces Nap Provisioned (Prov)

Properties — Provisioned

Description — This group contains the provisioning data for the *NailedUpAdaptationPoint* component.

Mib — CircuitEmulationService

ATTRIBUTE Aal1Ces Nap atmConnection (ac)

Access — Read and write

Criticality — Component

Description — This attribute specifies the identity of the component to which the *NailedUpAdaptationPoint* is linked. This is an *AtmIf Vcc NailedUpEndPoint or an AtmIf Vpt Vcc NailedUpEndPoint* (the AAL1 cells are transported off the switch over an ATM UNI, where they are routed to the appropriate AAL1 entity at the other end by the ATM bearer service).

Mib — CircuitEmulationService

Values — Link (Service, applicationName)

Default — No default

COMPONENT Aal1Ces ActiveEndPoint (Aep)

Groups — GROUP Aal1Ces Aep ProvisionedEndPointAddresses (ProvEndPointAddr)
GROUP Aal1Ces Aep Provisioned (Prov)
GROUP Aal1Ces Aep EndPointAddressOper (EpOper)
GROUP Aal1Ces Aep ActiveEndPointOper (Out)

Scope — Application

Description — *Aal1Ces/n ActiveEndPoint*

The *ActiveEndPoint* component attempts to set up a switched virtual circuit automatically between two *Aal1Ces* components.

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The *ActiveEndPoint* component will make connection setup attempts periodically whenever a connection has not been established. The component will cease connection setup attempts after a number of consecutive failed attempts, as specified by the *retryLimit* attribute.

The *ActiveEndPoint* component may also accept an incoming setup request if a connection is not already established. To be accepted, an incoming connection setup request must have originated from *remoteAddress*. Additionally, either connection attempts must have been ceased due to *retryLimit* consecutive failures, or the *localAddress* of the incoming connection setup request must be smaller than the *remoteAddress* of the request.

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

Mib — CircuitEmulationService

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

VERB Restart Aal1Ces Aep

Impact — Service

Description — This command is used to restart the automatic connections procedure. The operational attributes *retryTimerValue* and *retryFailures* will also be reset.

This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed, as specified by *retryLimit*, or before the limit has been reached.

This command may also be used when a connection has been established, in which case the connection will first be released.

This command will fail if the *channel* associated with the parent *Aal1Ces* component is disabled, or if *svcStatus* has the value ***initialising***. If *svcStatus* has the value ***failed***, this command may fail.

GROUP Aal1Ces Aep **ProvisionedEndPointAddresses (ProvEndPointAddr)**

Properties — Provisioned

Description — This group contains NSAP address provisioning data for components using switched virtual circuits.

Mib — CircuitEmulationService

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ATTRIBUTE Aal1Ces Aep expectedRemoteAddress (expectedAddr)

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

ATTRIBUTE Aal1Ces Aep localAddress (localAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the local NSAP address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on *nodePrefix* will be provided. If *ModuleData nodePrefix* has not been provisioned and one or more alternate switch prefixes (the *alternatePorsPrefixes* attribute of the *ModuleData* component) have been provisioned, a default value for *localAddress* based on the first provisioned *alternatePorsPrefix* value will be provided. If no switch prefixes have been provisioned, *localAddress* will default to an empty string. To obtain a valid default *localAddress* in this case, either or both of the *ModuleData nodePrefix* and *ModuleData alternatePorsPrefixes* attributes must be provisioned, and this end point component must then be deleted and re-added.
Mib	CircuitEmulationService
Values	String (40, ASCII)
Default	No default

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GROUP Aal1Ces Aep Provisioned (Prov)

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

ATTRIBUTE Aal1Ces Aep addressToCall (addrToCall)

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

ATTRIBUTE Aal1Ces Aep routingOption (routing)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of routing to use for establishing the connection: The ***4pDS3ChAal1***, ***4pOC3Chsmlr*** , ***2pSTM1eCh*** and ***2pSTM1Ch*** cards accept only ***atmOnly***. Multi-Service Access cards accept all four options and have a default value of ***porsOnly***. All other CES cards accept only ***porsOnly***. ***porsOnly*** means that only the Path Oriented Routing System may be used in establishing a connection. ***atmOnly*** means that only the native ATM Routing may be used in establishing a connection. ***porsFirst*** means that the switch tries to establish a connection using the Path Oriented Routing System first, and, if the connection cannot be established, it tries native ATM Routing instead. ***atmFirst*** means that the switch tries to establish a connection using native ATM Routing first, and, if the connection cannot be established, it tries the Path Oriented Routing System instead.
Mib	CircuitEmulationService
Values	porsOnly atmOnly

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	porsFirst atmFirst
Default	No default

ATTRIBUTE Aal1Ces Aep profile (profile)

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

ATTRIBUTE Aal1Ces Aep firstRetryInterval (int)

Access	Read and write
Criticality	Component
Description	This attribute specifies the time to wait, in seconds, before attempting to establish the connection after the first failed attempt. The time to wait between subsequent call attempts will generally differ due to a backoff scheme. This attribute is not applicable for ***4pDS3ChAal1*** and ***4pOC3ChSmIr*** cards.
Mib	CircuitEmulationService
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Aal1Ces Aep retryLimit (limit)

Access	Read and write
Criticality	Component
Description	*retryLimit* specifies the maximum number of consecutive unsuccessful connection setup attempts that may be made before further attempts are abandoned. If this limit is reached, the *Restart* verb may be used to restart connection attempts.

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If *retryLimit* is ***0***, there is no limit; attempts will continue indefinitely until a successful connection is established.

Mib	CircuitEmulationService
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Aal1Ces Aep activeEndPointType (type)

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

ATTRIBUTE Aal1Ces Aep calledVpiVci (vc)

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

GROUP Aal1Ces Aep EndPointAddressOper (EpOper)

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

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ATTRIBUTE Aal1Ces Aep remoteAddress (remoteAddr)

Access	Read only
Criticality	Component
Description	*remoteAddress* is the address of the remote end point. If a connection is currently established, *remoteAddress* will contain the address of the remote end point. If a connection is not established, *remoteAddress* will be ***Unknown***.
Mib	CircuitEmulationService
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Aal1Ces Aep lastTearDownCause (cause)

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

ATTRIBUTE Aal1Ces Aep lastTearDownDiagnostic (diag)

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

GROUP Aal1Ces Aep ActiveEndPointOper (Out)

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

ATTRIBUTE Aal1Ces Aep svcStatus (status)

Access	Read only

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

ATTRIBUTE Aal1Ces Aep lastSetupFailureCause (failCause)

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

ATTRIBUTE Aal1Ces Aep lastSetupFailureDiagnostic (failDiag)

Access	Read only

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

ATTRIBUTE Aal1Ces Aep retryTimeRemaining (timer)

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

ATTRIBUTE Aal1Ces Aep retryFailures (failures)

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

COMPONENT Aal1Ces PassiveEndPoint (Pep)

Groups	GROUP Aal1Ces Pep ProvisionedEndPointAddresses (ProvEndPointAddr) GROUP Aal1Ces Pep EndPointAddressOper (EpOper) GROUP Aal1Ces Pep PassiveEndPointOper (PassiveOper)
Scope	Application
Description	*Aal1Ces/n PassiveEndPoint*

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The *PassiveEndPoint* component provides a passive end point for a switched virtual connection between two applications.

A *PassiveEndPoint* awaits incoming connection setup requests. A setup request will only be accepted if a connection is not already established, and the request originated from *expectedRemoteAddress*.

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

Mib: CircuitEmulationService

Common Verbs:
Help
List
Display
Add
DELete

GROUP Aal1Ces Pep ProvisionedEndPointAddresses (ProvEndPointAddr)

Properties: Provisioned

Description: This group contains NSAP address provisioning data for components using switched virtual circuits.

Mib: CircuitEmulationService

ATTRIBUTE Aal1Ces Pep expectedRemoteAddress (expectedAddr)

Access: Read and write

Criticality: Component

Description: This attribute specifies the expected remote address prefix for an incoming connection setup request.

If *expectedRemoteAddress* is not empty, only matching connections will be considered for acceptance. If *expectedRemoteAddress* is 40 characters long, the remote address must match exactly to be accepted. If *expectedRemoteAddress* is less than 40 characters long, the remote address must begin with *expectedRemoteAddress* to be accepted.

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

Mib: CircuitEmulationService

Values: String (0..40, ASCII)

Default: ""

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ATTRIBUTE Aal1Ces Pep localAddress (localAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the local NSAP address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on *nodePrefix* will be provided. If *ModuleData nodePrefix* has not been provisioned and one or more alternate switch prefixes (the *alternatePorsPrefixes* attribute of the *ModuleData* component) have been provisioned, a default value for *localAddress* based on the first provisioned *alternatePorsPrefix* value will be provided. If no switch prefixes have been provisioned, *localAddress* will default to an empty string. To obtain a valid default *localAddress* in this case, either or both of the *ModuleData nodePrefix* and *ModuleData alternatePorsPrefixes* attributes must be provisioned, and this end point component must then be deleted and re-added.
Mib	CircuitEmulationService
Values	String (40, ASCII)
Default	No default

GROUP Aal1Ces Pep EndPointAddressOper (EpOper)

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

ATTRIBUTE Aal1Ces Pep remoteAddress (remoteAddr)

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

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Default	No default

ATTRIBUTE Aal1Ces Pep lastTearDownCause (cause)

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

ATTRIBUTE Aal1Ces Pep lastTearDownDiagnostic (diag)

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

GROUP Aal1Ces Pep PassiveEndPointOper (PassiveOper)

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

ATTRIBUTE Aal1Ces Pep svcStatus (status)

Access	Read only
Description	*svcStatus* indicates the status of the incoming connection. When this attribute has the value ***initialising***, it indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests will be processed. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that a connection has

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not been established, and that no incoming setup requests will be processed.

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

Mib: CircuitEmulationService

Values:
initialising
connecting
connected
idle
failed

Default: No default

COMPONENT Aal1Ces LogicalConnection (LCo)

Groups:
GROUP Aal1Ces LCo PathData
GROUP Aal1Ces LCo Statistics (Stats)

Scope: Application

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

Mib: CircuitEmulationService

Common Verbs:
Help
List
Display

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VERB RERoute Aal1Ces LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Aal1Ces LCo PathData

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

ATTRIBUTE Aal1Ces LCo state

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

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ATTRIBUTE Aal1Ces LCo overrideRemoteName (orn)

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

ATTRIBUTE Aal1Ces LCo end

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

ATTRIBUTE Aal1Ces LCo costMetric (cost)

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

ATTRIBUTE Aal1Ces LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established.

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	The delay for an LCo that is originated and terminated on the same module is 0.
Mib	CircuitEmulationService
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Aal1Ces LCo roundTripDelay (rtd)

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

ATTRIBUTE Aal1Ces LCo setupPriority (spri)

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

ATTRIBUTE Aal1Ces LCo holdingPriority (hpri)

Access	Read only

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

ATTRIBUTE Aal1Ces LCo requiredTxBandwidth (tbw)

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

ATTRIBUTE Aal1Ces LCo requiredRxBandwidth (rbw)

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

ATTRIBUTE Aal1Ces LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic

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allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.

Mib	CircuitEmulationService
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Aal1Ces LCo permittedTrunkTypes (pttyp)

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

ATTRIBUTE Aal1Ces LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	CircuitEmulationService

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Values	Decimal (0..7)
Default	No default

ATTRIBUTE Aal1Ces LCo requiredCustomerParameter (rcparm)

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

ATTRIBUTE Aal1Ces LCo emissionPriority (epri)

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

ATTRIBUTE Aal1Ces LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority*. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	CircuitEmulationService
Values	Decimal (1..3)
Default	No default

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ATTRIBUTE Aal1Ces LCo pathType (pType)

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

ATTRIBUTE Aal1Ces LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	CircuitEmulationService
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Aal1Ces LCo pathFailureCount (pfcount)

Access	Read only

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

ATTRIBUTE Aal1Ces LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	CircuitEmulationService
Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE Aal1Ces LCo lastTearDownReason

Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:

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none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.

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trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib — CircuitEmulationService

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

Default — none

ATTRIBUTE Aal1Ces LCo pathFailureAction

Access — Read only

Description — This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are

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different at both ends only the calling end is allowed to reconnect.

All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends

Mib	CircuitEmulationService
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Aal1Ces LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority.* A connection may also always bump in order to obtain the best route.
Mib	CircuitEmulationService
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Aal1Ces LCo optimization (opt)

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

ATTRIBUTE Aal1Ces LCo pathUpDateTime

Access	Read: Service Write: Illegal

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

ATTRIBUTE Aal1Ces LCo path

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

GROUP Aal1Ces LCo Statistics (Stats)

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

ATTRIBUTE Aal1Ces LCo pktsToNetwork

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

ATTRIBUTE Aal1Ces LCo bytesToNetwork

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

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ATTRIBUTE Aal1Ces LCo pktsFromNetwork

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

ATTRIBUTE Aal1Ces LCo bytesFromNetwork

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

COMPONENT Aal1Ces AtmConnection (AtmCon)

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

GROUP Aal1Ces AtmCon Operational (Oper)

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

ATTRIBUTE Aal1Ces AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.

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Mib	CircuitEmulationService
Values	The name of the component
Default	No default

COMPONENT Aal1Ces Reroute

Groups	GROUP Aal1Ces Reroute LocalOperational (LOper) GROUP Aal1Ces Reroute GlobalOperational (GOper)
Scope	Application
Description	*Aal1Ces/n Reroute* This component represents the ATM rerouting capabilities of an AAL1 CES connection. The addition or deletion of this component, or changes to its provisionable attributes, does not affect an established connection.
Mib	CircuitEmulationService
Subcomponents	COMPONENT Aal1Ces Reroute Ov
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE Aal1Ces Reroute

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

GROUP Aal1Ces Reroute LocalOperational (LOper)

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

ATTRIBUTE Aal1Ces Reroute localLastRrCauseCode

Access	Read only

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

GROUP Aal1Ces Reroute GlobalOperational (GOper)

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

ATTRIBUTE Aal1Ces Reroute globalLastRrCauseCode

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

COMPONENT Aal1Ces Reroute Ov

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

GROUP Aal1Ces Reroute Ov Provisioned (Prov)

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

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ATTRIBUTE Aal1Ces Reroute Ov protocol

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

ATTRIBUTE Aal1Ces Reroute Ov numOptAttempts

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the

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connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib	CircuitEmulationService
Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE Aal1Ces Reroute Ov **moduleOptimizationConnections**

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

ATTRIBUTE Aal1Ces Reroute Ov **switchoverMechanism**

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment.

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One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum "Domain based Rerouting" specification is used for switchover. This value ensures interoperability with other vendors' equipment running ATM Forum "Domain based Rerouting".
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: CircuitEmulationService

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP Aal1Ces Reroute Ov CesProvisioned (CProv)

Properties: Provisioned

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

Mib: CircuitEmulationService

ATTRIBUTE Aal1Ces Reroute Ov localConnectionRecoverySubscr (lRecSub)

Access: Read and write

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

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

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

Mib: CircuitEmulationService

Values:
no
yes
sameAsARtgPnniReroute (sameAs)

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Default	sameAsARtgPnniReroute

ATTRIBUTE Aal1Ces Reroute Ov localPathOptimizationSubscr (lOptSub)

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

ATTRIBUTE Aal1Ces Reroute Ov globalConnectionRecoverySubscr (gRecSub)

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

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Values	no yes sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE Aal1Ces Reroute Ov globalPathOptimizationSubscr (gOptSub)

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

COMPONENT Aal1Ces RerouteInfo (RerInfo)

Groups	GROUP Aal1Ces RerInfo Operational (Oper) GROUP Aal1Ces RerInfo EbrOperational (EOper) GROUP Aal1Ces RerInfo LocalOperational (LOper) GROUP Aal1Ces RerInfo GlobalOperational (GOper) GROUP Aal1Ces RerInfo EbrStatistics (EStats) GROUP Aal1Ces RerInfo LocalStatistics (LStats) GROUP Aal1Ces RerInfo GlobalStatistics (GStats)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci RerouteInfo* *AtmIf/n Vpc/vpi RerouteInfo* *AtmIf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo*

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This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.

Mib: CircuitEmulationService

Common Verbs: Help, List, Display

GROUP Aal1Ces RerInfo Operational (Oper)

Properties: Operational

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

Mib: CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo lastOptimizationMetric (lOptMet)

Access: Read only

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

Mib: CircuitEmulationService

Values: cdv, maxCtd, aw, specifiedPath

Default: No default

GROUP Aal1Ces RerInfo EbrOperational (EOper)

Properties: Operational

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

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

Mib: CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo ebrRecoverySubscribed (eRecSub)

Access: Read only

Description: This attribute indicates whether the connection segment is subscribed to EBR connection recovery.

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

Mib: CircuitEmulationService

Values:
no
yes

Default: No default

ATTRIBUTE Aal1Ces RerInfo ebrOptimizationSubscribed (eOptSub)

Access: Read only

Description: This attribute indicates whether the connection segment is subscribed to EBR path optimization.

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

Mib: CircuitEmulationService

Values:
no
yes

Default: No default

ATTRIBUTE Aal1Ces RerInfo ebrOptimizationMetricValue (eOptVal)

Access: Read only

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

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

Mib: CircuitEmulationService

Values:
Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE Aal1Ces RerInfo ebrOptimalMetricValue (eOptMetVal)

Access: Read only

Description: This attribute indicates the EBR optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or

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when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

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

Mib	CircuitEmulationService
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE Aal1Ces RerInfo ebrOptimizationState (eOptSt)

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

ATTRIBUTE Aal1Ces RerInfo ebrTimeOfLastRecovery (eTime)

Access	Read only
Description	This attribute indicates the date and time of the last EBR connection recovery.

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	This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	CircuitEmulationService
Values	Time (DHMS)
Default	No default

GROUP Aal1Ces RerInfo LocalOperational (LOper)

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

ATTRIBUTE Aal1Ces RerInfo localRecoverySubscribed (lRecSub)

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

ATTRIBUTE Aal1Ces RerInfo localOptimizationSubscribed (lOptSub)

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

ATTRIBUTE Aal1Ces RerInfo localOptimizationMetricValue (lOptVal)

Access	Read only

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Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. A value of ***undefined*** indicates that the local optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE Aal1Ces RerInfo localOptimalMetricValue (lOptMetVal)

Access	Read only
Description	This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE Aal1Ces RerInfo localOptimizationState (lOptSt)

Access	Read only
Description	This attribute indicates the current local optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.

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optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

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

Mib	CircuitEmulationService
Values	optimal recovered optimized
Default	No default

ATTRIBUTE Aal1Ces RerInfo localTimeOfLastRecovery (lTime)

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

GROUP Aal1Ces RerInfo GlobalOperational (GOper)

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

ATTRIBUTE Aal1Ces RerInfo globalRecoverySubscribed (gRecSub)

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

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Default	No default

ATTRIBUTE Aal1Ces RerInfo globalOptimizationSubscribed (gOptSub)

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

ATTRIBUTE Aal1Ces RerInfo globalOptimizationMetricValue (gOptVal)

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

ATTRIBUTE Aal1Ces RerInfo globalOptimalMetricValue (gOptMetVal)

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

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Mib	CircuitEmulationService
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE Aal1Ces RerInfo globalOptimizationState (gOptSt)

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

ATTRIBUTE Aal1Ces RerInfo globalTimeOfLastRecovery (gTime)

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

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GROUP Aal1Ces RerInfo EbrStatistics (EStats)

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

ATTRIBUTE Aal1Ces RerInfo totalEbrConnectionRecoveries (eConnRec)

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

ATTRIBUTE Aal1Ces RerInfo totalEbrPathOptimizations (ePathOpt)

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

ATTRIBUTE Aal1Ces RerInfo totalEbrOptimizationAttempts (eOptAtt)

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

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GROUP Aal1Ces RerInfo LocalStatistics (LStats)

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

ATTRIBUTE Aal1Ces RerInfo totalLocalConnectionRecoveries (lConnRec)

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

ATTRIBUTE Aal1Ces RerInfo totalLocalPathOptimizations (lPathOpt)

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

ATTRIBUTE Aal1Ces RerInfo totalLocalOptimizationAttempts (lOptAtt)

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

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GROUP Aal1Ces RerInfo **GlobalStatistics (GStats)**

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

ATTRIBUTE Aal1Ces RerInfo **totalGlobalConnectionRecoveries (gConnRec)**

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

ATTRIBUTE Aal1Ces RerInfo **totalGlobalPathOptimizations (gPathOpt)**

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

ATTRIBUTE Aal1Ces RerInfo **totalGlobalOptimizationAttempts (gOptAtt)**

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

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Aal1Ces

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Nortel Multiservice Switch 7400, 15000, 20000

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COMPONENT ActiveAlarmServices (AAServ)

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

VERB Replay AAServ

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

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VERB Clear **AAServ**

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

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Components Reference - AAServ

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Components Reference - Ac

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Type: NTP
Language type: U.S. English

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COMPONENT AccessControl (Ac)

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

GROUP Ac Provisioned (Prov)

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

ATTRIBUTE Ac publicKeyAuth (keyAuth)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates whether Telnet sessions require a public key exchange in order to log in to the node. FMIP sessions always require a public key exchange for login authentication.

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Mib	MgmtInterfaces
Set of	telnet
Default	No default

COMPONENT Ac Userid

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

GROUP Ac Userid Provisioned (Prov)

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

ATTRIBUTE Ac Userid password (passwd)

Access	Read: Illegal Write: System_admin
Description	This attribute holds a password for this user only if this user is to be authenticated locally by the node. If this user is to be authenticated remotely (for example, via a RADIUS server) then the password is left blank. This is a write-only attribute to provide additional security for passwords. The password string consists of 5-8 characters, which may be any printable ASCII characters. If the password string includes any non-alphanumeric character, such as $ or *, the entire string must be enclosed in double quotes. Letters in the password string are case-sensitive.
Mib	MgmtInterfaces
Values	String (0..8, ASCII)

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Default	No default

ATTRIBUTE Ac Userid customerIdentifier (cid)

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

ATTRIBUTE Ac Userid commandScope (scope)

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

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ATTRIBUTE Ac Userid commandImpact (impact)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the command impact assigned to the user. The impact determines the importance of the commands which the userid will be allowed to execute. Impact has five levels: 1) ***debug*** impact implies the userid can issue all debugging commands. Debug is the highest impact level. 2) ***systemAdministration*** impact implies the userid can issue provisioning commands on security components. This means the userid can *Add*, *Delete*, *Display*, or *Set* the *Userid* and *IpAccess* subcomponents of *AccessControl*. 3) ***configuration*** impact implies the userid can issue provisioning commands to alter the provisioned configuration of the node, such as *Start Prov*, *Add*, *Delete*, and *Set*. 4) ***service*** impact implies the userid can issue operational commands which may affect the service of running components, such as *Lock* and *Unlock*. 5) ***passive*** impact implies the userid can only issue query commands which display unrestricted information but otherwise do not affect the operation or configuration of the node, such as *List* and *Display.* Passive is the lowest impact level. Note that impact is hierarchical: A user provisioned with ***debug*** impact can also issue all other commands at lower impact levels.
Mib	MgmtInterfaces
Values	debug systemAdministration configuration service passive
Default	passive

ATTRIBUTE Ac Userid allowedAccess (nmifs)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the set of network management interfaces through which the user will be allowed incoming access to the node. The *allowedAccess* attribute can be used to restrict a userid to a desired subset of the network management interfaces provided.

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Mib	MgmtInterfaces
Set of	local remote (telnetSsh) fmip ftp
Default	(local)

ATTRIBUTE Ac Userid loginDirectory (dir)

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

ATTRIBUTE Ac Userid allowedOutAccess (outAccess)

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

ATTRIBUTE Ac Userid timeoutProtocol

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

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Default	enabled

ATTRIBUTE Ac Userid remoteAuth

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

COMPONENT Ac IpAccess

Instance	IP address
Groups	GROUP Ac IpAccess Provisioned (Prov)
Scope	Application
Description	*AccessControl IpAccess/<IP address>* This component represents a single “friendly” remote IP address which is permitted to call into the Telnet, FTP, FMIP or Ssh Interfaces on the node. All the friendly IP addresses must be provisioned as *IpAccess* components. The *IpAccess* components, taken together, form a complete list of all the IP addresses which are allowed access to the node’s Network Management Interfaces. This set of friendly IP addresses excludes all other addresses, restricting access only to the friendly computers. The instance value is the IP address itself, or an IP subnetwork address, entered in Internet nnn.nnn.nnn.nnn notation. An IP subnetwork address, in combination with the *ipAddressMask* attribute described below, may be provisioned to include an entire IP subnetwork into the friendly list with a single *IpAccess* component. Note that with the introduction of Telnet client capability, the *IpAccess* lists

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must allow for the fact that Telnet access may now be from another node in the network, not just management workstations.

Mib: MgmtInterfaces

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

GROUP Ac IpAccess Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for an *IpAccess* component.

Mib: MgmtInterfaces

ATTRIBUTE Ac IpAccess ipAddressMask (mask)

Access:
Read: System_admin
Write: System_admin

Description: This attribute indicates the bit mask indicating the significant bits which are used in the comparison of an incoming IP address against the “friendly” IP address in the instance value of the *IpAccess* component. This bit mask is ANDed to the incoming IP address, and ANDed to the instance value, before the comparison.

An IP subnetwork address, in combination with this bit mask attribute, may be provisioned to include an entire IP subnetwork into the friendly IP address list with a single *IpAccess* component.

Mib: MgmtInterfaces

Values: IP address

Default: 255.255.255.255

COMPONENT Ac Radius (Radius)

Groups:
GROUP Ac Radius Operational (Oper)
GROUP Ac Radius Provisioned (Prov)

Scope: Device

Description:
Ac Radius
This component contains all the provisioned and operational information necessary to support the RADIUS protocol as specified in RFC 2865.

The *Radius* component represents the on-switch RADIUS client that communicates with a RADIUS server to authenticate usernames and passwords for Telnet, FTP, FMIP, and Local sessions. The RADIUS server

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sends back user settings that are used to start a session. This component also represents the state of the node as a Network Access Server (NAS).

The *Radius* component must have at least one *Server* subcomponent provisioned. Note that a *Server* subcomponent is created automatically when the *Radius* component is first created.

Mib	OamRadius
Subcomponents	COMPONENT Ac Radius Server (Server)
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Ac Radius Operational (Oper)

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

ATTRIBUTE Ac Radius badServerAddressPdus (badServerAdd)

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

GROUP Ac Radius Provisioned (Prov)

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

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ATTRIBUTE Ac Radius nasIdentifier (nasId)

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

ATTRIBUTE Ac Radius numberOfRetries (numRetries)

Access	Read: Service Write: System_admin
Description	This attribute specifies the number of times that a RADIUS Access-Request PDU is resent to a RADIUS server if a time-out occurs. If a time-out occurs while attempting to authenticate with a RADIUS server, the *timeouts* attribute under the *Server* subcomponent is incremented by one.
Mib	OamRadius
Values	Decimal (1..5)
Default	3

ATTRIBUTE Ac Radius requestTimeout (reqto)

Access	Read: Service Write: System_admin
Description	This attribute specifies the amount of time to wait for a RADIUS response from a RADIUS server after a RADIUS Access-Request PDU has been sent before declaring a time-out. This value should be increased if there are a large number of time-outs that occur due to latencies in the network or if a RADIUS server is slow to respond.

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This value should be decreased if the authentication wait time needs to be reduced. However, decreasing the value may cause more authentication failures because the time specified is not sufficient to receive a RADIUS response PDU from the RADIUS server. Furthermore, a smaller value may result in more time-outs and therefore more retransmissions to occur.

Mib	OamRadius
Values	Decimal (1..15)
Units	seconds
Default	8

COMPONENT Ac Radius Server (Server)

Instance	Decimal (0..1)
Groups	GROUP Ac Radius Server OsiState (State) GROUP Ac Radius Server Operational (Oper) GROUP Ac Radius Server Provisioned (Prov)
Scope	Device
Description	*Ac Radius Server/n* The *Server* component contains all the provisioned and operational information necessary to describe interactions with a RADIUS server. When this component is in a locked state, authentication with the RADIUS server specified by the *serverIpAddress* attribute under the *Server* component is not possible. When this component is in an unlocked state, it becomes available to use for authentication. Note that there must be at least one *Server* component that is in an unlocked state at any time. If only one *Server* instance exists, it is not possible to lock it. The RADIUS server selected to use for authentication is the last one from which the RADIUS client has received a response to an authentication request, provided that the *Server* component is not locked. If the RADIUS client has not received a response from any servers, the servers are tried in numeric order. There must exist at least one instance of this component.
Mib	OamRadius
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Ac Radius Server **OsiState (State)**

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

ATTRIBUTE Ac Radius Server **adminState (osiAdmin)**

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

ATTRIBUTE Ac Radius Server **operationalState (osiOper)**

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

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Mib	OamRadius
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ac Radius Server **usageState (osiUsage)**

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

GROUP Ac Radius Server **Operational (Oper)**

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

ATTRIBUTE Ac Radius Server **accessRequests (req)**

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

ATTRIBUTE Ac Radius Server **accessAccepts (acc)**

Access	Read only
Description	This attribute counts the RADIUS Access-Accept PDUs that are received from the RADIUS server with the minimum number of required Vendor-

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	Specific Attributes (VSAs). The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server **accessRejects (rej)**

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

ATTRIBUTE Ac Radius Server **packetsDropped (pktdrop)**

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

ATTRIBUTE Ac Radius Server **accessRetransmissions (retran)**

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

ATTRIBUTE Ac Radius Server **timeouts (to)**

Access	Read only

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Description	This attribute counts the time-outs that have occurred for the *Server* component. A time-out occurs when a RADIUS Access-Request PDU has been sent, but a corresponding RADIUS Access-Accept or Access-Reject PDU has not been received from the RADIUS server within the time specified by the *requestTimeout* attribute under the *Radius* component. When a time-out occurs, the node retries the same server if the number of attempts on the same server is less than the number specified by the *numberOfRetries* attribute under the R*adius* component. If the number of attempts is greater than the *numberOfRetries* attribute, the next available RADIUS server is attempted. If a retry is attempted, the *accessRetransmissions* attribute is incremented. The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server badAuthenticators (badauth)

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

ATTRIBUTE Ac Radius Server pendingRequests (pendReqs)

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

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

ATTRIBUTE Ac Radius Server **unknownTypes (unkwn)**

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

ATTRIBUTE Ac Radius Server **malformedAccessResponses (malResp)**

Access	Read only
Description	This attribute counts the malformed AccessResponses that are received by this Server. Malformed responses include RADIUS type PDUs with incorrect fields, non-RADIUS PDUs that are sent to this port, and Access-Accept PDUs that do not have the minimum number of required Vendor-Specific Attributes (VSAs). The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server **roundTripTime (rtt)**

Access	Read only
Description	This attribute measures the time interval between the most recent RADIUS Access-Request PDU sent to a RADIUS server and the corresponding RADIUS Access-Accept PDU or RADIUS Access-Reject PDU from that RADIUS server.
Mib	OamRadius
Values	Decimal (0..4294967295)

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Units	seconds
Default	No default

GROUP Ac Radius Server **Provisioned (Prov)**

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

ATTRIBUTE Ac Radius Server **sharedSecret (secret)**

Access	Read: Illegal Write: System_admin
Description	This attribute specifies the key used for the MD-5 hashing algorithm for encrypting a password for transmission to a RADIUS server. It is stored using a symmetrical encryption algorithm. Since the key is large, it is recommended that it be generated randomly to further make the *sharedSecret* attribute difficult to guess by an attacker. It is also recommended that this attribute be changed in accordance with the encryption key change policies used by the network operator. This includes algorithms used for generating the *sharedSecret* string and frequency of change policies.
Mib	OamRadius
Values	String (16..64, ASCII)
Default	No default

ATTRIBUTE Ac Radius Server **serverIpAddress (servip)**

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

ATTRIBUTE Ac Radius Server **serverPortNumber (servport)**

Access	Read: Service Write: System_admin

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

ATTRIBUTE Ac Radius Server ipStack

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

COMPONENT Ac Role

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

GROUP Ac Role Provisioned (Prov)

Properties	Provisioned

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

ATTRIBUTE Ac Role customerIdentifier (cid)

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

ATTRIBUTE Ac Role commandScope (scope)

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the command scope assigned to the users with this role. The scope determines the components on which a user with this role will be allowed to operate on (that is, issue the display, set, add, and delete verbs). Scope has three levels: 1) ***network*** scope implies a user with this role can manage components that affect the operation of the entire network, such as trunks. 2) ***device*** scope implies a user with this role can manage components that affect the operation of the entire node, such as processors or the file system. 3) ***application*** scope implies a user with this role can manage components that affect the operation of a single application. Note that scope is hierarchical: A user provisioned with ***network*** scope can also manage components with a scope of ***device*** or ***application***.
Mib	MgmtInterfaces
Values	network device application
Default	application

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ATTRIBUTE Ac Role commandImpact (impact)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the command impact assigned to users with this role. The impact determines the importance of the commands which the users with this role will be allowed to execute. The impact has five levels: 1) ***debug*** impact implies a user with this role can issue all debugging commands. Debug is the highest impact level. 2) ***systemAdministration*** impact implies a user with this role can issue provisioning commands on security components. This means the users with this role can *Add*, *Delete*, *Display*, or *Set* the *Userid, Role* and *IpAccess* subcomponents of *AccessControl*. 3) ***configuration*** impact implies a user with this role can issue provisioning commands to alter the provisioned configuration of the node, such as *Start Prov*, *Add*, *Delete*, and *Set*. 4) ***service*** impact implies a user with this role can issue operational commands which may affect the service of running components, such as *Lock* and *Unlock*. 5) ***passive*** impact implies a user with this role can only issue query commands which display unrestricted information but otherwise do not affect the operation or configuration of the node., such as *List* and *Display*. Passive is the lowest impact level. Note that the impact is hierarchical: A user provisioned with ***debug*** impact can also issue all other commands at lower impact levels.
Mib	MgmtInterfaces
Values	debug systemAdmin config service passive
Default	passive

ATTRIBUTE Ac Role allowedAccess (nmifs)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the set of network management interfaces through which a user with this role will be allowed incoming access to the node. The *allowedAccess* attribute can be used to restrict a user with this role to a desired subset of the network management interfaces provided.

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Mib	MgmtInterfaces
Set of	local remote (telnetSsh) fmip ftp
Default	(local)

ATTRIBUTE Ac Role allowedOutAccess (outAccess)

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

ATTRIBUTE Ac Role loginDirectory (dir)

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

ATTRIBUTE Ac Role timeoutProtocol

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

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Default	enabled

ATTRIBUTE Ac Role remoteOverride

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

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Ac

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Type: NTP
Language type: U.S. English

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Aps

NN10600-060

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Language type: U.S. English

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COMPONENT AutomaticProtectionSwitching (Aps)

Instance	Decimal (0..15999)
Groups	GROUP Aps CustomerIdentifierData (CidData) GROUP Aps Provisioned (Prov) GROUP Aps OsiState (State) GROUP Aps Operational (Oper)
Scope	Device
Description	*AutomaticProtectionSwitching/n* This component manages the line protection of a SONET or SDH interface. Automatic Protection Switching (APS) can switch traffic from an active line onto a standby line when a failure or degradation occurs on the active line. The *Aps* component must have a valid *workingLine* attribute and a valid *protectionLine* attribute. **Note**: A *Test* component provisioned under *Lp/n Sonet/m* is dynamically deleted when that line is added into an APS group. This is because the *Aps* component has a dynamic test component of its own for testing the active line. The *Aps* component may be provisioned only on the Nortel Networks Multiservice 7400. The equivalent component on the Nortel Networks Multiservice Switch 15000 and the Nortel Networks Multiservice Switch 20000 is the *Laps* component.
Mib	Aps
Dyn. Subcomp.	COMPONENT Aps Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

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VERB PROTECTIONLOCKOUT (PROTLOCK) Aps

Impact: Service

Description:

ProtectionLockout Aps/n
This command instructs the *Aps* component to lock out the protection line from being used as the receive active line, using the *nearEndRequest* ***lockoutOfProtection***. If the protection line is active when the *ProtectionLockout* command is entered the working line is made active, even if there is a failure or degradation present on the working line.

If the provisioned *mode* is ***unidirectional*** and a *nearEndRequest* of ***lockoutOfProtection*** is already in effect then this command is ignored. If the provisioned *mode* is ***bidirectional*** and a *nearEndRequest* or *farEndRequest* of ***lockoutOfProtection*** is already in effect then this command is ignored.

This command can be issued if the *Aps* component is either unlocked or locked. It remains in effect until cancelled with the *Clear* command.

VERB SWITCH Aps

Impact: Service

Description:

Switch [-force] [-workingToProtection] [-protectionToWorking] Aps/n
This command instructs the *Aps* component to switch the *nearEndRxActiveLine* attribute from the working line to the protection line (or vice versa) using the *nearEndRequest attribute to* ***manualSwitch***.

If the *-force* option is specified, the *Aps* component is instructed to switch using the higher priority value of ***forcedSwitch for the*** *nearEndRequest attribute*.

If the *-workingToProtection* option is specified, the *Aps* component switches the *nearEndRxActiveLine* from the working line to the protection line.

If the *-protectionToWorking* option is specified, the *Aps* component switches the *nearEndRxActiveLine* attribute from the protection line to the working line.

If a *nearEndRequest* of equal or higher priority is already in effect then this command will be ignored. The command will also be ignored if the provisioned *mode* is ***bidirectional*** and a *farEndRequest* of equal or higher priority is already in effect. For the list of request priorities refer to the description of the *nearEndRequest* attribute of the *Aps* component.

If the *-force* option is specified, this command can be issued when the *Aps* component is either unlocked or locked; otherwise it can only be issued when the *Aps* component is unlocked. It remains in effect until cancelled with the *Clear* command, or until a *nearEndRequest* (or *farEndRequest* if the provisioned *mode* is ***bidirectional***) of higher priority goes into effect.

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VERB CLEAR Aps

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

GROUP Aps CustomerIdentifierData (CidData)

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

ATTRIBUTE Aps customerIdentifier (cid)

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

GROUP Aps Provisioned (Prov)

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

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ATTRIBUTE Aps applicationFramerName (framer)

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

ATTRIBUTE Aps workingLine (working)

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

ATTRIBUTE Aps protectionLine (protection)

Access	Read and write
Criticality	Process
Description	This attribute is a link to the *Path* component whose parent *Sonet* or *Sdh* component provides the *Aps* component's protection line. A value must be defined for this component. This attribute is critical because the APS process runs on the LP associated with the protectionLine. The protection line must exist under the same *Lp* component as the working line, and must link to a *Path* component under the same type of port component (*Sonet* or *Sdh*) as the working line.

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Valid *workingLine* attribute and *protectionLine* attribute pairs must exist. For APS compatible cards the *workingLine* attribute and *protectionLine* attribute pairs must be provisioned on consecutive ports. For example, port 0 would be paired with port 1 and port 2 with port 3, and if the *workingLine* attribute is linked to a *path* component on port 0, then the *protectionLine* attribute must be linked to a *path* component on port 1.

Sonet APS is available on cards of type ***2pOC3SmAtm2***, ***and 2pOC3MmAtm2.***

Mib	Aps
Values	Link (Hardware, applicationFramerName)
Default	No default

ATTRIBUTE Aps mode

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

ATTRIBUTE Aps revertive

Access	Read and write
Description	This attribute specifies whether revertive switching is to be used.

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When this attribute is ***no***, the *Aps* component will not revert the receive active line from protection back to working when a working line request is cleared.

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

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

Mib	Aps
Values	no yes
Default	no

ATTRIBUTE Aps holdOffTime (hoTime)

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

ATTRIBUTE Aps waitToRestorePeriod (wtrPeriod)

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

ATTRIBUTE Aps signalDegradeRatio (sdRatio)

Access	Read and write
Description	This attribute specifies the minimum bit error ratio (BER) for which a Signal Degrade failure is declared. Its value is the exponent of the BER, with

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possible values of ***-5*** through ***-9*** inclusive, which correspond to a BER range of 10e-5 through 10e-9.

The switch initiation time for a Signal Degrade varies depending on the observed BER (*not* the provisioned *signalDegradeRatio*), as described in the following table.

BER - Switch Initiation Time
10e-3 - 10 milliseconds
10e-4 - 100 milliseconds
10e-5 - 1 second
10e-6 - 10 seconds
10e-7 - 100 seconds
10e-8 - 16 minutes 40 seconds
10e-9 - 2 hours 46 minutes 40 seconds

The clearing threshold for a Signal Degrade is one-tenth the *signalDegradeRatio*; for example, if the provisioned *signalDegradeRatio* is ***-5***, the corresponding clearing threshold will be 10e-6. The clearing time varies depending on the clearing threshold (*not* the observed BER), and can be determined from the above table.

Mib — Aps

Values — Signed (-9..-5)

Default — -5

GROUP Aps OsiState (State)

Properties — Operational

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

Mib — Aps

ATTRIBUTE Aps adminState (osiAdmin)

Access — Read only

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

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

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

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

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Aps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Aps operationalState (osiOper)

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

ATTRIBUTE Aps usageState (osiUsage)

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

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Aps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Aps availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which

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	represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.
Mib	Aps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Aps proceduralStatus (osiProc)

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

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

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

ATTRIBUTE Aps controlStatus (osiCntrl)

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

ATTRIBUTE Aps alarmStatus (osiAlarm)

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

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valued set, at most one value is shown to the user.

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

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

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

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

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

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

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

ATTRIBUTE Aps standbyStatus (osiStby)

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

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backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Aps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Aps unknownStatus (osiUnknw)

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

GROUP Aps Operational (Oper)

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

ATTRIBUTE Aps nearEndRxActiveLine (neRxLine)

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

ATTRIBUTE Aps nearEndRequest (neReq)

Access	Read only

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Description	This attribute indicates the request currently being transmitted to the far end in the SONET/SDH line overhead K1 byte of the protection line. Requests are prioritized so that high priority requests preempt or block those with a lower priority. The possible requests, in order of priority from highest to lowest, are as follows. ***lockoutOfProtection*** — the working line is prevented from switching to the protection line under any circumstances due to an *ProtectionLockout* command being in effect. ***forcedSwitch*** — the line indicated by attribute *nearEndRequestChannel* has a *Switch -force* command in effect against it. Note that a ***signalFail*** on the protection line has higher priority than a ***forcedSwitch***. ***signalFail*** — the line indicated by attribute *nearEndRequestChannel* is experiencing a signal failure (SF). Failures include LOS, LOF, received AIS-L, a signal BER exceeding 10^{-3}, LOP, received AIS-P, LCD, or a locked *Sonet*, *Sdh*, or *Path* component. Note that a ***signalFail*** on the protection line has higher priority than a ***forcedSwitch***. ***signalDegrade*** — the line indicated by attribute *nearEndRequestChannel* is experiencing a signal degradation (SD). ***manualSwitch*** — the line indicated by attribute *nearEndRequestChannel* has a *Switch* command in effect against it. ***waitToRestore*** — the protection line is active, provisioned attribute *revertive* is ***yes***, and the working line has recovered from a Signal Fail or Signal Degrade. After the period defined by attribute *waitToRestorePeriod* the working line will automatically revert to being the receive active line and the request will change to ***noRequest***. ***reverseRequest*** — the line indicated by attribute *nearEndRequestChannel* is active due to a request from the far end. This request is only applicable when the provisioned *mode* is ***bidirectional***. ***doNotRevert*** — the protection line is active, provisioned attribute *revertive* is ***no***, and either: (1) the working line has recovered from a ***signalFail*** or ***signalDegrade***; or (2) a ***forcedSwitch*** or ***manualSwitch*** request has been cleared. The receive active line will not automatically revert to the working line. ***noRequest*** — the working line is active and no other requests are in effect.
Mib	Aps
Values	lockoutOfProtection forcedSwitch signalFail signalDegrade

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manualSwitch
waitToRestore
reverseRequest
doNotRevert
noRequest

Default — No default

ATTRIBUTE Aps nearEndRequestChannel (neReqChan)

Access — Read only

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

Mib — Aps

Values — protection
working

Default — No default

ATTRIBUTE Aps farEndRequest (feReq)

Access — Read only

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

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

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

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

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

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

waitToRestore — the protection line is active, provisioned attribute *revertive* is ***yes***, and the working line has recovered from a Signal Fail or Signal Degrade. After the period defined by attribute *waitToRestorePeriod*

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the working line will automatically revert to being the receive active line and the request will change to ***noRequest***.

exercise — exercise the protocol for a protection switch of the specified channel, unless a request of equal or higher priority is in effect, by issuing an ***exercise*** request for that channel and checking the response on the APS channel.

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

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

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

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

ATTRIBUTE Aps farEndRequestChannel (feReqChan)

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

ATTRIBUTE Aps sdOnLines

Access	Read only
Description	This attribute indicates which lines (if any) are currently experiencing a Signal Degrade (SD).

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Mib	Aps
Set of	protection working
Default	No default

ATTRIBUTE Aps switchovers

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

ATTRIBUTE Aps timeUntilRestore

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

ATTRIBUTE Aps protocolFailureAlarm (pfAlarm)

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

ATTRIBUTE Aps modeMismatchAlarm (mmAlarm)

Access	Read only

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

COMPONENT Aps Test (Test)

Groups	GROUP Aps Test OsiState (State) GROUP Aps Test Setup (Setup) GROUP Aps Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	Aps
Common Verbs	Help List Display

VERB START Aps Test

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

VERB STOP Aps Test

Impact	Service
Description	This command stops a test running on the hardware component.

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GROUP Aps Test OsiState (State)

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

ATTRIBUTE Aps Test adminState (osiAdmin)

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

ATTRIBUTE Aps Test operationalState (osiOper)

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

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Mib	Aps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Aps Test usageState (osiUsage)

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

GROUP Aps Test Setup (Setup)

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

ATTRIBUTE Aps Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Aps
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Aps Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include

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

Mib: Aps

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Aps Test frmSize (size)

Access: Read and write

Description:

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

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Mib	Aps
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Aps Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Aps
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Aps Test customizedPattern (cp)

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

ATTRIBUTE Aps Test dataStartDelay (dsd)

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

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Mib	Aps
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Aps Test displayInterval (di)

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

ATTRIBUTE Aps Test duration

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

GROUP Aps Test Results (Results)

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

ATTRIBUTE Aps Test causeOfTermination

Access	Read only

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Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.
Mib	Aps
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed

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	patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Aps Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	Aps
Values	Long Integer
Default	No default

ATTRIBUTE Aps Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Aps
Values	Long Integer
Default	No default

ATTRIBUTE Aps Test frmTx

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

ATTRIBUTE Aps Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

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Mib	Aps
Values	Long Integer
Default	No default

ATTRIBUTE Aps Test bytesRx

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

ATTRIBUTE Aps Test frmRx

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

ATTRIBUTE Aps Test erroredFrmRx

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

ATTRIBUTE Aps Test bitErrorRate

Access	Read only

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Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Aps
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Aps Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Aps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Aps Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Aps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Aps

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Nortel Multiservice Switch 7400, 15000, 20000

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COMPONENT AtmRouting (ARtg)

Groups	GROUP ARtg Statistics (Stats) GROUP ARtg Provisioned (Prov)
Scope	Device
Description	*AtmRouting* This component contains the provisionable and operational attributes related to ATM routing. The *Dna* subcomponents can be listed to view all the provisioned and registered ATM end system addresses and prefixes stored against any of the *Uni*, *Iisp* or *Pnni* interfaces. The *Pnni* subcomponent can be provisioned to identify that this node participates in a PNNI hierarchy. The *PhysicalPort* subcomponent can be listed to view all the physical ports available for ATM routing.
Mib	AtmRouting
Subcomponents	COMPONENT ARtg SparedServices (SpServ)
Opt. Subcomp.	COMPONENT ARtg Pnni
Dyn. Subcomp.	COMPONENT ARtg DataNetworkAddress (Dna) COMPONENT ARtg PhysicalPort (Port)
Common Verbs	Help List Display Add DELete

GROUP ARtg Statistics (Stats)

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

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ATTRIBUTE ARtg routingAttempts

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

ATTRIBUTE ARtg failedRoutingAttempts

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

GROUP ARtg Provisioned (Prov)

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

ATTRIBUTE ARtg useBestMatchAddrOnCrankback (useBma)

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

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terminatingOnly: specifies that only the DTL terminator uses best match address resolution.
originatingTerminating: specifies that both the DTL originator and the DTL terminator use best match address resolution.

Mib: AtmRouting

Values:
none
originatingOnly (origOnly)
terminatingOnly (termOnly)
originatingTerminating (origTerm)

Default: none

ATTRIBUTE ARtg discardCallsOnOverload (discCallsOnOverId)

Access:
Read: All
Write: All

Description: This attribute specifies whether or not ATM signalling overload control is in effect on this node for each FP.

A value of ***enabled*** causes new incoming calls to be discarded on overloaded egress FPs. Overload is detected when more than 39% of signalling message buffers are in use, or more than 63 SSCOP PDUs have not been acknowledged.

Set the attribute to ***enabled*** when low call setup latency is preferred over calls being discarded.

Mib: AtmRouting

Values:
disabled
enabled

Default: disabled

COMPONENT ARtg DataNetworkAddress (Dna)

Instance: String (1..40, ASCII)

Scope: Application

Description: *ARtg DataNetworkAddress/<ATM address>*
This component represents an ATM NSAP address that has been provisioned or dynamically registered through ILMI.

Mib: AtmRouting

Dyn. Subcomp.: COMPONENT ARtg Dna DestInfo

Common Verbs:
Help
List
Display

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COMPONENT ARtg Dna DestInfo

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

GROUP ARtg Dna DestInfo Operational (Oper)

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

ATTRIBUTE ARtg Dna DestInfo type

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

ATTRIBUTE ARtg Dna DestInfo scope

Access	Read: All Write: Illegal
Description	This attribute indicates the highest level (meaning the lowest numeric value) in the hierarchy where the address will be advertised.

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	A value of -1 indicates that the scope is not applicable because this node has not been configured as a PNNI node.
Mib	AtmRouting
Values	Signed (-1..104)
Default	No default

ATTRIBUTE ARtg Dna DestInfo componentName

Access	Read: All Write: Illegal
Description	This attribute indicates the component name of the interface through which the address can be reached.
Mib	AtmRouting
Values	The name of the component
Default	No default

ATTRIBUTE ARtg Dna DestInfo reachability (reach)

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

COMPONENT ARtg Pnni

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

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The *Pnni* component must have at least one and no more than 10 *ConfiguredNode* subcomponents.

Mib	AtmRouting
Subcomponents	COMPONENT ARtg Pnni LoadBalancing (Lb)
Opt. Subcomp.	COMPONENT ARtg Pnni ConfiguredNode (CfgNode) COMPONENT ARtg Pnni Cache COMPONENT ARtg Pnni NodeName (Node) COMPONENT ARtg Pnni MdtlPath (Mdtl) COMPONENT ARtg Pnni LoadReBalancingGroup (Lrbg) COMPONENT ARtg Pnni Reroute
Dyn. Subcomp.	COMPONENT ARtg Pnni RouteFinder (Rf) COMPONENT ARtg Pnni Topology (Top) COMPONENT ARtg Pnni Port
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni Provisioned (Prov)

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

ATTRIBUTE ARtg Pnni nodeAddressPrefix

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM address prefix of this node for all levels of the hierarchy. If this attribute is set to the null string, then a default node address prefix is computed as follows: the value provisioned for the *ModuleData* component's *nodePrefix* attribute, followed by a unique MAC address (6 octets). If a value is assigned, it must be exactly 38 characters long. All characters must be hexadecimal with the following restrictions: - the first two characters must be a number between 10 and FE, inclusive. - if the first two characters are'45', the 18th character must be an 'F' or an 'f'.

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Mib	AtmRouting
Values	String (0..19, Hex)
Default	No default

ATTRIBUTE ARtg Pnni defaultScope

Access	Read: All Write: All
Description	This attribute specifies the default PNNI scope for ATM addresses associated with this node. The PNNI scope determines the level to which the address is advertised within the PNNI routing domain. A provisioned *Addr* component may override the default scope in a *PnniInfo* subcomponent. The defaultScope can't be used for default address advertizement unless the prefix of the default address is different from that of the node address. A value of 0 means that all addresses which do not have provisioned scopes is advertised globally within the PNNI routing domain. The value specified must be numerically smaller than or equal to that of the lowest level at which this node is configured in the PNNI hierarchy.
Mib	AtmRouting
Values	Decimal (0..104)
Default	0

ATTRIBUTE ARtg Pnni domain

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

ATTRIBUTE ARtg Pnni maxAlternateRoutesOnCrankback (maxAltRtsOnCrankbck)

Access	Read: All Write: All
Description	This attribute specifies the number of rerouting attempts before a call requiring crank-back is rejected.
Mib	AtmRouting

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Values	Decimal (0..20)
Default	1

ATTRIBUTE ARtg Pnni horizontalLinkInactivityTime

Access	Read: All Write: All
Description	This attribute specifies the length of time a node continues to advertise a horizontal (logical) link for which it has not received an LGN Horizontal Link Information Group. Increasing this timer allows the link to increase tolerance of Information Group packet loses, but also increases the duration of advertising a stale link. Decreasing the timer has the reverse effect.
Mib	AtmRouting
Values	Decimal (30..3600)
Units	seconds
Default	120

ATTRIBUTE ARtg Pnni pathDiversity

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

ATTRIBUTE ARtg Pnni outgoingNccileFormat (nccile)

Access	Read: All Write: All
Description	This attribute specifies the Network Call Correlation Identifier (NCCI) IE format in outgoing SETUP messages for all PNNI interfaces on this node. ***backwardsCompatible*** selects both the Nortel Networks proprietary 0xF0 NCCI IE format and the ATM Forum standard 0xEF NCCI IE format. The Nortel Networks Multiservice Switch is able to differentiate the 0xF0 MDCR IE from 0xF0 NCCI IE. ***atmForum*** selects the ATM Forum0xEF NCCI IE format.

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backwardsCompatible should be selected if any node within the network is not running the software release containing this *outgoingNccileFormat* attribute.

atmForum should only be selected if all nodes within the network have been upgraded to the software release containing this *outgoingNccileFormat* attribute.

Mib: AtmRouting

Values: backwardsCompatible
atmForum

Default: No default

ATTRIBUTE ARtg Pnni optimizationMetric (optMetric)

Access: Read: All
Write: All

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

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

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

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

Mib: AtmRouting

Vector of: cdv
maxCtd
aw

Index: cbr
rtVbr
nrtVbr
ubr

Default: (aw, aw, aw, aw)

ATTRIBUTE ARtg Pnni uniToPnniScopeMap

Access: Read: All
Write: All

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

GROUP ARtg Pnni PglElectionParms (PglParms)

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

ATTRIBUTE ARtg Pnni pglInitTime

Access	Read: All Write: All
Description	This attribute specifies how long this node delays advertising its choice of preferred peer group leader after having reached the full peer state with at least one neighbor in the peer group. Increasing this timer allows the node to be more informed before choosing a leader, thus fewer rounds of elections are required, but more time is required for each round of election.
Mib	AtmRouting
Values	Decimal (0..65535)
Units	seconds
Default	15

ATTRIBUTE ARtg Pnni overrideDelay

Access	Read: All Write: All
Description	This attribute specifies how long a node waits for itself to be declared the preferred peer group leader by unanimous agreement among its peers. On

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	timeout, if the node receives 2/3 majority, it declares itself as leader; otherwise, election enters the ***HungElection*** state.
Mib	AtmRouting
Values	Decimal (1..65535)
Units	seconds
Default	30

ATTRIBUTE ARtg Pnni reElectionInterval

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

GROUP ARtg Pnni HelloParms (HlParms)

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

ATTRIBUTE ARtg Pnni helloHoldDown (hhd)

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

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ATTRIBUTE ARtg Pnni helloInterval (hli)

Access	Read: All Write: All
Description	This attribute specifies the default duration of the Hello Timer for routing control channels on this node. Every *helloInterval* seconds, this node sends out a Hello packet to the neighbor node, subject to the *helloHoldDown* timer having expired at least once since the last Hello packet was sent. A provisioning check is made to ensure that this value cannot be less than *helloHoldDown*. The value can be overridden on a per interface or per VPT basis by changing the *Atmif Pnni Rcc* or *Atmif Vpt Pnni Rcc helloInterval* attribute.
Mib	AtmRouting
Values	Decimal (1..65535)
Units	seconds
Default	15

ATTRIBUTE ARtg Pnni helloInactivityFactor (hif)

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

GROUP ARtg Pnni PTSETimerParms (PtseParms)

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

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ATTRIBUTE ARtg Pnni ptseHoldDown (ptHldDn)

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

ATTRIBUTE ARtg Pnni ptseRefreshInterval (ptRefInt)

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

ATTRIBUTE ARtg Pnni ptseLifetimeFactor (ptLifeFac)

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

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Default	200

ATTRIBUTE ARtg Pnni requestRxmtInterval (reqRxInt)

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

ATTRIBUTE ARtg Pnni peerDelayedAckInterval (peerDAckInt)

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

GROUP ARtg Pnni ChangeThresholds (ThreshParms)

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

ATTRIBUTE ARtg Pnni avcrMt

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

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Default	3

ATTRIBUTE ARtg Pnni avcrPm

Access	Read: All Write: All
Description	This attribute multiplied by the current Available Cell Rate specifies the threshold used in the algorithms that determine significant change for AvCR parameters. If the resulting threshold is lower than the minimum threshold, the minimum threshold is used. Increasing the value of this attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability.
Mib	AtmRouting
Values	Decimal (1..99)
Units	%
Default	50

ATTRIBUTE ARtg Pnni cdvPm

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

ATTRIBUTE ARtg Pnni ctdPm

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

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Units	%
Default	50

GROUP ARtg Pnni Operational (Oper)

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

ATTRIBUTE ARtg Pnni topologyMemoryExhaustion (topMemExhaustion)

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

ATTRIBUTE ARtg Pnni ptsesInDatabase

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

GROUP ARtg Pnni Statistics (Stats)

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

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ATTRIBUTE ARtg Pnni successfulRoutingAttempts

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

ATTRIBUTE ARtg Pnni failedRoutingAttempts

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

ATTRIBUTE ARtg Pnni alternateRoutingAttempts

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

GROUP ARtg Pnni SvccBasedRccParms (SvccRcc)

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

ATTRIBUTE ARtg Pnni svccInitTime (iTime)

Access	Read: All Write: All

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

ATTRIBUTE ARtg Pnni svccRetryTime (rTime)

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

ATTRIBUTE ARtg Pnni svccCallingIntegrityTime (clgIntegTime)

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

ATTRIBUTE ARtg Pnni svccCalledIntegrityTime (cldIntegTime)

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

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Mib	AtmRouting
Values	Decimal (25..3615)
Units	seconds
Default	50

ATTRIBUTE ARtg Pnni svccEstablishIntegrityTime (estIntegTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node waits for an SVCC SETUP message from a neighbor, from which a SVCC SETUP message is expected, once the node knows of the existence of that neighbor. An alarm is raised when the *svccEstablishIntegrityTimer* expires.
Mib	AtmRouting
Values	Decimal (15..3600)
Units	seconds
Default	60

COMPONENT ARtg Pnni RouteFinder (Rf)

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

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VERB Run **ARtg Pnni Rf**

Impact	Passive
Description	Run ARtg Pnni RouteFinder This verb computes a list of routes according to the specified routing criteria and displays the results. The results are in the following format: Route 1: node id = <node ID > node name@level = <EM/node name@level> port id = <port ID> interface name = <atmif/number> node id = <node ID > node name@level = <EM/node name@level> port id = <port ID> interface name = <atmif/number> ... node id = <node ID> node name@level = <EM/node name@level> Route 2: node id = <node ID > node name@level = <EM/node name@level> port id = <port ID> interface name = <atmif/number> node id = <node ID > node name@level = <EM/node name@level> port id = <port ID> interface name = <atmif/number> ... node id = <node ID> node name@level = <EM/node name@level> ... ... Route n: node id = <node ID > node name@level = <EM/node name@level> *port id = <port ID>* *interface name = <atmif/number>* *...*

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node id = <node ID>
node name@level = <EM/node name@level>

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

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

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

GROUP ARtg Pnni Rf Criteria

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

ATTRIBUTE ARtg Pnni Rf destinationAddress (destAddr)

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

ATTRIBUTE ARtg Pnni Rf maxRoutes

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

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Default 1

ATTRIBUTE ARtg Pnni Rf txTrafficDescType (txTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management that is applied to the transmit direction as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.

Mib
AtmRouting

Values
1
2
3
4
5
6
7
8
9

Default 1

ATTRIBUTE ARtg Pnni Rf rxTrafficDescType (rxTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management that is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.

When ***sameAsTx*** is selected, the *rxTrafficDescType* as well as the *rxTrafficDescParm* are taken from the transmit values.

Mib
AtmRouting

Values
1
2
3
4
5
6
7
8
9
sameAsTx

Default sameAsTx

ATTRIBUTE ARtg Pnni Rf atmServiceCategory (service)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. If this attribute is set to other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduced value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate that varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. VBR real time service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications that have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS. For those cells that are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, the application expects a bound on the mean cell transfer delay. VBR non-real time service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to either the cell loss ratio experienced by a UBR connection, or the cell transfer delay experienced by cells on the connection.
Mib	AtmRouting

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

ATTRIBUTE ARtg Pnni Rf fwdQosClass (fwdQos)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmRouting
Values	0 1 2 3 4
Default	0

ATTRIBUTE ARtg Pnni Rf bwdQosClass (bwdQos)

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

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

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

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

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

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

Mib: AtmRouting

Values:
0
1
2
3
4
sameAsFwd

Default: sameAsFwd

ATTRIBUTE ARtg Pnni Rf **bearerClassBbc (bcBbc)**

Access:
Read: All
Write: All

Criticality: Component

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

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

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport

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

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

Mib: AtmRouting

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE ARtg Pnni Rf transferCapabilityBbc (tcBbc)

Access:
Read: All
Write: All

Criticality: Component

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

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

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

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

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

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

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

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required.

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

Mib: AtmRouting

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE ARtg Pnni Rf clippingBbc (cBbc)

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered but before an associated connection is switched through.

Mib: AtmRouting

Values:
no
yes

Default: no

ATTRIBUTE ARtg Pnni Rf bestEffort

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

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The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

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

Mib	AtmRouting
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE ARtg Pnni Rf optimizationMetric (optMetric)

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

ATTRIBUTE ARtg Pnni Rf routingLevelScope

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

ATTRIBUTE ARtg Pnni Rf lbMinVariance (minVar)

Access	Read: All Write: All

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Description	This attribute specifies the minimum variance value to be used for the *RouteFinder*'s optimization metric and service category. A larger variance allows more usable paths to be considered for load balancing. A minimum variance of zero means that only the *lbSlopeVariance* attribute is used in determining the acceptable variance. The maximum range boundaries for each of the optimization metrics are: **- *cdv***: 2147483647 (for cbr and rtVbr only). **- *maxCtd***: 2147483647 (for cbr and rtVbr only). **- *aw***: 4294967295. The acceptable variance is calculated based on the following formula: *acceptableVariance* = *lbMinVariance* + *optM* * *lbSlopeVariance*/**100** where *optM* represents the optimization metric value of the best path.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE ARtg Pnni Rf lbSlopeVariance (slopeVar)

Access	Read: All Write: All
Description	This attribute specifies the slope of the acceptable variance for the *RouteFinder*'s optimization metric and service category. A *lbSlopeVariance* of zero means that the acceptable variance is given only by the *lbMinVariance* attribute. If both *lbMinVariance* and *lbSlopeVariance* attributes are zero, means that only the best paths of equal value to the *optimizationMetric* will be considered for load balancing. The acceptable variance is calculated based on the following formula: *acceptableVariance* = *lbMinVariance* + *optM* * *lbSlopeVariance*/100 where *optM* represents the optimization metric value of the best path.
Mib	AtmRouting
Values	Decimal (0..1900)
Units	%
Default	0

ATTRIBUTE ARtg Pnni Rf lbMethod (method)

Access	Read: All Write: All

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Description	This attribute specifies the load balancing method for the selected service category of the call. ***maxAvCr***. PNNI routing chooses the path that has the maximum available cell rate as the routing path. ***random***. The routing path is chosen randomly from all the acceptable paths. ***avCrProb***. The routing path is chosen with a probability in proportion to its available cell rate. This method will result in the more frequent selection of a route having a higher available cell rate over that with a lower available cell rate. ***optMetricProb***. The routing path is chosen with a probability inversely proportional to the optimization metric. This method will result in the more frequent selection of a route having the lowest value of the optimization metric over that with a higher optimization metric. ***avCrOptMetricProb***. The routing path is chosen with a probability that is based on both the proportional value of the available cell rate and the inverse proportional value of the optimization metric. ***none***. The routing path is chosen such that only the best path(s) will be displayed. No load balancing is applied. When this attribute is set to ***maxAvCr***, ***random***, ***avCrProb***, ***optMetricProb***, or ***avCrOptMetricProb***, a single PNNI route will be displayed in the result of the *RouteFinder* because only one path is selected during the PNNI routing process for these methods. When this attribute is set to ***none***, the number of PNNI routes that will be displayed is limited by the smallest of, the *maxRoutes* attribute, the number of best paths found, or the *Artg Pnni Lb/<srvCat> maxPaths* attribute.
Mib	AtmRouting
Values	maxAvCr random avCrProb optMetricProb avCrOptMetricProb none
Default	random

ATTRIBUTE ARtg Pnni Rf useRouteCaching (useRc)

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

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

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

Setting *useRouteCaching* to ***yes*** and applying load balancing on this iteration of the *RouteFinder*, uses the regular *LoadBalancing minVariance* and *slopeVariance* values since all routes stored in the cache are within these provisioned multi_path variance parameters.

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

Mib — AtmRouting

Values — no
yes

Default — no

ATTRIBUTE ARtg Pnni Rf rxTrafficDescParm (rxTdp)

Access — Read: All
Write: All

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

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

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

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

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic

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with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

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

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

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

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

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

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

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or

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I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

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

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

ATTRIBUTE ARtg Pnni Rf txTrafficDescParm (txTdp)

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP

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equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

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

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

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

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

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

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

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For *txTrafficDescType* ***6***, ***7*** and ***8***, the transmit traffic will be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic will be shaped at the next rate above the PCR.

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

ATTRIBUTE ARtg Pnni Rf fwdQosParameters (fqp)

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

ATTRIBUTE ARtg Pnni Rf bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR, and rt-VBR).

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It is signaled through the extended QoS information element.

The ***ctd*** specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR, and rt-VBR). It is signaled through the end-to-end transit delay information element.

The ***clr*** specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

Mib	AtmRouting
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

COMPONENT ARtg Pnni ConfiguredNode (CfgNode)

Instance	Decimal (0..104)
Groups	GROUP ARtg Pnni CfgNode Provisioned (Prov) GROUP ARtg Pnni CfgNode Operational (Oper) GROUP ARtg Pnni CfgNode HelloParms (HlParms) GROUP ARtg Pnni CfgNode PTSETimerParms (PtseParms) GROUP ARtg Pnni CfgNode SvccBasedRccParms (SvccRcc) GROUP ARtg Pnni CfgNode ChangeThresholds (ThreshParms)
Scope	Device
Description	*ARtg Pnni ConfiguredNode/<level>* This component specifies the participation of this node at the level in the PNNI hierarchy indicated by the *level*.
Mib	AtmRouting
Opt. Subcomp.	COMPONENT ARtg Pnni CfgNode SummaryAddress (SAddr) COMPONENT ARtg Pnni CfgNode PeerGroupLeader (Pgl)
Dyn. Subcomp.	COMPONENT ARtg Pnni CfgNode Neighbor (Nbr) COMPONENT ARtg Pnni CfgNode DefSummaryAddress (DefSAddr) COMPONENT ARtg Pnni CfgNode UpLink COMPONENT ARtg Pnni CfgNode RoutingControlChannel (Rcc)
Common Verbs	Help List Display Add DELete

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GROUP ARtg Pnni CfgNode Provisioned (Prov)

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

ATTRIBUTE ARtg Pnni CfgNode nodeId

Access	Read: All Write: All
Criticality	Component
Description	This attribute allows explicit specification of a node ID for this configured node. If a value is assigned in this attribute, it overrides any system computed node ID for this configured node. If this attribute is empty, then the node ID is computed by the system in *opNodeId*.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode peerGroupId (pgId)

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

ATTRIBUTE ARtg Pnni CfgNode restrictTransit

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies whether the *configurednode* should restrict tandeming of SVCs.

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If this attribute is set to ***true***, then other nodes in the PNNI hierarchy avoids traversing this node during route computation.

Mib	AtmRouting
Values	false true
Default	false

ATTRIBUTE ARtg Pnni CfgNode **horizontalLinkInactivityTime**

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

GROUP ARtg Pnni CfgNode **Operational (Oper)**

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

ATTRIBUTE ARtg Pnni CfgNode **nodeAddress**

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

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Values	String (20, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode opNodeId

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

ATTRIBUTE ARtg Pnni CfgNode opPeerGroupId (pgIdOp)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the peer group id of the node at this level. The value is determined by the provisioned *peerGroupId* attribute. If the *peerGroupId* is a null string then the peer group id is computed as follows: The peer group id for a lowest level node is computed to be the node's level (one octet), followed by the first <level> bits of the *nodeAddress*, followed by zero or more padding 0 bits. The peer group id for an LGN is computed to be the LGN's level (one octet), followed by the first <level> bits of the id of the peer group which this LGN represents, followed by zero or more padding 0 bits.
Mib	AtmRouting
Values	String (14, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode numNeighbors

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

ATTRIBUTE ARtg Pnni CfgNode pglElectionState

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the peer group leader election process. Possible values for this attribute are: ***notApplicable***: the node is inactive (***lgnState*** = inactive) ***starting***: the initial state of the state machine. ***awaiting***: the node has started the Hello Finite State Machine on at least one link, and no peer has been found yet. ***awaitingFull***: no database synchronization process has been completed yet but at least one neighboring peer has been found. ***initialDelay***: Database synchronization has been completed with at least one neighboring peer. The node must wait *pglInitTime* seconds before it can select and advertise its preferred Peer Group Leader (PGL). ***calculating***: the node is in the process of calculating what its new choice for preferred PGL. ***operNotPgl***: a non PGL node is in the process of determining which node has the highest priority to be PGL by examining PTSEs sent by other nodes. ***operPgl***: a PGL node is in the process of determining whether another node has a higher priority than itself by examining PTSEs sent by other nodes. ***awaitUnanimity***: the node has chosen itself as PGL. If the node has been elected unanimously, it generates a Unanimity event. It waits for unanimity or expiration of the *overrideDelay* timer before declaring itself peer group leader. ***hungElection***: the node has chosen itself as PGL with less than 2/3 of the other nodes advertising it as their preferred PGL. In this case either this node should change its choice of preferred PGL, or the other nodes are

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going to accept it as PGL.

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

Mib: AtmRouting

Values:
notApplicable
starting
awaiting
awaitingFull
initialDelay
calculating
operNotPgl
operPgl
awaitUnanimity
hungElection
awaitReElection

Default: No default

ATTRIBUTE ARtg Pnni CfgNode lgnState

Access:
Read: All
Write: Illegal

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

Mib: AtmRouting

Values:
inactive
active
notApplicable

Default: No default

ATTRIBUTE ARtg Pnni CfgNode preferredPglNodeId

Access:
Read: All
Write: Illegal

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

Mib: AtmRouting

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

ATTRIBUTE ARtg Pnni CfgNode preferredPglLeadershipPriority

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

ATTRIBUTE ARtg Pnni CfgNode opLeadershipPriority

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

ATTRIBUTE ARtg Pnni CfgNode preferredPglNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the value of the *nodeName* attribute for the node that this node believes should be the peer group leader. This attribute corresponds to the Node ID value that the node is currently advertising in the 'Preferred Peer Group Leader Node Id' field of its nodal information group within the given peer group. If this attribute is empty, it indicates the preferred PGL node name is unknown.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

GROUP ARtg Pnni CfgNode HelloParms (HlParms)

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

ATTRIBUTE ARtg Pnni CfgNode helloHoldDown (hhd)

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

ATTRIBUTE ARtg Pnni CfgNode helloInterval (hli)

Access	Read: All Write: All
Description	This attribute specifies the default duration of the Hello Timer for routing control channels on this node. Every *helloInterval* seconds, this node sends out a Hello packet to the neighbor node, subject to the *helloHoldDown* timer having expired at least once since the last Hello packet was sent. This value cannot be less than *helloHoldDown*. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni helloInterval*.
Mib	AtmRouting
Values	Decimal (1..65535) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode helloInactivityFactor (hif)

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

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Values	Decimal (1..65535) sameAsPnni
Default	sameAsPnni

GROUP ARtg Pnni CfgNode PTSETimerParms (PtseParms)

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

ATTRIBUTE ARtg Pnni CfgNode ptseHoldDown (ptHldDn)

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

ATTRIBUTE ARtg Pnni CfgNode ptseRefreshInterval (ptRefInt)

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

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Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode ptseLifetimeFactor (ptLifeFac)

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

ATTRIBUTE ARtg Pnni CfgNode requestRxmtInterval (reqRxInt)

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

ATTRIBUTE ARtg Pnni CfgNode peerDelayedAckInterval (peerDAckInt)

Access	Read: All Write: All
Description	This attribute specifies the minimum length of time between transmissions of delayed PTSE acknowledgment packets. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni peerDelayedAckInterval*.
Mib	AtmRouting
Values	Decimal (0.1..65535.0) sameAsPnni

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Units	seconds
Default	sameAsPnni

GROUP ARtg Pnni CfgNode SvccBasedRccParms (SvccRcc)

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

ATTRIBUTE ARtg Pnni CfgNode svccInitTime (iTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node delays initiating establishment of an SVCC to a neighbor after determining that such an SVCC should be established. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni svccInitTime*.
Mib	AtmRouting
Values	Decimal (0..120) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode svccRetryTime (rTime)

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

ATTRIBUTE ARtg Pnni CfgNode svccCallingIntegrityTime (clgIntegTime)

Access	Read: All Write: All

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

ATTRIBUTE ARtg Pnni CfgNode svccCalledIntegrityTime (cldIntegTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node waits for an SVCC to become fully established before giving up and tearing it down. This condition occurs when the node has decided to accept the SVCC setup as the called party. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni svccCalledIntegrityTime*.
Mib	AtmRouting
Values	Decimal (25..3615) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode svccEstablishIntegrityTime (estIntegTime)

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

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GROUP ARtg Pnni CfgNode **ChangeThresholds (ThreshParms)**

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

ATTRIBUTE ARtg Pnni CfgNode **avcrMt**

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

ATTRIBUTE ARtg Pnni CfgNode **avcrPm**

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

ATTRIBUTE ARtg Pnni CfgNode **cdvPm**

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

ATTRIBUTE ARtg Pnni CfgNode **ctdPm**

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

COMPONENT ARtg Pnni CfgNode **SummaryAddress (SAddr)**

Instance	address [String (19, Hex)] prefixLength [Decimal (1..152)] reachability [internal exterior]
Groups	GROUP ARtg Pnni CfgNode SAddr Provisioned (Prov) GROUP ARtg Pnni CfgNode SAddr Operational (Oper)
Scope	Device
Description	*ARtg Pnni CfgNode/<level> SummaryAddress/<address>, <prefixLength>, <reachability>* A summary address is an abbreviation of a set of addresses, represented by an address prefix that all of the summarized addresses have in

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common.
A suppressed summary address is used to suppress the advertisement of addresses which match this prefix, regardless of scope.

The *prefixLength* specifies the number of significant bits of the address. *reachability* specifies whether the address is to summarize internal or exterior addresses.

An ***internal*** address is an address of a destination that is directly attached to the logical node. An ***exterior*** address is an address of a destination that is located outside of the PNNI routing domain but can be reached through a port attached to the logical node.

Mib: AtmRouting

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

GROUP ARtg Pnni CfgNode SAddr Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes of a *SummaryAddress* component.

A summary address is an abbreviation of a set of addresses, represented by an address prefix that all of the summarized addresses have in common.
A suppressed summary address is used to suppress the advertisement of addresses which match this prefix, regardless of scope.

Mib: AtmRouting

ATTRIBUTE ARtg Pnni CfgNode SAddr suppress

Access: Read: All
Write: All

Description: This attribute specifies whether or not the address should be suppressed. If this attribute is set to ***true***, then all addresses matching that prefix will not be advertised above this level.

Mib: AtmRouting

Values: false
true

Default: false

GROUP ARtg Pnni CfgNode SAddr Operational (Oper)

Properties: Operational

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

ATTRIBUTE ARtg Pnni CfgNode SAddr state

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

ATTRIBUTE ARtg Pnni CfgNode SAddr scope

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

COMPONENT ARtg Pnni CfgNode Neighbor (Nbr)

Instance	String (22, Hex)
Groups	GROUP ARtg Pnni CfgNode Nbr Operational (Oper) GROUP ARtg Pnni CfgNode Nbr Statistics (Stats)
Scope	Device
Description	*ARtg Pnni CfgNode/n Neighbor/<node id>* This component represents a neighbor node at this level. If this *cfgnode* is not an LGN and the *Neighbor* node is not an LGN (in other words, both the *cfgnode* and its *Neighbor* are physical nodes), the *rccList* attribute indicates the component names of all Routing Control

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Channels (RCC) to that neighboring node. Under this condition, there is no *RCC* subcomponent under this *Neighbor*.

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

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

GROUP ARtg Pnni CfgNode Nbr Operational (Oper)

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

ATTRIBUTE ARtg Pnni CfgNode Nbr peerState

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the routing database exchange with the peer node. ***npDown***: There are no active links (that is, in the ***twoWayInside*** Hello state) to the neighboring peer. ***negotiating***: The first step in creating an adjacency between the two neighboring peers; this step determines which node is the master, and what the initial DS sequence number will be. ***exchanging***: The node describes its topology database by sending Database Summary packets to the neighboring peer. ***loading***: A full sequence of Database Summary packets has been exchanged with the neighboring peer. The required PTSEs are requested and at least one has not yet been received. ***full***: All PTSEs known to be available have been received from the neighboring peer. At this point the all ports leading to the neighbor node are flooded in PTSEs within the peer group.
Mib	AtmRouting

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Values	npDown negotiating exchanging loading full
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr neighborName

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

ATTRIBUTE ARtg Pnni CfgNode Nbr rccList

Access	Read: All Write: Illegal
Description	If this *cfgnode* and the *Neighbor* are not LGN at this level, the value is the component names of all Routing Control Channels to the neighbor PNNI node. Otherwise (this *cfgnode* and/or the *Neighbor* is/are logical group nodes), this attribute indicates the component name of the *Rcc* subcomponent of this *Neighbor*.
Mib	AtmRouting
List of	The name of the component
Default	No default

GROUP ARtg Pnni CfgNode Nbr Statistics (Stats)

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

ATTRIBUTE ARtg Pnni CfgNode Nbr ptspRx

Access	Read: All Write: Illegal
Description	This attribute counts the PNNI Topology State Packets received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr **ptspTx**

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

ATTRIBUTE ARtg Pnni CfgNode Nbr **ptseRx**

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

ATTRIBUTE ARtg Pnni CfgNode Nbr **ptseTx**

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

ATTRIBUTE ARtg Pnni CfgNode Nbr **ptseReqRx**

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

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ATTRIBUTE ARtg Pnni CfgNode Nbr ptseReqTx

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

ATTRIBUTE ARtg Pnni CfgNode Nbr ptseAcksRx

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

ATTRIBUTE ARtg Pnni CfgNode Nbr ptseAcksTx

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

ATTRIBUTE ARtg Pnni CfgNode Nbr dbSummariesRx

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

ATTRIBUTE ARtg Pnni CfgNode Nbr dbSummariesTx

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

ATTRIBUTE ARtg Pnni CfgNode Nbr badPtspRx

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

ATTRIBUTE ARtg Pnni CfgNode Nbr badPtseRx

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

ATTRIBUTE ARtg Pnni CfgNode Nbr badPtseReqRx

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

ATTRIBUTE ARtg Pnni CfgNode Nbr badPtseAckRx

Access	Read: All Write: Illegal

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

ATTRIBUTE ARtg Pnni CfgNode Nbr **badDbSummariesRx**

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

COMPONENT ARtg Pnni CfgNode Nbr **HorizontalLink (HLnk)**

Instance	Decimal (0..4294967295)
Groups	GROUP ARtg Pnni CfgNode Nbr HLnk Operational (Oper)
Scope	Device
Description	ARtg Pnni CfgNode/n Nbr/<node id> Rcc HorizontalLink/<port Id> The *HorizontalLink* component indicates a logical connection between the *CfgNode* and its *Nbr.* Links are aggregated together to form one Horizontal Link if they have the same aggregation token. This component indicates the operational attributes for the *HorizontalLink* component. The index is the unique port Id associated with the link.
Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni CfgNode Nbr HLnk InducingUpLink
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode Nbr HLnk **Operational (Oper)**

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

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Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk aggregationToken

Access	Read: All Write: Illegal
Description	This attribute indicates the derived aggregation token used for this horizontal link. The aggregation tokens at both ends are use to form the *AggregationToken* for the link. The aggregation token controls how links are aggregated together. Except for the lowest level nodes, links between two logical nodes are aggregated together if they have the same aggregation token. Link aggregation is not done at the lowest level node, except in the degenerate node situation, where the lowest level node is a neighbor to an LGN.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk state

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the horizontal link Hello protocol exchange over this link. The following are the possible values for this attribute: ***down***: No uplink PTSEs have been received including an uplink to the neighboring peer LGN with the same aggregation token value as that indicated in the LGN horizontal link Hello data structure. ***attempt***: At least one uplink PTSE has been received including an uplink to the neighboring peer LGN with the same aggregation token value as that indicated in the LGN horizontal link Hello data structure. ***oneWay***: Hello packets have been recently received from the neighbor. The LGN Horizontal Link Extension IG contains an entry for this horizontal link with the remote port ID set to zero. ***twoWay***: Hello packets have been recently received from the neighbor. The LGN Horizontal Link Extension IG contains an entry for this horizontal link with the correct remote port ID. When this state is reached, the port IDs at both ends of the horizontal link are determined. The horizontal link must be in this state before the LGN will advertise it.
Mib	AtmRouting
Values	notApplicable down attempt

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	oneWay twoWay
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk **remotePortId**

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

COMPONENT ARtg Pnni CfgNode Nbr HLnk **InducingUpLink**

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

GROUP ARtg Pnni CfgNode Nbr HLnk InducingUpLink **Operational (Oper)**

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

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk InducingUpLink **inducingNodeName**

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Access	Read: All Write: Illegal
Description	This attribute indicates the node name and the hierarchy level for the *InducingUpLink* component. A typical value for this attribute has the following form: ***OBELIX@96*** Here, OBELIX is the node name and 96 is the hierarchy for the up node. The @ symbol is used to separate the node name from the hierarchy level in the display. This attribute is left blank if the uplink is being induced by a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk InducingUpLink **inducingInterfaceName**

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

COMPONENT ARtg Pnni CfgNode **DefSummaryAddress (DefSAddr)**

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

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default summary address is the 13-octet prefix of the node's address.
A node at level 104 has no default summary address.

Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode DefSAddr DefaultAddress (DefAddr)

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

ATTRIBUTE ARtg Pnni CfgNode DefSAddr address

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

GROUP ARtg Pnni CfgNode DefSAddr Operational (Oper)

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

ATTRIBUTE ARtg Pnni CfgNode DefSAddr state

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

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Values	advertising suppressing inactive
Default	No default

ATTRIBUTE ARtg Pnni CfgNode DefSAddr scope

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

COMPONENT ARtg Pnni CfgNode UpLink

Instance	Decimal (0..4294967295)
Groups	GROUP ARtg Pnni CfgNode UpLink Operational (Oper)
Scope	Device
Description	*ARtg Pnni CfgNode/<n> UpLink/<n>* This component describes a logical uplink associated with the node. The index of this component is the port id of the uplink.
Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni CfgNode UpLink InducingUpLink
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode UpLink Operational (Oper)

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

ATTRIBUTE ARtg Pnni CfgNode UpLink aggregationToken

Access	Read: All Write: Illegal
Description	This attribute indicates the derived aggregation token value for this link. The aggregation token value can be traced back to the aggregation token

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given to the physical ATM interface in *AtmIf Pnni Rcc* or *AtmIf Vpt Pnni Rcc.*

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

ATTRIBUTE ARtg Pnni CfgNode UpLink upnodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the upnode at the far end of the uplink.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode UpLink upnodeAddress

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

ATTRIBUTE ARtg Pnni CfgNode UpLink upnodeName

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

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COMPONENT ARtg Pnni CfgNode UpLink InducingUpLink

Instance	nodeId [String (22, Hex)] portId [Decimal (0..4294967295)]
Groups	GROUP ARtg Pnni CfgNode UpLink InducingUpLink Operational (Oper)
Scope	Device
Description	*ARtg Pnni CfgNode/n Nbr/<node id> Rcc HLnk/<port id> InducingUpLink/ <node Id>, <port Id>* *ARtg Pnni CfgNode/n Nbr/<node id> ULnk/<port id> InducingUpLink/ <node Id>, <port Id>* This component represents the underlying link that induces this uplink or horizontal link. The index is the (*node Id*, *port Id*) tuple that uniquely identifies the port. The *node Id* is the Id of one of the *cfgnodes*, and the *port Id* is the Id that represents an *Uplink* from that *cfgnode*.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode UpLink InducingUpLink Operational (Oper)

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

ATTRIBUTE ARtg Pnni CfgNode UpLink InducingUpLink inducingNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name and the hierarchy level for the *InducingUpLink* component. A typical value for this attribute has the following form: ***OBELIX@96*** Here, OBELIX is the node name and 96 is the hierarchy for the up node. The @ symbol is used to separate the node name from the hierarchy level in the display. This attribute is left blank if the uplink is being induced by a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting

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

ATTRIBUTE ARtg Pnni CfgNode UpLink InducingUpLink **inducingInterfaceName**

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

COMPONENT ARtg Pnni CfgNode **PeerGroupLeader (Pgl)**

Groups	GROUP ARtg Pnni CfgNode Pgl Provisioned (Prov)
Scope	Device
Description	*ARtg Pnni CfgNode/<level> PeerGroupLeader* This component represents the participation of this node as a candidate for Peer Group Leader in the Peer Group Election. If this component is not provisioned, the *cfgNode* cannot be elected as a Peer Group Leader.
Mib	AtmRouting
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni CfgNode Pgl **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisional attributes of a candidate for Peer Group Leader.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Pgl **leadershipPriority (lPrio)**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the leadership priority to be advertised by this node during the election process. Currently, this attribute must be changed manually after provisioning the *PGL* component. Note: If a node is the Peer Group Leader and its *leadershipPriority* is modified such that another node has a higher *leadershipPriority*, then a re-election is held immediately on activation.
Mib	AtmRouting
Values	Decimal (1..205)
Default	1

ATTRIBUTE ARtg Pnni CfgNode Pgl initTime

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

ATTRIBUTE ARtg Pnni CfgNode Pgl overrideDelay

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

ATTRIBUTE ARtg Pnni CfgNode Pgl reElectionInterval

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Access	Read: All Write: All
Description	This attribute specifies how long this node waits after losing connectivity to the current peer group leader before re-starting the process of electing a new peer group leader. If the value is ***sameAsPnni***, then this value is taken from *ARtg Pnni reElectionInterval*.
Mib	AtmRouting
Values	Decimal (1..65534) sameAsPnni
Units	seconds
Default	sameAsPnni

COMPONENT ARtg Pnni CfgNode RoutingControlChannel (Rcc)

Instance	String (20, Hex)
Groups	GROUP ARtg Pnni CfgNode Rcc OsiState (State) GROUP ARtg Pnni CfgNode Rcc Operational (Oper) GROUP ARtg Pnni CfgNode Rcc Statistics (Stats)
Scope	Device
Description	*ARtg Pnni CfgNode/n Nbr/<node id> RoutingControlChannel* This component represents the operational attributes for the *RoutingControlChannel* component to a neighboring node. If this *cfgnode* is not an LGN and the *Neighbor* node is not an LGN (in other words, both the *cfgnode* and its *Neighbor* are physical nodes), this component is not created. If this *cfgnode* and/or the *Neighbor* node is a Logical Group Node (LGN) at this level, the *Rcc* subcomponent indicates the SVCC-based RCC to the *Neighbor*.
Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni CfgNode Rcc AtmConnection (AtmCon)
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode Rcc OsiState (State)

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

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component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Rcc adminState (osiAdmin)

Access Read only

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

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

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

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

Mib AtmRouting

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

Default unlocked

ATTRIBUTE ARtg Pnni CfgNode Rcc operationalState (osiOper)

Access Read only

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

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

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

Mib AtmRouting

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE ARtg Pnni CfgNode Rcc usageState (osiUsage)

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

GROUP ARtg Pnni CfgNode Rcc **Operational (Oper)**

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

ATTRIBUTE ARtg Pnni CfgNode Rcc **negotiatedVersion**

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI version negotiated with the neighbor node.
Mib	AtmRouting
Values	unsupported version1point0
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc **neighborId (neighbor)**

Access	Read: All Write: Illegal
Description	This attribute indicates the neighbor node id associated with the SvccRcc.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc **helloState**

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Access	Read: All Write: Illegal
Description	This attribute indicates the state of the Hello protocol exchange over this *Svcc Rcc* link. The following are the possible values for this attribute: ***down***: The link is down; no PNNI routing packets will be sent or received over such a link. This is the initial state of the Hello Finite State Machine. It can also be reached when lower-level protocols have indicated that the link is not usable. ***attempt***: No Hello packets, or Hello packets with mismatched information, have been received recently from the neighbor. Attempts are made to contact the neighbor node by sending out Hello packets every *helloInterval* seconds. ***oneWayInside***: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of the same peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero. A Hello packet is sent to the neighbor and the Hello timer is restarted. ***twoWayInsid***e: Bidirectional communication over this link between this node and the neighbor node has been achieved.
Mib	AtmRouting
Values	notApplicable down attempt oneWayInside twoWayInside
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc remoteAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the neighboring peer LGN's address.
Mib	AtmRouting
Values	String (20, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc neighborName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name of the neighbor associated with the SvccRcc.

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

ATTRIBUTE ARtg Pnni CfgNode Rcc **retryCount**

Access	Read: All Write: Illegal
Description	This attribute counts the attempts to set up this Routing Control Channel since the last successful attempt.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc **lastFailureCauseCode**

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last transmitted signaling message for this Routing Control Channel that contained the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages. A value of 0 means that no failure has occurred since the last successful attempt.
Mib	AtmRouting
Values	Decimal (0..255)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc **lastFailureDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message for this Routing Control Channel. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is empty.
Mib	AtmRouting
Values	String (0..28, ASCII)
Default	No default

GROUP ARtg Pnni CfgNode Rcc **Statistics (Stats)**

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Properties	Operational
Description	This group contains the statistical attributes for an *Rcc* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Rcc helloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the Hello packets received across this SVCC-based RCC, including bad and mismatched Hello packets. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc helloPacketsTx

Access	Read: All Write: Illegal
Description	This attribute counts the Hello packets transmitted across this SVCC-based RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc mismatchedHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the mismatched Hello packets received over this SVCC-based RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc badHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the bad Hello packets received over this SVCC-based RCC. The counter wraps to zero when it exceeds the maximum value.

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

COMPONENT ARtg Pnni CfgNode Rcc AtmConnection (AtmCon)

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

GROUP ARtg Pnni CfgNode Rcc AtmCon Operational (Oper)

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

ATTRIBUTE ARtg Pnni CfgNode Rcc AtmCon nextHop

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

COMPONENT ARtg Pnni Topology (Top)

Instance	Decimal (0..104)
Groups	GROUP ARtg Pnni Top Operational (Oper)
Scope	Device
Description	*ARtg Pnni Topology/<level>* The *Topology* component provides access to information in this node's

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	PNNI topology database for the level in the PNNI hierarchy specified by the instance value.
Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni Top NodeId (Node) COMPONENT ARtg Pnni Top NodeName
Common Verbs	Help List Display

GROUP ARtg Pnni Top Operational (Oper)

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

ATTRIBUTE ARtg Pnni Top pglNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the Peer Group Leader (PGL) for this level. If this attribute is empty, it indicates that the PGL node ID is unknown.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top activeParentNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node identifier of the LGN representing this peer group in the next higher level.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top activeParentNodeAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the node address of the LGN representing this peer group in the next higher level.

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Mib	AtmRouting
Values	String (19, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top peerGroupId

Access	Read: All Write: Illegal
Description	This attribute indicates the peer group identifier of the LGN representing this peer group in the next higher level.
Mib	AtmRouting
Values	String (0..14, Hex)
Default	No default

COMPONENT ARtg Pnni Top NodeId (Node)

Instance	String (22, Hex)
Groups	GROUP ARtg Pnni Top Node Operational (Oper)
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID>* This component represents the nodal information stored in this node's topology database at this level. The reachable ATM end system addresses (both internal and exterior reachable addresses) advertised by the node can be listed through the *Addr* subcomponent instances. All advertised horizontal links associated with the node can be listed through the *HLnk* subcomponent instances, indexed by their port ID. All advertised uplinks associated with the node can be listed through the *ULnk* subcomponent instances, indexed by their port ID.
Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni Top Node Address (Addr) COMPONENT ARtg Pnni Top Node HorizontalLink (HLnk) COMPONENT ARtg Pnni Top Node UpLink (ULnk)
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes of the *Artg Pnni Top NodeId* and the *ARtg Pnni Top NodeName* components.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node physicallyReachable (reachable)

Access	Read: All Write: Illegal
Description	This attribute indicates whether there exists a PNNI path that connects the node corresponding to this component to the local node.
Mib	AtmRouting
Values	no yes unknown
Default	No default

ATTRIBUTE ARtg Pnni Top Node preferredPglNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the preferred Peer Group Leader (PGL) node ID advertised by the parent *NodeId* component. If this attribute is empty, it indicates the preferred PGL node ID is unknown.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node pglLeadershipPriority (pglLPrio)

Access	Read: All Write: Illegal
Description	This attribute indicates the leadership priority advertised by the parent *NodeId* component. If this value is 0, it indicates that the node cannot be elected as a peer group leader.
Mib	AtmRouting
Values	Decimal (0..205)
Default	0

ATTRIBUTE ARtg Pnni Top Node preferredPglNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name corresponding to the preferred Peer Group Leader (PGL) node ID advertised by the parent *NodeId* component.

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	If this attribute is empty, it indicates the preferred PGL node name is unknown.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top Node nodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the corresponding node ID instance for this *NodeName* under the *ARtg Pnni Top/<level> NodeId/<node id>* component.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node nodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the corresponding instance for this *NodeId* component under the *ARtg Pnni Top/<level> NodeName/<node name>* component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

COMPONENT ARtg Pnni Top Node Address (Addr)

Instance	address [String (19, Hex)] prefixLength [Decimal (1..152)] reachability [internal exterior]
Groups	GROUP ARtg Pnni Top Node Addr Operational (Oper)
Scope	Device
Description	ARtg Pnni Top NodeId/<node ID> Address/<address>, <prefixLength>, <reachability> This component represents an address advertised by the parent *NodeId* component. The address is a string of 38 hex digit s. The *prefixLength* attribute specifies the number of significant bits in the

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address.

The *reachability attribute* specifies whether the address is ***internal*** or ***exterior***.

An ***internal*** reachable address is the address of a destination that is directly attached to the logical node advertising the address. An ***exterior*** reachable address is an address that can be reached through a PNNI routing domain, but that is not located in that PNNI routing domain.

Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node Addr **Operational (Oper)**

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

ATTRIBUTE ARtg Pnni Top Node Addr **scope**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy.
Mib	AtmRouting
Values	Decimal (0..104)
Default	No default

COMPONENT ARtg Pnni Top Node **HorizontalLink (HLnk)**

Instance	Decimal (0..4294967295)
Groups	GROUP ARtg Pnni Top Node HLnk Operational (Oper)
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID> HorizontalLink/<port ID>* This component represents the horizontal link information stored in this node's topology database at this level. All advertised horizontal links associated with the parent *NodeId*

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component can be listed through the *HorizontalLink* subcomponent instances indexed by their port ID.

Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni Top Node HLnk Metrics
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node HLnk Operational (Oper)

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

ATTRIBUTE ARtg Pnni Top Node HLnk remoteNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the node at the far end of this horizontal link.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk remotePortId

Access	Read: All Write: Illegal
Description	This attribute indicates the link's port ID on the node at the far end of this horizontal link.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk remoteNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name of the node at the far end of this horizontal link. This attribute corresponds to the *remoteNodeId* attribute under this component.
Mib	AtmRouting
Values	String (0..12, ASCII)

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Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk **remoteInterfaceName**

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name at the far end of this horizontal link. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string if the far end is a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk **nodeName**

Access	Read: All Write: Illegal
Description	This attribute indicates the *nodeName* of the node at this end of the horizontal link. The value of this attribute is an empty *string* if a node name is not provisioned under the *ModuleData* component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk **interfaceName**

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name at this end of the horizontal link. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string for a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)

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Default	No default

COMPONENT ARtg Pnni Top Node HLnk Metrics

Instance	ubr cbr rtVBR nrtvbr abr
Groups	GROUP ARtg Pnni Top Node HLnk Metrics OutRaig
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID> HLnk/<port ID> Metrics/<service category>* This component contains the advertised metrics of a horizontal link associated with the parent *NodeId* component for a particular service category, stored in this node's topology database for this PNNI level.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node HLnk Metrics OutRaig

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the outgoing direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outAdminWeight

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the actual administrative weight attribute for the specified service category provisioned under *Atmif Pnni* component. The attribute names in *Atmif Pnni* are *cbrWeight*, *rtVbrWeight*, *nrtVbrWeight* and *UbrWeight* corresponding to the service category ***cbr***, ***rtVbr***, ***nrtVbr*** and ***Ubr***. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the

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	administrative weight attribute for the specified service category provisioned under that node's *Atmif Vpt Pnni* component.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outAvailableCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink or a horizontal link, in cells per second, for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outMaxCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink or a horizontal link for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outMaxCtd

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (maxCtd) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt*

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Ca component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics **outCdv**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics **outClr0**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr0* is encoded as the

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negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib — AtmRouting

Values — Decimal (0..4294967294)
notApplicable

Default — No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics **outClr01**

Access — Read: All
Write: Illegal

Description — This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib — AtmRouting

Values — Decimal (0..4294967294)
notApplicable

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Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics **outCellRateMargin**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell rate margin in cells per second of an uplink or a horizontal link for the specified service category for the outgoing direction. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics **outVarianceFactor**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised variance factor of an uplink or a horizontal link for the specified service category for the outgoing direction. The value is displayed in the power of 2 to the power of -8. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

COMPONENT ARtg Pnni Top Node **UpLink (ULnk)**

Instance	Decimal (0..4294967295)
Groups	GROUP ARtg Pnni Top Node ULnk Operational (Oper)
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID> UpLink/<port ID>* This component represents the uplink information stored in this node's topology database at this level. All advertised uplinks associated with the parent *NodeId* component can

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be listed through the *UpLink* component instances which are indexed by their port ID.

Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni Top Node ULnk Metrics
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node ULnk Operational (Oper)

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

ATTRIBUTE ARtg Pnni Top Node ULnk upnodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk upnodeAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the address of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (19, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk upnodePeerGroupId

Access	Read: All Write: Illegal
Description	This attribute indicates the peer group identifier of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (0..14, Hex)
Default	No default

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ATTRIBUTE ARtg Pnni Top Node ULnk upnodeName

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

COMPONENT ARtg Pnni Top Node ULnk Metrics

Instance	ubr cbr rtvbr nrtvbr abr
Groups	GROUP ARtg Pnni Top Node ULnk Metrics OutRaig GROUP ARtg Pnni Top Node ULnk Metrics InRaig
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID> ULnk/<port ID> Metrics/<service category>* This component contains the advertised metrics of an uplink associated with the parent *NodeId* component for a particular service category, stored in this node's topology database at this PNNI level.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node ULnk Metrics OutRaig

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the outgoing direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outAdminWeight

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Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the actual administrative weight attribute for the specified service category provisioned under *Atmif Pnni* component. The attribute names in *Atmif Pnni* are *cbrWeight*, *rtVbrWeight*, *nrtVbrWeight* and *UbrWeight* corresponding to the service category ***cbr***, ***rtVbr***, ***nrtVbr*** and ***Ubr***. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under that node's *Atmif Vpt Pnni* component.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **outAvailableCellRate**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink or a horizontal link, in cells per second, for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **outMaxCellRate**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink or a horizontal link for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

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ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **outMaxCtd**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (maxCtd) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **outCdv**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting

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Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **outClr0**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **outClr01**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the

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specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib — AtmRouting

Values — Decimal (0..4294967294)
notApplicable

Default — No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **outCellRateMargin**

Access — Read: All
Write: Illegal

Description — This attribute indicates the advertised cell rate margin in cells per second of an uplink or a horizontal link for the specified service category for the outgoing direction.

This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.

Mib — AtmRouting

Values — Decimal (0..4294967294)
notApplicable

Units — cell/s

Default — No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **outVarianceFactor**

Access — Read: All
Write: Illegal

Description — This attribute indicates the advertised variance factor of an uplink or a horizontal link for the specified service category for the outgoing direction. The value is displayed in the power of 2 to the power of -8.

This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.

Mib — AtmRouting

Values — Decimal (0..4294967294)
notApplicable

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Default	No default

GROUP ARtg Pnni Top Node ULnk Metrics **InRaig**

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the incoming direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **inAdminWeight**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the administrative weight attribute for the specified service category provisioned under the *Atmif Pnni* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under the *Atmif Vpt Pnni* component.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **inAvailableCellRate**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink for the specified service category for the incoming direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **inMaxCellRate**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink for the specified service category for the incoming direction.

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Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **inMaxCtd**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (*maxCtd*) of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics **inCdv**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt*

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Ca component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE **ARtg Pnni Top Node ULnk Metrics** **inClr0**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink for the specified service category for the incoming direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *inClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE **ARtg Pnni Top Node ULnk Metrics** **inClr01**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink for the specified service category for the incoming direction. CLR is defined as the ratio of the number of cells that do not make it across the

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link or node to the total number of cells transmitted across the link or node. The value in *inClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

COMPONENT ARtg Pnni Top NodeName

Instance	String (1..12, ASCII)
Groups	GROUP ARtg Pnni Top NodeName Operational (Oper)
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name>* This component represents the nodal information stored in this node's topology database at this level, indexed on the names of the nodes. The reachable ATM end system addresses (both internal and exterior reachable addresses) advertised by the node can be listed through the *Addr* subcomponent instances. All advertised horizontal links associated with the node can be listed through the *HLnk* subcomponent instances, which are indexed by their interface names. All advertised uplinks associated with the node can be listed through the *ULnk* subcomponent instances, indexed by their interface names. The topology information for nodes running older loads and for nodes that are not a Nortel Networks Multiservice Switch is not available under this

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component. The information for these nodes is visible under the *Artg Pnni Top Node* hierarchy.

Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni Top NodeName Address (Addr) COMPONENT ARtg Pnni Top NodeName HorizontalLink (HLnk) COMPONENT ARtg Pnni Top NodeName UpLink (ULnk)
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Artg Pnni Top NodeId* and the *ARtg Pnni Top NodeName* components.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName physicallyReachable (reachable)

Access	Read: All Write: Illegal
Description	This attribute indicates whether there exists a PNNI path that connects the node corresponding to this component to the local node.
Mib	AtmRouting
Values	no yes unknown
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName preferredPglNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the preferred Peer Group Leader (PGL) node ID advertised by the parent *NodeId* component. If this attribute is empty, it indicates the preferred PGL node ID is unknown.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName pglLeadershipPriority (pglLPrio)

Access	Read: All Write: Illegal

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Description	This attribute indicates the leadership priority advertised by the parent *NodeId* component. If this value is 0, it indicates that the node cannot be elected as a peer group leader.
Mib	AtmRouting
Values	Decimal (0..205)
Default	0

ATTRIBUTE ARtg Pnni Top NodeName preferredPglNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name corresponding to the preferred Peer Group Leader (PGL) node ID advertised by the parent *NodeId* component. If this attribute is empty, it indicates the preferred PGL node name is unknown.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName nodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the corresponding node ID instance for this *NodeName* under the *ARtg Pnni Top/<level> NodeId/<node id>* component.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName nodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the corresponding instance for this *NodeId* component under the *ARtg Pnni Top/<level> NodeName/<node name>* component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

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COMPONENT ARtg Pnni Top NodeName Address (Addr)

Instance	address [String (19, Hex)] prefixLength [Decimal (1..152)] reachability [internal exterior]
Groups	GROUP ARtg Pnni Top NodeName Addr Operational (Oper)
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> Addr/<address>, <prefixLength>, <reachability>* This component represents an address advertised by the parent *NodeName* component. The address is a string of 38 hex digits. The *prefixLength* attribute specifies the number of significant bits in the address. The *reachability* attribute specifies whether the address is ***internal*** or ***exterior***. A value of ***internal*** refers to a reachable address of a destination that is directly attached to the logical node advertising the address. A value of ***exterior*** refers to a reachable address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName Addr Operational (Oper)

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

ATTRIBUTE ARtg Pnni Top NodeName Addr scope

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy.

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Mib	AtmRouting
Values	Decimal (0..104)
Default	No default

COMPONENT ARtg Pnni Top NodeName HorizontalLink (HLnk)

Instance	String (1..10, ASCII)
Groups	GROUP ARtg Pnni Top NodeName HLnk Operational (Oper)
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> HorizontalLink/ <interface name>* This component represents the horizontal link information stored in this node's topology database at this level. All advertised horizontal links associated with the parent *NodeName* component can be listed through the *HorizontalLink* subcomponent instances, indexed by their interface names. The interface names can take one of the following forms: (a) ***AtmIfNumber.VptNumber*** to indicate a physical interface. Therefore, ***HLnk/100*** indicates *AtmIf/100* while ***HLnk/100.22*** indicates *AtmIf/100 Vpt/22*. (b) Values ***<0-4294967295>*** to indicate a logical link. Therefore, ***HLnk/4202201295*** indicates a logical link.
Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni Top NodeName HLnk Metrics
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName HLnk Operational (Oper)

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

ATTRIBUTE ARtg Pnni Top NodeName HLnk remoteNodeId

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

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Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk remotePortId

Access	Read: All Write: Illegal
Description	This attribute indicates the link's port ID on the node at the far end of this horizontal link.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk remoteNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name of the node at the far end of this horizontal link. This attribute corresponds to the *remoteNodeId* attribute under this component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk remoteInterfaceName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name at the far end of this horizontal link. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string if the far end is a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk nodeName

Access	Read: All Write: Illegal

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Description	This attribute indicates the *nodeName* of the node at this end of the horizontal link. The value of this attribute is an empty *string* if a node name is not provisioned under the *ModuleData* component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk interfaceName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name at this end of the horizontal link. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string for a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)
Default	No default

COMPONENT ARtg Pnni Top NodeName HLnk Metrics

Instance	ubr cbr rtVBR nrtvbr abr
Groups	GROUP ARtg Pnni Top NodeName HLnk Metrics OutRaig
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> HLnk/<interface name> Metrics/<service category>* This component contains the advertised metrics of a horizontal link associated with the parent *NodeName* component for a particular service category, stored in this node's topology database for this PNNI level.
Mib	AtmRouting
Common Verbs	Help List Display

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GROUP ARtg Pnni Top NodeName HLnk Metrics **OutRaig**

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the outgoing direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics **outAdminWeight**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the actual administrative weight attribute for the specified service category provisioned under *Atmif Pnni* component. The attribute names in *Atmif Pnni* are *cbrWeight*, *rtVbrWeight*, *nrtVbrWeight* and *UbrWeight* corresponding to the service category ***cbr***, ***rtVbr***, ***nrtVbr*** and ***Ubr***. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under that node's *Atmif Vpt Pnni* component.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics **outAvailableCellRate**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink or a horizontal link, in cells per second, for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics **outMaxCellRate**

Access	Read: All Write: Illegal

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Description	This attribute indicates the advertised maximum cell rate of an uplink or a horizontal link for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics **outMaxCtd**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (maxCtd) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics **outCdv**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is

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a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outClr0

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outClr01

Access	Read: All Write: Illegal

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Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outCellRateMargin

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell rate margin in cells per second of an uplink or a horizontal link for the specified service category for the outgoing direction. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outVarianceFactor

Access	Read: All Write: Illegal

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Description	This attribute indicates the advertised variance factor of an uplink or a horizontal link for the specified service category for the outgoing direction. The value is displayed in the power of 2 to the power of -8. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

COMPONENT ARtg Pnni Top NodeName UpLink (ULnk)

Instance	String (1..10, ASCII)
Groups	GROUP ARtg Pnni Top NodeName ULnk Operational (Oper)
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> UpLink/<interface name>* This component represents the uplink information stored in this node's topology database at this level. All advertised uplinks associated with the parent *NodeName* component can be listed through the *UpLink* component instances, indexed by their interface names. The interface names can take one of the following forms: (a) ***AtmIfNumber.VptNumber*** to indicate a physical interface. Therefore, ***ULnk/100*** indicates *AtmIf/100* while ***ULnk/100.22*** indicates *AtmIf/100 Vpt/22*. (b) Values ***<0-4294967295>*** to indicate a logical link. Therefore, ***ULnk/3902201295*** indicates a logical link.
Mib	AtmRouting
Dyn. Subcomp.	COMPONENT ARtg Pnni Top NodeName ULnk Metrics
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName ULnk Operational (Oper)

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

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ATTRIBUTE ARtg Pnni Top NodeName ULnk **upnodeId**

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk **upnodeAddress**

Access	Read: All Write: Illegal
Description	This attribute indicates the address of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (19, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk **upnodePeerGroupId**

Access	Read: All Write: Illegal
Description	This attribute indicates the peer group identifier of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (0..14, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk **upnodeName**

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

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COMPONENT ARtg Pnni Top NodeName ULnk Metrics

Instance	ubr cbr rtvbr nrtvbr abr
Groups	GROUP ARtg Pnni Top NodeName ULnk Metrics OutRaig GROUP ARtg Pnni Top NodeName ULnk Metrics InRaig
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> ULnk/<interface name> Metrics/<service category>* This component contains the advertised metrics of an uplink associated with the parent *NodeName* component for a particular service category, stored in this node's topology database at this PNNI level.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName ULnk Metrics OutRaig

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the outgoing direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outAdminWeight

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the actual administrative weight attribute for the specified service category provisioned under *Atmif Pnni* component. The attribute names in *Atmif Pnni* are *cbrWeight*, *rtVbrWeight*, *nrtVbrWeight* and *UbrWeight* corresponding to the service category ***cbr***, ***rtVbr***, ***nrtVbr*** and ***Ubr***. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under that node's *Atmif Vpt Pnni* component.

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

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics **outAvailableCellRate**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink or a horizontal link, in cells per second, for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics **outMaxCellRate**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink or a horizontal link for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics **outMaxCtd**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (maxCtd) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not

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applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics **outCdv**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics **outClr0**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

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If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outClr01

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outCellRateMargin

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Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell rate margin in cells per second of an uplink or a horizontal link for the specified service category for the outgoing direction. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	cell/s
Default	No default

ATTRIBUTE **ARtg Pnni Top NodeName ULnk Metrics** **outVarianceFactor**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised variance factor of an uplink or a horizontal link for the specified service category for the outgoing direction. The value is displayed in the power of 2 to the power of -8. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

GROUP **ARtg Pnni Top NodeName ULnk Metrics** **InRaig**

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the incoming direction.
Mib	AtmRouting

ATTRIBUTE **ARtg Pnni Top NodeName ULnk Metrics** **inAdminWeight**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the administrative weight

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attribute for the specified service category provisioned under the *Atmif Pnni* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under the *Atmif Vpt Pnni* component.

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

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inAvailableCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink for the specified service category for the incoming direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inMaxCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink for the specified service category for the incoming direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inMaxCtd

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (*maxCtd*) of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component.

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If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Units: microsec

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inCdv

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink for the specified service category for the incoming direction.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Units: microsec

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inClr0

Access: Read: All
Write: Illegal

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Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink for the specified service category for the incoming direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *inClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE **ARtg Pnni Top NodeName ULnk Metrics** **inClr01**

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink for the specified service category for the incoming direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *inClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting

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Values	Decimal (0..4294967294) notApplicable
Default	No default

COMPONENT ARtg Pnni Port

Instance	Decimal (0..4294967295)
Scope	Device
Description	*ARtg Pnni Port/<n>* This component represents a port advertised within the PNNI routing domain.
Mib	AtmRouting
Common Verbs	Help List Display

COMPONENT ARtg Pnni Cache

Groups	GROUP ARtg Pnni Cache Provisioned (Prov) GROUP ARtg Pnni Cache Operational (Oper)
Scope	Device
Description	*Artg Pnni Cache* This component represents the PNNI Routing Cache. It enhances call setup performance by providing a call setup request with a previously computed route from the *Cache*, whenever possible. The *Cache* must be populated with previously computed routes before it is usable and it reduces the number of on-demand route computations once populated. The *Cache* stores and maintains entries to several destinations and uses them to provide suitable routing paths for subsequent call setup requests. The *clear* verb removes all *Cache* entries. A *Cache* route entry consists of multiple alternate routes to a destination node. The number of alternate routes is set by the *maxPaths* value under the *Artg Pnni lb<svcCat>*component.
Mib	AtmRouting
Common Verbs	Help List Display Add DELete

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VERB Clear ARtg Pnni Cache

Impact	Configuration
Description	*Clear Artg Pnni Cache* This verb clears all the previously computed route entries stored in the PNNI cache.

GROUP ARtg Pnni Cache **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Artg Pnni Cache* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Cache **agingPeriod**

Access	Read: All Write: All
Description	This attribute specifies the maximum lifetime of a *Cache* entry. Specifying a low *agingPeriod* is useful when many SVCs are expected to be routed through the network to ensure that the *Cache* is periodically refreshed. Specifying a high *agingPeriod* is useful when many permanent connections are expected to be routed through the network. As the fluctuations in the available network resources become more frequent, the value of *agingPeriod* should be decreased to reflect the dynamic nature of the network.
Mib	AtmRouting
Values	Decimal (180..7200)
Units	seconds
Default	1800

ATTRIBUTE ARtg Pnni Cache **maxNumEntries**

Access	Read: All Write: All
Description	This attribute specifies the maximum number of the cache entries to be stored in the routing cache. Reducing the *maxNumEntries* below the current *Cache* size causes the *Cache* to shrink by purging the oldest entries. A larger value of *maxNumEntries* causes more CP memory to be used.

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The value of this attribute is bound by the value of *maxPaths* of *Artg Pnni Ib<srvCat>* component and may not exceed 30000/*maxPaths.*

Mib AtmRouting

Values Decimal (100..10000)

Default 5000

ATTRIBUTE ARtg Pnni Cache purgeEntryAtPathInvalid

Access
Read: All
Write: All

Description This attribute specifies whether to purge the whole route cache entry when a path becomes invalid, or to remove only the invalid path.

A route cache entry consists of one or more paths and support calls of certain traffic requirements. A path becomes invalid if it can no longer support the traffic requirements of the associated route. This may happen if any link along the path fails, or its capacity is reduced.

If this attribute is set to *yes*, the whole route cache entry will be purged after a path becomes invalid. If this attribute is set to *no*, only the path will be removed.
For most networks, it is desirable to purge the whole route cache entry when one path becomes invalid since this allows for better load balancing. However, for some network scenarios, this behavior is not desirable, because it may lead to many unnecessary route cache purges at high network utilization.

The default value of this attribute is *yes*. It should only be changed if recommended by Nortel Networks.

Mib AtmRouting

Values
no
yes

Default yes

ATTRIBUTE ARtg Pnni Cache maxPathsToIntermediateNode

Access
Read: All
Write: All

Description This attribute specifies the maximum number of equal cost paths that are kept to an intermediate node during on-demand route computation. The default value is 1.

Setting this attribute to a value greater than 1 benefits customers who want to calculate more than 3 alternate paths to the destination and store them in the cache. This helps them achieve better load balancing across their network. However, changing the default value to more than 1 will

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degrade route calculation performance. It should only be changed from the default if recommended by Nortel Networks.

Mib	AtmRouting
Values	Decimal (1..20)
Default	1

GROUP ARtg Pnni Cache Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the routing cache.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Cache currentNumEntries

Access	Read: All Write: Illegal
Description	This attribute indicates the number of route entries currently stored in the cache. The *currentNumEntries* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *avgLifetime*, *numReplacements*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *numAgedEntries*. Together, these attributes indicate the utilization of the Route Cache.
Mib	AtmRouting
Values	Decimal (0..10000)
Default	No default

ATTRIBUTE ARtg Pnni Cache peakNumEntries (pkEntries)

Access	Read: All Write: Illegal
Description	This attribute indicates the highest number of entries stored in the cache since the cache was last created or cleared by using the *Clear* command. The *peakNumEntries* value is a useful diagnostic and engineering tool in evaluating the memory impacts of the *Cache*. If the *peakNumEntries* equals the *maxNumEntries* for a significant amount of time, then the *maxNumEntries* may need to be increased.
Mib	AtmRouting
Values	Decimal (0..10000)
Default	No default

ATTRIBUTE ARtg Pnni Cache hitRatio

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Access	Read: All Write: Illegal
Description	This attribute indicates the percentage of PNNI routing requests fulfilled using the routing cache since the time the cache was last created or cleared by using the *clear* command. If the *cacheHits* value is low, then this is an indication that the cache is not engineered properly or is not appropriate for the profile of the network traffic. A low value of *cacheHits* may indicate that the traffic profiles are constantly changing are not being reused. If this is the case, the *Cache* may need to be disabled on this node. An equilibrium has to be reached within the network before an accurate value from *cacheHits* is obtained.
Mib	AtmRouting
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE ARtg Pnni Cache cacheUptime (uptime)

Access	Read: All Write: Illegal
Description	This attribute indicates the time since the routing Cache was last created or cleared.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

ATTRIBUTE ARtg Pnni Cache avgLifetime

Access	Read: All Write: Illegal
Description	This attribute indicates the average lifetime of the route entries in the cache. The *avgLifetime* can be used for diagnostic or engineering purposes in setting an appropriate value for the *agingPeriod*. An *avgLifetime* value lower than the *agingPeriod* indicates that some fraction of the *Cache* entries are removed before they are normally aged. When the *avgLifetime* equals the *agingPeriod*, this indicates that the *agingPeriod* value might have to be increased. However, note that other

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	conditions in the network can also cause this condition, such as very stable network topology. The *avgLifetime* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *numReplacements*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *numAgedEntries*.
Mib	AtmRouting
Values	Decimal (0..7200)
Units	seconds
Default	No default

ATTRIBUTE ARtg Pnni Cache numReplacements (nRep)

Access	Read: All Write: Illegal
Description	This attribute counts the entries that have been removed from the *Cache* in order to make room for newer entries. It is set to zero when the *Cache* is created or cleared using the *Clear* command. The *numReplacements* value wraps to zero when the maximum value is exceeded or when the *totalEntriesRemoved* value is exceeded. If the number of entries removed from the *Cache* due to replacement operations is high, the *maxPaths* value may need to be increased. The *numReplacements* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *numAgedEntries*, *totalEntriesRemoved*.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Cache numCrankbackInvalidations (nCrank)

Access	Read: All Write: Illegal
Description	This attribute counts the entries removed from the *Cache* due to crankback purging operations. It is set to zero when the *Cache* is created or cleared using the *Clear* command. The *numCrankbackInvalidations* value wraps to zero when the maximum value is exceeded or when the *totalEntriesRemoved* value is exceeded.

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If this value is high, it suggests that the route entries in the *Cache* are becoming invalid during their lifetime. This means that the *agingPeriod* might have to be decreased. Reroutes due to crankbacks are resource-intensive and add to network latency. Therefore *numCrankbackInvalidations* takes precedence over the *avgLifetime* status.

The *numCrankbackInvalidations* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numReplacements*, *numTopologyInvalidations*, and *numAgedEntries*, *totalEntriesRemoved*.

Mib: AtmRouting

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE ARtg Pnni Cache numTopologyInvalidations (nTopInv)

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of entries in the *Cache* that have replaced older entries due to significant changes in known resources within the PNNI network. It is set to zero when the *Cache* is created or cleared using the *Clear* command.

The *numTopologyInvalidations* value wraps to zero when the maximum value is exceeded or when the *totalEntriesRemoved* wraps to zero.

If this value is high, it indicates that the dynamic nature of the network topology may be decreasing the effectiveness of the *Cache*.

The *numTopologyInvalidations* value must be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numReplacements*, *numCrankbackInvalidations*, *numAgedEntries*, *totalEntriesRemoved*.

Mib: AtmRouting

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE ARtg Pnni Cache numAgedEntries (nAged)

Access: Read: All
Write: Illegal

Description: This attribute counts the entries that have aged out of the *Cache* since the *Cache* was last created or cleared using the *clear* command. It is set to zero when the *Cache* is created or cleared using the *clear* command.

The *numAgedEntries* value wraps to zero when the maximum value is exceeded or when the *totalEntriesRemoved* wraps to zero.

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If this value is low, either the *agingPeriod* is either too high or the other *Cache* purging operations occur very frequently.

The *numAgedEntries* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numReplacements*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *totalEntriesRemoved*.

Mib AtmRouting

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE ARtg Pnni Cache totalEntriesRemoved (totRm)

Access Read: All
Write: Illegal

Description This attribute counts the *Cache* entries that have been removed from the *Cache*. The counter starts from zero when the *Cache* is created or cleared using the *clear* command.

The counter wraps to zero when the maximum value is exceeded.

This value should be used for diagnostic or engineering purposes in conjunction with other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numReplacements*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *numAgedEntries*.

Mib AtmRouting

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE ARtg Pnni Cache numHits

Access Read: All
Write: Illegal

Description This attribute indicates the actual number of PNNI routing requests fulfilled using the routing cache since the time the cache was last created or cleared by using the *Clear* command.

An increase in the value after a call setup request is an indication that the call setup request was satisfied using the routing cache.

Mib AtmRouting

Values Decimal (0..4294967295)

Default No default

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COMPONENT ARtg Pnni LoadBalancing (Lb)

Instance	cbr rtVbr nrtVbr ubr abr
Groups	GROUP ARtg Pnni Lb Provisioned (Prov) GROUP ARtg Pnni Lb Operational (Oper)
Scope	Device
Description	*Artg Pnni LoadBalancing/<serviceCategory>* This component represents the load balancing functionality of PNNI Routing for the service category specified by the instance value.
Mib	AtmRouting
Common Verbs	Help List Display

VERB Clear ARtg Pnni Lb

Impact	Configuration
Description	*Clear Artg Pnni LoadBalancing/<serviceCategory>* This verb sets to zero all the Load Balancing operational attributes for the service category specified by the instance value.

GROUP ARtg Pnni Lb Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the load balancing functionality of PNNI Routing.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Lb method

Access	Read: All Write: All
Description	This attribute specifies the load balancing method to be used by PNNI routing for the corresponding service category. ***maxAvCr***. PNNI routing chooses the path that has the maximum available cell rate as the routing path. ***random***. The routing path is chosen randomly from all the acceptable paths. ***avCrProb***. The routing path is chosen with a probability in proportion to its

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available cell rate. This method will result in the more frequent selection of a route having a higher available cell rate over that with a lower available cell rate.

optMetricProb. The routing path is chosen with a probability inversely proportional to the optimization metric. This method will result in the more frequent selection of a route having the lowest value of the optimization metric over that with a higher optimization metric.

avCrOptMetricProb. The routing path is chosen with a probability that is based on both the proportional value of the available cell rate and the inverse proportional value of the optimization metric.

When the value of *maxPaths* attribute is greater than 3, only the *random* method is allowed for all service categories.

Mib — AtmRouting

Values
maxAvCr
random
avCrProb
optMetricProb
avCrOptMetricProb

Default — random

ATTRIBUTE ARtg Pnni Lb maxPaths

Access
Read: All
Write: All

Description

This attribute specifies the maximum number of paths to be used for load balancing and route caching.

Setting this attribute to ***1*** turns the load balancing off for all load balancing technique except for ***maxAvCr***. This load balancing technique requires *maxPaths* to be set to ***1***.

When the *Artg Pnni Cache* component is provisioned, this attribute also specifies the maximum number of paths to be stored in a route *Cache* entry for each destination node.

Setting this attribute to a value greater than ***3*** is not recommended except for certain specific topologies. In these cases, it allows a better load distribution when route cache is used. However, for other topologies, it will significantly slow down on-demand route computation. Also when this attribute is set to a value greater than ***3***, the *Artg Pnni lb<srvCat> method* attribute can only be set to ***random***.

When this attribute is set to a value greater than ***3***, *maxNumEntries* in the *Artg Pnni Cache* subcomponent is limited to ensure that maximum memory consumption by the route cache on the CP does not increase

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when *maxPaths* is greater than ***3***. *maxNumEntries* may not exceed the value of ***30000***/ *maxPaths*.

Mib	AtmRouting
Values	Decimal (1..20)
Default	2

ATTRIBUTE ARtg Pnni Lb minVariance (minVar)

Access	Read: All Write: All
Description	This attribute specifies the minimum variance value to be used for each optimization metric supported by the service category of this *LoadBalancing* instance. This attribute is a vector indexed by the optimization metric. Note that the values of this vector are explicit values as opposed to the factors required to set the *slopeVariance* attribute. A larger variance allows more usable paths to be considered for load balancing. A low variance of zero means that only the *slopeVariance* attribute is used in determining the acceptable variance. The maximum range boundaries for each of the optimization metrics are: ***- cdv***: 2147483647 (for cbr and rtVbr only). ***- maxCtd***: 2147483647 (for cbr and rtVbr only). ***- aw***: 4294967295. The acceptable variance is calculated based on the following formula: *acceptableVariance = minVariance + optM * slopeVariance/100* where *optM* represents the optimization metric value of the best path.
Mib	AtmRouting
Vector of	Decimal (0..4294967295)
Index	cdv maxCtd aw
Default	(0, 0, 0)

ATTRIBUTE ARtg Pnni Lb slopeVariance (slopeVar)

Access	Read: All Write: All
Description	This attribute specifies the slope of the acceptable variance, for each optimization metric supported by the service category of this *LoadBalancing* instance. This attribute is a vector indexed by optimization metric. The values of this vector are factors.

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

A *slopeVariance* of zero means that only the acceptable variance is given by the *minVariance* attribute. If both *minVariance* and *slopeVariance* attributes are zero, means that only the best paths of equal value to the *optimizationMetric* will be considered in load balancing.

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

Mib	AtmRouting
Vector of	Decimal (0..1900)
Units	%
Index	cdv maxCtd aw
Default	(0, 0, 0)

GROUP ARtg Pnni Lb Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the load balancing functionality of PNNI Routing.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Lb avgNumComputedPaths (avgPaths)

Access	Read: All Write: Illegal
Description	This attribute indicates the average number of computed paths that resulted from a Dijkstra calculation using the variance constraints provisioned in the *minVariance*, and *slopeVariance* attributes. It is set to zero when the *Load Balancing/<serviceCategory>* component is cleared using the *Clear* command. This attribute is a vector indexed by the optimization metric: ***cdv***, ***maxCtd***, and ***aw***. The *avgNumComputedPaths* value is a useful diagnostic and engineering tool in determining the most useful variance values for each *optimizationMetric*.

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Mib	AtmRouting
Vector of	Decimal (1.0..3.0)
Index	cdv maxCtd aw
Default	No default

ATTRIBUTE ARtg Pnni Lb optMetricLoadDistribution (optMLd)

Access	Read: All Write: Illegal
Description	This attribute indicates the distribution of the routed path relative to the acceptable paths sorted by the *optimizationMetric*. It indicates, in percentage, the number of times the best optimized path and subsequent sub-optimal paths are chosen as the routing path. Here *path1* is the best path, and *path2* and *path3* variables are the subsequent sub-optimal paths. It is set to zero when the *Load Balancing/<serviceCategory>* component is cleared using the *Clear* command. The *optMetricLoadDistribution* value is a useful diagnostic and engineering tool in determining the most useful load balancing *method* when taken in consideration with: *avgNumComputedPaths*, *avCrLoadDistribution*, *minVariance*, and *slopeVariance*.
Mib	AtmRouting
Vector of	Decimal (0.0..100.0)
Units	%
Index	path1 path2 path3
Default	No default

ATTRIBUTE ARtg Pnni Lb avCrLoadDistribution (avCrLd)

Access	Read: All Write: Illegal
Description	This attribute indicates the distribution of the routed path relative to the acceptable paths sorted by best available cell rate. It indicates, in percentage, the number of times the widest path, relative to the available cell rate, and subsequent narrower paths are chosen as the routing path. Here *path1* is the best path, and *path2* and *path3* variables are the subsequent sub-optimal paths. It is set to zero when the *Load Balancing/<serviceCategory>* component is

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cleared using the *Clear* command.

The *avCrLoadDistribution* value is a useful diagnostic and engineering tool in determining the most useful load balancing *method* when taken in consideration with: *avgNumComputedPaths*, *optMetricLoadDistribution*, *minVariance*, and *slopeVariance*.

Mib	AtmRouting
Vector of	Decimal (0.0..100.0)
Units	%
Index	path1 path2 path3
Default	No default

COMPONENT ARtg Pnni NodeName (Node)

Instance	String (1..12, ASCII)
Groups	GROUP ARtg Pnni Node Provisioned (Prov)
Scope	Device
Description	*Artg Pnni NodeName/<string>* This component represents a node in the PNNI network. The recommendation is that the instance string should match the nodeName of the node. To get the nodeName of the node, log in to the remote node and enter this command: *d -p Mod nodeName*
Mib	AtmRouting
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni Node Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Artg Pnni NodeName* component.

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Mib	AtmRouting

ATTRIBUTE ARtg Pnni Node nodeId

Access	Read and write
Description	This attribute specifies the *nodeId* of the remote node. The *nodeId* can be retrieved by logging in to the remote node and executing this command: *d ARtg Pnni Cfg/* opNodeId*
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

COMPONENT ARtg Pnni MdtlPath (Mdtl)

Instance	String (1..32, ASCII)
Scope	Device
Description	*Artg Pnni MdtlPath/[string] Hop/n* This component represents a *MDTL* path. It is composed of a list of hops. 1) Each hop in a path must use a physical *node ID*. 2) Each hop must be at the same PNNI level. 3) Each *MDTL* must have at least two hops. 4) Maximum number of hops is 20. 5) First hop *node ID* must be the originator's *node ID*. 6) Loopback is not allowed in a path. 7) Destination *port ID* should be zero, but not enforced by semantic checks. 8) One cannot delete a *nodename* if the *nodename* is used by one of the hops. 9) Maximum number of MDTL paths is 128.
Mib	AtmRouting
Opt. Subcomp.	COMPONENT ARtg Pnni Mdtl Hop
Common Verbs	Help List Display Add DELete

COMPONENT ARtg Pnni Mdtl Hop

Instance	Decimal (1..255)
Groups	GROUP ARtg Pnni Mdtl Hop Provisioned (Prov)
Scope	Device

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Description	*Artg Pnni Mdtl/n hop/n* This component represents a node that the MDTL path has to traverse.
Mib	AtmRouting
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni Mdtl Hop Provisioned (Prov)

Properties	Provisioned
Description	(//CHECK:AntPnniSemanticChecks::checkMdtlHopProv // Verify that the nodeName is initialize.)This group contains the provisionable attributes for the *Artg Pnni Mdtl/n Hop/n* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Mdtl Hop nodeName (name)

Access	Read and write
Description	This attribute specifies the node corresponding to this hop.
Mib	AtmRouting
Values	String (1..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Mdtl Hop portId

Access	Read and write
Description	This attribute specifies the portId to be used on the exiting side of the node. A value set to 0 indicates that the node will determine the proper *portId.*
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	0

COMPONENT ARtg Pnni LoadReBalancingGroup (Lrbg)

Instance	Decimal (1..5)
Groups	GROUP ARtg Pnni Lrbg Provisioned (Prov) GROUP ARtg Pnni Lrbg Operational (Oper)

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Scope	Device
Description	*ARtg Pnni Lrbg/n* This component represents the parallel link group for load rebalancing.When one link in the load rebalancing group returns to service or when a new link is added into a load rebalancing group, the bandwidth or the number of connections will be rebalanced over all the parallel links in the group. A node can contain up to a maximum of five load rebalancing groups and each group can have up to a maximum of five Pnni links.
Mib	AtmRouting
Opt. Subcomp.	COMPONENT ARtg Pnni Lrbg Link
Common Verbs	Help List Display Add DELete

VERB REBALANCE **ARtg Pnni Lrbg**

Impact	Service
Description	*Rebalance [-cancel] ARtg Pnni Lrbg/n* This command triggers a load rebalancing over the parallel links defined by the load rebalancing group. The *-cancel* option causes the current load rebalancing to be cancelled. Use of the *Rebalance* command may result in small cell loss. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP **ARtg Pnni Lrbg** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *ARtg Pnni Lrbg/n* component.
Mib	AtmRouting

ATTRIBUTE **ARtg Pnni Lrbg** **automaticReBalancing**

Access	Read and write
Description	This attribute specifies whether automatic load rebalancing for the load rebalancing group is enabled. The following values can be specified:

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enabled: Load rebalancing is triggered either when a member link returns to service or a new link is added into the load rebalancing group.
disabled: Load rebalancing is not triggered by either a link returning to service or a new link being added into a load rebalancing group.

Manually rebalancing of connections within a load rebalancing group is allowed regardless of whether the attribute is configured as ***enabled*** or ***disabled***.

Mib	AtmRouting
Values	enabled disabled
Default	disabled

GROUP ARtg Pnni Lrbg Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *ARtg Pnni Lrbg/n* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Lrbg reBalancingState (state)

Access	Read only
Description	This attribute indicates the current state of the load rebalancing group. One of the following values is indicated: ***disabled*****:** The load rebalancing group has been disabled and one or more alarms have been raised. Alarms can be raised because: - the neighbor NodeId for the parallel links is not identical. - one link within the load rebalancing group is also configured as a member link of a load rebalancing group on the neighbor side. - the neighbor side for one link within the load rebalancing group does not support the load rebalancing feature. ***idle*****:** Load rebalancing is not in progress for a given load rebalancing group.When either one link returns to service or one link is added into the load rebalancing group or the operator issues the *Rebalance* command, the rebalancingState will become *rebalancingInProgress*. ***rebalancingInProgress*****:** Load rebalancing is currently in progress and connections are potentially being moved.
Mib	AtmRouting
Values	disabled idle rebalancingInProgress
Default	No default

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COMPONENT ARtg Pnni Lrbg Link

Instance	Decimal (1..5)
Groups	GROUP ARtg Pnni Lrbg Link Provisioned (Prov) GROUP ARtg Pnni Lrbg Link Operational (Oper)
Scope	Device
Description	*ARtg Pnni Lrbg/n Link/n* This component represents one of the parallel links in a load rebalancing group. Parallel links have the same AtmIf CA values with respect to the various bandwidth pools and have the same metric (AW, CDV, maxCTD, CLR). The links do not need to be of the same physical type. A LAPs link is treated as one simple link.
Mib	AtmRouting
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni Lrbg Link Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *ARtg Pnni Lrbg/n Link/n* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Lrbg Link interfaceName

Access	Read and write
Description	This attribute specifies the Atmif Pnni compnent to be provisioned as a member link within a load rebalancing group.
Mib	AtmRouting
Values	Link (Service, loadReBalancingGroupLink)
Default	No default

GROUP ARtg Pnni Lrbg Link Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *ARtg Pnni Lrbg/n Link/n* component.
Mib	AtmRouting

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ATTRIBUTE ARtg Pnni Lrbg Link neighborNodeId

Access	Read only
Description	This attribute indicates the neighbor NodeId for a particular link within a load rebalancing group.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Lrbg Link groupConfiguredOnNeighbor

Access	Read only
Description	This attribute indicates whether this link within the load rebalancing group is also configured as a member link of a load rebalancing group on the neighbor node.
Mib	AtmRouting
Values	unknown configured notConfigured
Default	No default

ATTRIBUTE ARtg Pnni Lrbg Link featureSupportedOnNeighbor

Access	Read only
Description	This attribute indicates whether the neighbor side for this link supports the load rebalancing feature.
Mib	AtmRouting
Values	unknown supported notSupported
Default	No default

COMPONENT ARtg Pnni Reroute

Groups	GROUP ARtg Pnni Reroute Provisioned (Prov) GROUP ARtg Pnni Reroute Operational (Oper)
Scope	Device

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Description	*ARtg Pnni Reroute* This component represents the rerouting capabilities of the module.
Mib	AtmRouting
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE ARtg Pnni Reroute

Impact	Service
Description	*Optimize [-cancel] ARtg Pnni Reroute* This command triggers a module optimization pass for all eligible connections. Connection eligibility is determined by the *moduleOptimizationConnections* attribute under the node-level *Reroute* component or under the application-level *Reroute Ov* component. The *-cancel* option causes the current module optimization pass to be cancelled. The pass terminates after the current application completes its optimization pass. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP ARtg Pnni Reroute Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Artg Pnni Reroute* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Reroute protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols which are requested by connection segments for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with

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	the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the last rendezvous node is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr***: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmRouting
Values	localGlobal localOnly globalOnly localEbr ebrOnly
Default	localGlobal

ATTRIBUTE ARtg Pnni Reroute localDomain (domain)

Access	Read and write
Description	This attribute specifies the local domain for the node. This value is advertised to all PNNI neighbors to determine the type of local domain link. Use of the default value, ***unspecified***, will result in a warning being issued, since it is recommended that this value be initialized. If the value is set to ***intraDomain***, all PNNI neighbors will identify their connecting links as intra-domain links.
Mib	AtmRouting
Values	Decimal (2..1024) intraDomain (intra) unspecified (unspec)
Default	unspecified

ATTRIBUTE ARtg Pnni Reroute numOptAttempts

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization attempts to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection

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segment. Subsequent path optimizations do not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization does not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

Mib: AtmRouting

Values: Decimal (0..15)

Default: 1

ATTRIBUTE ARtg Pnni Reroute **moduleOptimizationConnections**

Access: Read and write

Description: This attribute specifies which connection segments are considered by a module optimization pass.

One of the following values can be specified:
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments which are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is found under *RerouteInfo* component. If the rerouting protocol is Ebr then the *ebrOptimalMetricValue* attribute indicated the best known optimization metric value. If the local rerouting protocol is actived to this connection segment then the *localOptimalMetricValue* attribute indicated the best known optimization metric value for the local segment. If the global rerouting protocol is actived to this connection segment then the *globalOptimalMetricValue* attribute indicated the best known optimization metric value for the global connection segment.
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: AtmRouting

Values:
none
recoveredOnly
allSubscribed

Default: recoveredOnly

ATTRIBUTE ARtg Pnni Reroute **switchoverMechanism**

Access: Read and write

Description: This attribute specifies the mechanism used for switchover of a rerouted connection segment.

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	One of the following values can be specified: ***standard***: The mechanism described in the ATM Forum "Domain based Rerouting" specification is used for switchover. This value ensures interoperability with other vendors' equipment running ATM Forum "Domain based Rerouting". ***rcl***: The Reduced Cell Loss (RCL) mechanism is used for switchover. RCL is a value-added extension to the standard mechanism that allows faster switchover time.
Mib	AtmRouting
Values	standard rcl
Default	standard

ATTRIBUTE ARtg Pnni Reroute localConnectionRecoverySubscr (IConRec)

Access	Read and write
Description	This attribute specifies which connection segments request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified type(s) which request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery. Connection segments of the specified type(s) which request ***localEbr*** request subscription to the local connection recovery. Only one will be granted. One or more of the following values can be specified: ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.
Mib	AtmRouting
Set of	svcSvp (svc) sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(svcSvp, sourceSpvcSpvp, transitSpvcSpvp)

ATTRIBUTE ARtg Pnni Reroute localPathOptimizationSubscr (IPathOpt)

Access	Read and write
Description	This attribute specifies which connection segments request subscription to local path optimization. This attribute only affects connection segments

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that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified type(s) which request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified type(s) which request ***localEbr*** request subscription to the local path optimization. Only one will be granted.

One or more of the following values can be specified:
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib	AtmRouting
Set of	svcSvp (svc) sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(svcSvp, sourceSpvcSpvp, transitSpvcSpvp)

ATTRIBUTE ARtg Pnni Reroute globalConnectionRecoverySubscr (gConRec)

Access	Read and write
Description	This attribute specifies which connection segments request subscription to global or Ebr connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified type(s) which request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified type(s) which request ***EbrOnly*** protocol request subscription to EBR connection recovery. Connection segments of the specified type(s) which request ***localEbr*** request subscription to the EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to global or EBR connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

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transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib — AtmRouting

Set of — svcSvp (svc)
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (svcSvp, sourceSpvcSpvp, transitSpvcSpvp)

ATTRIBUTE ARtg Pnni Reroute **globalPathOptimizationSubscr (gPathOpt)**

Access — Read and write

Description — This attribute specifies which connection segments request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified type(s) which request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified type(s) which request ***ebrOnly*** protocols request subscription to EBR path optimization.

Connection segments of the specified type(s) which request ***localEbr*** request subscription to the EBR path optimization. Only one is granted.

One or more of the following values can be specified:
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib — AtmRouting

Set of — svcSvp (svc)
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (svcSvp, sourceSpvcSpvp, transitSpvcSpvp)

ATTRIBUTE ARtg Pnni Reroute **optimizationTime (optTime)**

Access — Read and write

Description — This attribute specifies the times at which a module optimization pass occurs. A maximum of 12 times can be specified. If no times are

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	provisioned, then the module optimization pass only occurs when triggered manually using the *Optimize* verb.
Mib	AtmRouting
List of	Time (HM)
List Size	12
Default	No default

GROUP ARtg Pnni Reroute Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *ARtg Pnni Reroute* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Reroute optimizationState (state)

Access	Read only
Description	This attribute indicates the current state of module optimization. One of the following values is indicated: ***idle:*** There is no module optimization pass currently in progress. The next pass will occur at the next available time specified by the *optimizationTime* attribute, or when the operator issues the *Optimize* command against this component. ***active***: A module optimization pass is in progress and the module is attempting to optimize eligible connections.
Mib	AtmRouting
Values	idle active
Default	No default

ATTRIBUTE ARtg Pnni Reroute optimizationProgress (progress)

Access	Read only
Description	This attribute indicates the percentage of eligible interfaces that have been sent an optimization request as part of a module optimization pass. This value is reset to zero at the beginning of each module optimization pass.
Mib	AtmRouting
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE ARtg Pnni Reroute pathsOptimized

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Access	Read only
Description	This attribute indicates how many paths have been successfully optimized during the latest module optimization pass. Successfully optimized paths are paths that switched to a better route. This value is reset to zero at the beginning of each module optimization pass.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

COMPONENT ARtg PhysicalPort (Port)

Instance	Decimal (0..4294967295)
Groups	GROUP ARtg Port Operational (Oper)
Scope	Device
Description	*ARtg PhysicalPort/<n>* This component represents a port on this node within the ATM routing domain. The index is the port ID used to uniquely identify this port.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Port Operational (Oper)

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

ATTRIBUTE ARtg Port componentName

Access	Read: All Write: Illegal
Description	This attribute indicates the component name of the port.
Mib	AtmRouting
Values	The name of the component
Default	No default

COMPONENT ARtg SparedServices (SpServ)

Groups	GROUP ARtg SpServ Provisioned (Prov) GROUP ARtg SpServ OsiState (State)
Scope	Device

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Description	*ARtg SparedServices* This component represents the Hitless ATM Routing capability. This capability reduces the length of routing outage during CP switchover and Hitless Software Migration.
Mib	AtmSparedServices
Common Verbs	Help List Display

GROUP ARtg SpServ Provisioned (Prov)

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

ATTRIBUTE ARtg SpServ sparing

Access	Read: All Write: All
Description	This attribute specifies the administrative state of ATM Spared Services. When this attribute is set to ***enabled***, the ATM routing system on the CP is hot-spared, resulting in a reduced ATM routing outage during CP switchover and Hitless Software Migration. This attribute may be set to ***enabled*** only if the *shelf cpEquipmentProtection* attribute is set to ***hot*** and the *prov journaling* attribute is set to ***enabled***. When the value of this attribute is changed from ***enabled*** to ***disabled***, the standby CP restarts.
Mib	AtmSparedServices
Values	disabled enabled
Default	disabled

GROUP ARtg SpServ OsiState (State)

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

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

Mib — AtmSparedServices

ATTRIBUTE ARtg SpServ adminState (osiAdmin)

Access — Read only

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

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

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

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

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — AtmSparedServices

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

Default — unlocked

ATTRIBUTE ARtg SpServ operationalState (osiOper)

Access — Read only

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

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

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

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — AtmSparedServices

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Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE ARtg SpServ usageState (osiUsage)

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

ATTRIBUTE ARtg SpServ availabilityStatus (osiAvail)

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

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

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

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

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

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

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

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

Mib — AtmSparedServices

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

Default — No default

ATTRIBUTE ARtg SpServ proceduralStatus (osiProc)

Access — Read only

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

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

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

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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

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

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

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

ATTRIBUTE ARtg SpServ controlStatus (osiCntrl)

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

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

Mib — AtmSparedServices

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

Default — No default

ATTRIBUTE ARtg SpServ alarmStatus (osiAlarm)

Access — Read only

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

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

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

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

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

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

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

Mib — AtmSparedServices

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

Default — No default

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ATTRIBUTE ARtg SpServ standbyStatus (osiStby)

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

ATTRIBUTE ARtg SpServ unknownStatus (osiUnknw)

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

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - ARtg

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Components Reference - Atmlf

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COMPONENT AtmInterface (AtmIf)

Instance	Decimal (1..4095)
Groups	GROUP AtmIf CustomerIdentifierData (CidData) GROUP AtmIf Provisioned (Prov) GROUP AtmIf Loopback (Lbk) GROUP AtmIf OsiState (State) GROUP AtmIf Operational (Oper) GROUP AtmIf Statistics (Stats)

COLLECTED STATS AtmInterface

Scope	Device
Description	*AtmInterface/n* An *AtmIf* component is provisioned for each ATM interface. It manages the set of ATM connections that terminate at or traverse the interface.
Mib	AtmCore
Subcomponents	COMPONENT AtmIf ConnectionAdministrator (CA) COMPONENT AtmIf PerformanceMonitoring (Pm)
Opt. Subcomp.	COMPONENT AtmIf UserNetworkInterface (Uni) COMPONENT AtmIf Iisp COMPONENT AtmIf NailedUpAccounting (NAcct) COMPONENT AtmIf VirtualPathTerminator (Vpt) COMPONENT AtmIf EmissionPriority (Ep) COMPONENT AtmIf LinkTxUtilization (Ltu) COMPONENT AtmIf Aini COMPONENT AtmIf Pnni
Opt. Subcomp.	COMPONENT AtmIf ConnectionMapping (ConnMap) COMPONENT AtmIf VirtualPathConnection (Vpc) COMPONENT AtmIf VirtualChannelConnection (Vcc)
Common Verbs	Help List Display Add DELete

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GROUP AtmIf CustomerIdentifierData (CidData)

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

ATTRIBUTE AtmIf customerIdentifier (cid)

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

GROUP AtmIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *AtmIf* component.
Mib	AtmCore

ATTRIBUTE AtmIf interfaceName

Access	Read and write
Criticality	Process
Description	This attribute associates the *AtmIf* component with a specific interface on a Function Processor—for example, *Lp/1 Ds3/0*. This implicitly defines the logical processor on which the *AtmIf* component is activated.
Mib	AtmCore
Values	Link (Hardware, applicationFramerName)

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Default	No default

ATTRIBUTE Atmlf oamSegmentBoundary (sb)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the interface is on an OAM segment boundary. When the value is ***yes***, the interface is on an OAM segment boundary and all connections passing through the interface terminate OAM segment cells. When the value is ***no***, the interface is not on an OAM segment boundary and the interface permits segment OAM cells to be passed transparently.
Mib	AtmCore
Values	no yes
Default	yes

ATTRIBUTE Atmlf maxVpiBits (vpiBits)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of VPI bits that may be active for this *AtmIf* component. These bits start at the least significant bit position and are contiguous. In general, the maximum VPI which may be used on the interface is 2***maxVpiBits* - 1. The value of the remaining (inactive) VPI bits is ignored on cells received from the link. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute must be ***8***. The maximum VPI supported is 255. For all other cards, the value of this attribute may be ***8*** or ***12***. The maximum VPI supported is 4095. An exception is for the ***8pE1Atm***, and ***8pDS1Atm*** cards, which do not support VPI 4095. The maximum VPI supported on these cards is 4094. If a *Uni* or an *Iisp* component is present directly under the *AtmIf* component, the value of this attribute must be ***8***.
Mib	AtmCore
Values	Decimal (8; 12)
Default	8

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ATTRIBUTE AtmIf remoteAtmInterfaceLabel (remoteAtmIf)

Access	Read and write
Description	This attribute specifies a unique indication of the remote ATM service or interface component connected to this one. The value of this attribute can be used by network management applications to discover the network's ATM topology from its configuration information. The syntax of the value, such as component ID, address, or other numerical identifier, must follow the conventions of the network management platform. In absence of such convention or platform, the value should be left empty. The value is only stored by the module. It is neither validated nor used to perform any form of remote connectivity validation.
Mib	AtmCore
Values	String (0..60, ASCII)
Default	""

ATTRIBUTE AtmIf txCellMemory

Access	Read and write
Criticality	Component
Description	This attribute specifies the percentage of total transmit cell memory which is available for use by connections under this *AtmIf* component. Transmit cell memory is used for storing ATM cells to be transmitted by connections under this *AtmIf* component. This attribute is not applicable, and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. If the value of this attribute is ***100***, connections under this *AtmIf* may use up to 100% of the total transmit cell memory. If the value of this attribute is less than ***100***, then only that percentage of the total transmit cell memory may be used by connections under this *AtmIf* component. The minimum value for this attribute is ***1*** since some cell memory is always required for connections. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, the total transmit cell memory is indicated in the *Lp/x Eng Arc Aqm/x txCellMemoryThresholds* 0 attribute. For ***3pDS3Atm2***, ***3pE3Atm2***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***12pDS3Atm***, and ***12pE3Atm*** cards, the total transmit cell memory of an *Aqm*

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component is shared across multiple *AtmIf* interfaces of the card. Specifying a value of ***100*** for each *AtmIf* enables complete overbooking of the total transmit cell memory by the *AtmIf* components which share the *Aqm* component. Specifying values for this attribute such that the value for each *AtmIf* is less than ***100*** but the sum for all *AtmIf* components is more than 100% enables partial overbooking of the transmit cell memory. Specifying values for this attribute such that the sum for all *AtmIf* components is exactly 100%, ensures that each *AtmIf* has a dedicated pool of transmit cells with no overbooking. Specifying values for this attribute such that the sum for all *AtmIf* components is less than 100% restricts the total size of the free list. This can be used to ensure the functioning of port aggregation even with a small number of connections.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, and ***4pOC3SmIrAtm*** cards, the total transmit cell memory of an *Aqm* component is dedicated to a single *AtmIf* interface of the card. Specifying a value for this attribute that is less than ***100*** restricts the total size of the free list. This can be used to ensure the functioning of port aggregation even with a small number of connections.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the total transmit cell memory is indicated in the *Lp/x Eng Arc txCellMemoryThresholds* 0 attribute. The total transmit cell memory of the *Arc* component is shared across all *AtmIf* interfaces of the card. Specifying a value of ***100*** for each *AtmIf* enables complete overbooking of the total transmit cell memory by the *AtmIf* components. Specifying values for this attribute such that the value for each *AtmIf* is less than ***100*** but the sum for all *AtmIf* components is more than 100% enables partial overbooking of the transmit cell memory. Specifying values for this attribute such that the sum for all *AtmIf* components is exactly 100%, ensures that each *AtmIf* has a dedicated pool of transmit cells with no overbooking. Specifying values for this attribute such that the sum for all *AtmIf* components is less than 100% restricts the total size of the free list. The attribute value does not affect the transmit cell memory allocated for common queues used by any of the service categories.

Mib	AtmCore
Values	Decimal (1..100)
Units	%
Default	100

ATTRIBUTE AtmIf faultHoldOffTime (faultHOT)

Access	Read and write
Description	This attribute specifies the delay before faults detected at the VP layer are propagated to the VC layer, and thus to the application using the connection. If the value is ***0***, applications using a *VirtualPathTerminator* component are

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immediately notified of faults detected by the VP. Using this value allows these applications to be advised of faults without requiring loopbacks on each *Vcc* component. Typically, the application goes out of service when advised of a fault.

If the value is ***infinity***, applications using a *VirtualPathTerminator* component are not notified of VP layer faults. Using this value allows the applications to survive transient VP layer fault conditions.

The value chosen applies only to Vpts and Vccs directly beneath a *Vpt*.

Mib — AtmCore

Values
0
infinity

Default — infinity

ATTRIBUTE Atmlf ctdCalculation (ctdCalc)

Access — Read and write

Description — This attribute specifies whether cell transfer delay calculation should be performed on loopback cells for each SPVC and SPVP connection under this interface.

Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

Cell transfer delay calculation is only supported when segment switch side loopback is enabled on the source segment endpoint. Cell transfer delay calculation is only performed on supported connections when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. Cell transfer delay calculation is not provided for connections under the *Vpt*.

Attribute value *version2on* is currently not supported. To enable cell transfer delay calculation, value *version1on* should be used.

Mib — AtmCore

Values
off
version1on (on)
version2on

Default — off

ATTRIBUTE Atmlf txCellDiscardThreshold

Access — Read and write

Description — This attribute specifies the threshold for a minor alarm for discarded outgoing cells for all ATM services.

If the count of discarded outgoing cells is greater than the provisioned

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value of this attribute in a 15 minute interval, the alarm is set.

While the alarm is set, if the count of discarded outgoing cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded outgoing cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded outgoing cells are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards.

This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.

Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf txFrameDiscardThreshold

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded outgoing frames for all ATM services. If the count of discarded outgoing frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded outgoing frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded outgoing frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded outgoing frames are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards.

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Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf rxCellDiscardThreshold

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded incoming cells for all ATM services. If the count of discarded incoming cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded incoming cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded incoming cells are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards. This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf rxFrameDiscardThreshold

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded incoming frames for all ATM services. If the count of discarded incoming frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded incoming frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded

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outgoing frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded incoming frames are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards.

Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

GROUP Atmlf Loopback (Lbk)

Properties	Provisioned
Description	This group contains the default loopback attribute values for all *Vcc, Vpc, and Vpt* components. Note that these attribute values can be overridden by setting different values in the *Vcd* component of a provisioned *Vcc* component, or the *Vpd* component of a provisioned *Vpc* or *Vpt* component. Certain loopback requests may not be possible on a given connection. In such cases, the value of the corresponding operational loopback attribute in the *AtmStatus* group of the *Vcc*, *Vpc,* or *Vpt* component is ***notApplicable*** and the requested loopback is not performed.
Mib	AtmCore

ATTRIBUTE Atmlf segLinkSideLoopback (segLkLbk)

Access	Read and write
Description	This attribute specifies the default value for link-side segment loopback insertion for all connections under this interface. Link-side segment loopback is not possible if the value of the *oamSegmentBoundary* attribute of the *AtmIf* component is ***no***.
Mib	AtmCore
Values	on off
Default	off

ATTRIBUTE Atmlf segSwitchSideLoopback (segSwLbk)

Access	Read and write

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Description	This attribute specifies the default value for switch-side segment loopback insertion for all connections under this interface. Switch-side segment loopback is not possible if the value of the *oamSegmentBoundary* attribute of the *AtmIf* component is ***no***.
Mib	AtmCore
Values	on off
Default	off

ATTRIBUTE Atmlf endToEndLoopback (eeLbk)

Access	Read and write
Description	This attribute specifies the default value for end-to-end loopback insertion for all connections under this interface. End-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectionEndPoint***. End-to-end loopback insertion is always possible on a *Vpt* component.
Mib	AtmCore
Values	on off
Default	off

GROUP Atmlf OsiState (State)

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

ATTRIBUTE Atmlf adminState (osiAdmin)

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

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

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

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: AtmCore

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

Default: unlocked

ATTRIBUTE Atmlf operationalState (osiOper)

Access: Read only

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

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

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

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: AtmCore

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Atmlf usageState (osiUsage)

Access: Read only

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

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	AtmCore
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Atmlf availabilityStatus (osiAvail)

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

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always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

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

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

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

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

ATTRIBUTE Atmlf proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some

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processing operation and is notifying the results. The *operationalState* is ***enabled***.

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

Mib — AtmCore

Set of
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Atmlf controlStatus (osiCntrl)

Access — Read only

Description

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

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

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

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

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

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

Mib — AtmCore

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

Default — No default

ATTRIBUTE Atmlf alarmStatus (osiAlarm)

Access — Read only

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Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	AtmCore
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Atmlf standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

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The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: AtmCore

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE AtmIf unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: AtmCore

Values:
false
true

Default: false

GROUP AtmIf Operational (Oper)

Properties: Operational

Description: This group contains operational attributes which show the status of the *AtmIf* component.

Mib: AtmCore

ATTRIBUTE AtmIf txCellMemoryCongestionState (txCellCcState)

Access: Read only

Description: This attribute indicates the congestion state of the transmit cell memory for this *AtmIf* component. The congestion state is used to determine if cells of a particular discard priority are discarded or queued for transmit.

This attribute is not applicable and is not displayed for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

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The congestion state of transmit cell memory is indicated by a numeric value ranging from ***3*** to ***0***. A value of ***3*** indicates no congestion and a value of ***0*** indicates maximum congestion. When transmit cell memory is in congestion state “x”, traffic with discard priority greater than “x” is discarded. Traffic with discard priority less than “x” may be queued for transmit, depending on the congestion level of the connection transmit queue. Traffic with discard priority equal to “x” may either be queued or discarded depending on how close the value of the *txCellMemoryUsage* attribute is to the next threshold as indicated by the value of the *txCellMemoryThreshold* attribute. For example, discard priority 3 traffic is queued until the value of the *txCellMemoryUsage* attribute equals the value of the *txCellMemoryThreshold* 3 attribute. At that point, discard priority 3 traffic is discarded.

This attribute indicates which *txCellMemoryThreshold* attribute corresponds to the current value of the *txCellMemoryUsage* attribute.

Mib	AtmCore
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Atmlf txCellMemoryUsage

Access	Read only
Description	This attribute indicates the current number of cells that are stored in transmit cell memory for this *AtmIf* component. Transmit cell memory is used for storing ATM cells to be transmitted by connections under this *AtmIf* component. This attribute is not applicable and is not displayed for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, the value of this attribute includes all cells for nrt-VBR, and UBR connections. It also includes cells for CBR, and rt-VBR connections which are doing per-VC queuing. It does not include cells for CBR, or rt-VBR connections that are doing common queuing. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the value of this attribute only includes cells used by per-connection queues of all service categories. The attribute value does not include the transmit cell memory consumed by common queues for any of the service categories. Each emission priority also has a minimum buffer space reserved, which may be used by the per connection queues. The cells occupying this minimum buffer space will not be counted as part of this attribute.

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Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE Atmlf txCellMemoryThreshold

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for transmit cell memory for this *AtmIf* component. Transmit cell memory used for storing ATM cells to be transmitted by connections under this *AtmIf* component. This attribute is not applicable and is not displayed for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. The threshold 0 value indicates the transmit cell memory size. It is the multiplication of the total transmit cell memory by the value of the *txCellMemory* attribute of this *AtmIf* component. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, the threshold 1 value is set at approximately 90 percent of the threshold 0 value. The threshold 2 value is set at approximately 85 percent of the threshold 0 value. The threshold 3 value is set at approximately 75 percent of the threshold 0 value. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the threshold 1 value is set at approximately 90 percent of the threshold 0 value. The threshold 2 value is set at approximately 80 percent of the threshold 0 value. The threshold 3 value is set at approximately 60 percent of the threshold 0 value. The current value of the *txCellMemoryUsage* attribute together with the vector of values in the *txCellMemoryThreshold* attribute determines the value of the *txCellMemoryCongestionState* attribute. The congestion state determines whether cells of a given discard priority are discarded or queued for transmit. When the value of the *txCellMemoryUsage* attribute is between the threshold 0 and threshold 1 values, the value of the *txCellMemoryCongestionState* attribute is ***0***. In congestion state 0, traffic with discard priority greater than 0 is discarded. When the value of the *txCellMemoryUsage* attribute is between the threshold 1 and threshold 2 values, the value of the

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txCellMemoryCongestionState attribute is ***1***. In congestion state 1, traffic with discard priority greater than 1 is discarded.

When the value of the *txCellMemoryUsage* attribute is between the threshold 2 and threshold 3 values, the value of the *txCellMemoryCongestionState* attribute is ***2***. In congestion state 2, traffic with discard priority greater than 2 is discarded.

When the value of the *txCellMemoryUsage* attribute is below the threshold 3 value, the value of the *txCellMemoryCongestionState* attribute is ***3***. In congestion state 3, all traffic is queued for transmit.

Mib	AtmCore
Vector of	Decimal (0..4294967295)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Atmlf opShapingRates

Access	Read only
Description	This attribute indicates the values of the 31 shaping rates currently in use at the interface. It is a vector of 31 elements, each representing a shaping rate value. A shaping rate value of ***0*** means the entry is empty and can be used. This attribute is only applicable to ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. It is not displayed for all other cards.
Mib	AtmCore
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..30)
Default	No default

ATTRIBUTE Atmlf shapeUsage

Access	Read only
Description	This attribute counts the connections that currently use the 31 shaping rates. It is a vector of 31 elements, each representing the number of connections using a particular shaping rate. The value of the shaping rate is indicated in the *opShapingRates* attribute. This attribute is only applicable to ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. It is not displayed for all other cards.

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Mib	AtmCore
Vector of	Decimal (0..163839)
Index	Decimal (0..30)
Default	No default

GROUP AtmIf Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes which keep statistics about the behavior of the *AtmIf* component.
Mib	AtmCore

ATTRIBUTE AtmIf txCell

Access	Read only
Description	This attribute counts cells transmitted from the ATM interface. It does not include cells discarded due to congestion before transmit. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this attribute does not include locally generated AIS cells. Specifically AIS cells generated on the destination side of a SPVC or SPVP will not be included in this attribute, nor will AIS cells generated on the link side of a PVC or PVP.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txCellClp

Access	Read only
Description	This attribute counts cells transmitted from the ATM interface which have the CLP bit set to 1. This count is included in the *txCell* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer

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Default	No default

ATTRIBUTE AtmIf txCellEfci

Access	Read only
Description	This attribute counts cells transmitted from the ATM interface which have the EFCI bit set to 1. This count is included in the *txCell* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txCellDiscard

Access	Read only
Description	This attribute counts cells discarded and not transmitted out the ATM interface. Since cells are discarded before they are transmitted, this count is not included in the *txCell* attribute. This count is independent of the value of the *txFrameDiscard* attribute. This attribute is not applicable and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. This attribute is not supported and is not displayed for ***4pOC12SmIrAtm***, and ***4pOC12SmIrAtm*** cards when channelized. Transmit cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***16pOC3SmIrAtm*** cards, this attribute is updated at the end of every five-minute cycle. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.
Mib	AtmCore

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Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txCellDiscardClp

Access	Read only
Description	This attribute counts cells discarded and not transmitted out the ATM interface which have the CLP bit set to 1. Since cells are discarded before they are transmitted, this count is not included in the *txCellClp* attribute. This count is included in the *txCellDiscard* attribute, but it is independent of the value of the *txFrameDiscardClp* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. Transmit cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txFrameDiscard

Access	Read only
Description	This attribute counts frames discarded and not transmitted out the ATM interface. This count is independent of the value of the *txCellDiscard* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. Transmit frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the number of AAL5 cells discarded is included in the value of the *txCellDiscard* attribute if the frame

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has undergone AAL5 segmentation prior to being discarded.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txFrameDiscardClp

Access	Read only
Description	This attribute counts frames which have at least one cell with the CLP bit set to 1, and have been discarded and not transmitted out the ATM interface. This count is independent of the value of the *txCellDiscard* attribute. This count is included in the *txFrameDiscard* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. Transmit frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the number of AAL5 cells discarded is included in the value of the *txCellDiscard* attribute if the frame has undergone AAL5 segmentation prior to being discarded. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf rxCell

Access	Read only
Description	This attribute counts valid cells received from the ATM interface. Valid cells are any cell with a correct HEC field in the ATM header. This count includes cells which may be subsequently discarded. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***,

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3pDS3Atm2, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, this count includes cells that are received with a VPI.VCI value that does not translate to any connection on the *AtmIf* component. These cells may also be counted in the *droppedRxCell* attribute. The value of this *rxCell* attribute should be greater than or equal to the sum of the *droppedRxCell* attribute and all of the connection *rxCell* attributes under this *AtmIf* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this count does not include cells that are received with a VPI.VCI value that does not translate to any connection on the *AtmIf* component. These cells are counted in the *droppedRxCell* attribute.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm,*** and ***8pE1Atm*** cards, this count will be increased when either a PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or F4 and F5 OAM cells are transmitted.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when a PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down, while be increased when either a SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, if only user traffic is transmitted, this count will not be increased when either a PVC, PVP, SPVC or SPVP connection is down. If F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down, and will be increased when either a SPVC or SPVP connection is down.

For ***16pOC3PosAtm*** card, if only the user traffic is transmitted, this count will be increased when either a PVC, PVP, SPVC or SPVP connection is down. If F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down, and is increased when either a SPVC or SPVP connection is down.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib	AtmCore
Values	Long Integer
Default	No default

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ATTRIBUTE AtmIf rxCellClp

Access	Read only
Description	This attribute counts valid cells received from the ATM interface which have the CLP bit set to 1. Valid cells are any cell with a correct HEC field in the ATM header. This count includes cells which may be subsequently discarded. This count is included in the *rxCell* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, this count includes cells that are received with a VPI.VCI value that does not translate to any connection on the *AtmIf* component. These cells may also be counted in the *droppedRxCell* attribute. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf rxCellEfci

Access	Read only
Description	This attribute counts valid cells received from the ATM interface which have the EFCI bit set to 1. Valid cells are any cell with a correct HEC field in the ATM header. This count includes cells which may be subsequently discarded. This count is included in the *rxCell* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm, 16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, this count includes cells that are received with a VPI.VCI value that does not translate to any connection on the *AtmIf* component. These cells are also counted in the *droppedRxCell* attribute.

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The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf rxCellDiscard

Access	Read only
Description	This attribute counts cells received from the ATM interface which have been discarded. This count is included in the *rxCell* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***16pOC3SmIrAtm*** cards. This attribute is not supported and is not displayed for ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards when channelized. This count includes cells discarded due to non-conformance with UPC, Partial Packet Discard (PPD), Early Packet Discard (EPD), and cells received while the ingress data path is down. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, for connections that reassemble incoming cells into frames, this count also includes cells discarded due to AAL5 frame reassembly error, processor (CPU) congestion, and insufficient frame memory. For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when either a PVC or PVP connection is down, while not be increased when either a SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down, while not be increased when either a SPVC or SPVP connection is down. For***16pOC3PosAtm*** card, if only user traffic is transmitted, this count will not be increased when either a PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down while not be increased when either a SPVC or the SPVP connection is down. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

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Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf rxCellDiscardClp

Access	Read only
Description	This attribute counts valid cells received from the ATM interface that have the CLP bit set to 1, which have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. This count includes cells discarded due to non-conformance with UPC, Partial Packet Discard (PPD), Early Packet Discard (EPD), and cells received while the ingress data path is down. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, for connections that reassemble incoming cells into frames, this count also includes cells discarded due to AAL5 frame reassembly error, processor (CPU) congestion, and insufficient frame memory. This counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf rxFrameDiscard

Access	Read only
Description	This attribute counts frames received from the ATM interface which have been discarded. This count includes the value of the *rxFrameDiscardClp* and *aal5RxErrors* attributes. It is independent of the value of the *rxCellDiscard* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. This count includes frames discarded due to AAL5 frame reassembly error, Early Packet Discard (EPD), processor (CPU) congestion, and

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insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this count does not include frames discarded due to Early Packet Discard (EPD), or insufficient frame memory. It also does not include frames discarded at layer 3. These discards are counted in the layer 3 statistics.

This attribute is applicable only for connections that reassemble incoming cells into frames. Connections that reassemble cells into frames have the value of the *connectionPointType* attribute displayed as ***connectionEndPoint***. AAL1 connections are an exception to this rule; even though they have the value of the *connectionPointType* attribute displayed as ***connectionEndPoint***, they do not do adaptation at this point.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE Atmlf rxFrameDiscardClp

Access — Read only

Description — This attribute counts frames received from the ATM interface which have been discarded and which have at least one cell with the CLP bit set to 1. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscardClp* attribute.

This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

This count includes frames discarded due to AAL5 frame reassembly error, Early Packet Discard (EPD), processor (CPU) congestion, and insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this count does not include frames discarded due to Early Packet Discard (EPD), or insufficient frame memory. It also does not include frames discarded at layer 3. These discards are counted in the layer 3 statistics.

This attribute is applicable only for connections that reassemble incoming cells into frames. Connections that reassemble cells into frames have the value of the *connectionPointType* attribute displayed as ***connectionEndPoint***. AAL1 connections are an exception to this rule;

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even though they have the value of the *connectionPointType* attribute displayed as ***connectionEndPoint***, they do not do adaptation at this point.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf droppedRxCells (drRxCells)

Access	Read only
Description	This attribute counts cells received from the interface that were dropped because they contained a VPI.VCI value that did not translate to any connection on the *AtmIf* component. The VPI and VCI of the last dropped cell are indicated in the *lastDroppedRxCellConnection* attribute. Idle cells and unassigned cells are ignored without being counted as dropped cells. This attribute is not supported and is not displayed on ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, this count is included in the *rxCell* attribute for the interface. The counter is reset to zero when the component is created, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will not be increased when either a PVC or PVP connection is down, while be increased when either a SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will not be increased when either a PVC or PVP connection is down, while be increased when either a SPVC or SPVP connection is down. For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, this count will not be increased when either a PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or F4 and F5 OAM cells are transmitted. For ***16pOC3PosAtm*** card, if only user traffic is transmitted, this count will

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be increased when either a PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this attribute value will not be increased when either a PVC or PVP connection is down while be increased when either a SPVC or SPVP connection is down.

For ***1pOC48ChSmIrAtm*** cards, it is possible that this count may not reset to zero. This is a known occurrence during FP resets that cannot be fixed for this FP. Any additional readings should subtract this initial value to obtain the correct cell dropped value.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf lastDroppedRxCellConnection (lastDropped)

Access	Read only
Description	This attribute indicates the VPI and VCI of the last cell that was dropped. Cells are dropped if they contain a VPI.VCI value that does not translate to any connection on the *AtmIf* component. Dropped cells are counted in the *droppedRxCells* attribute. This attribute is not supported and is not displayed on ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will not be increased when either a PVC or PVP connection is down, while be increased when either a SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this attribute will not be increased when either a PVC or PVP connection is down, and is increased when either a SPVC or SPVP connection is down. For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, this count will not be increased when either a PVC, PVP, SPVC or SPVP connection is down regardless of whether only the user traffic or the F4 and F5 OAM cells are transmitted. For ***16pOC3PosAtm*** card, if only user traffic is transmitted, this count will be increased when either a PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this attribute value will not be increased when either a PVC or PVP connection is down, and is increased when either a SPVC or SPVP connection is down. For ***1pOC48ChSmIrAtm*** cards, this attribute may not reset to 0.0 during card resets or when any critical attribute of the component is changed. It may initially indicate a connection that does not exist.

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Mib	AtmCore
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf aal5RxErrors (aal5Errors)

Access	Read only
Description	This attribute counts AAL5 frame reassembly errors that have occurred on the interface. These errors are either CRC errors, or length errors, possibly caused by discarded cells. This attribute includes the count of AAL5 aborted frames which are also counted in the *aal5RxAborts* attribute. The VPI and VCI of the last connection that exhibited AAL5 reassembly errors are indicated in the *lastAal5ErrorConnection* attribute. This count is included in the *rxFrameDiscard* attribute. The counter is reset to zero when the component is created, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**32)-1***.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf lastAal5RxErrorConnection (lastAal5)

Access	Read only
Description	This attribute indicates the VPI and VCI of the last connection that exhibited AAL5 reassembly errors. These errors are counted in the *aal5RxErrors* attribute.
Mib	AtmCore
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf lrcFrameErrors (lrcErrs)

Access	Read only
Description	This attribute counts egress LRC frame errors on frames received across the bus. The likely cause of these errors is a hardware fault on either the sending or receiving card. The VPI and VCI of the last connection that exhibited LRC errors are indicated in the *lastLrcFrameErrorConnection* attribute. The counter is reset to zero when the component is created, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**32)-1***.
Mib	AtmCore

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf lastLrcFrameErrorConnection (lastLrc)

Access	Read only
Description	This attribute indicates the VPI and VCI of the last connection that had LRC frame errors on frames received across the bus. These errors are counted in the *lrcFrameErrors* attribute.
Mib	AtmCore
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf aal5RxAborts

Access	Read only
Description	This attribute counts AAL5 frame aborts that have occurred on the interface. An AAL5 aborted frame is one in which the AAL5 frame length is zero. The VPI and VCI of the last connection which exhibited AAL5 abort errors are indicated in the *lastAal5RxAbortConnection* attribute. This count is included in *aal5RxErrors* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. The counter is reset to zero when the component is created, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**32)-1***.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf lastAal5RxAbortConnection

Access	Read only
Description	This attribute indicates the VPI and VCI of the last connection that exhibited AAL5 aborts. These aborts are counted in the *aal5RxAborts* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards.
Mib	AtmCore
Values	Integer Sequence (0..4095; 0..65535)

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Default	No default

ATTRIBUTE AtmIf txLinkUtilization (txLink)

Access	Read only
Description	This attribute indicates the current transmit traffic rate over the most recent minute expressed as a percentage of the ATM link bandwidth. This attribute is not supported and is not displayed for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.
Mib	AtmCore
Values	Decimal (0..65535)
Units	%
Default	No default

ATTRIBUTE AtmIf rxLinkUtilization (rxLink)

Access	Read only
Description	This attribute indicates the current receive traffic rate during the most recent minute expressed as a percentage of the ATM link bandwidth. This attribute does not consider cells that are counted by the droppedRxCells attribute, nor idle cells, nor unassigned cells. This attribute is not supported and is not displayed for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.
Mib	AtmCore
Values	Decimal (0..65535)
Units	%
Default	No default

COLLECTED STATS AtmInterface

Description	The statistics record generated by the AtmInterface component.

ATTRIBUTE AtmIf remoteInstance

Description	This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel*.
Values	String (0..60, ASCII)

ATTRIBUTE AtmIf provRate

Description	This attribute indicates the provisioned bandwidth for this ATM interface.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE AtmIf actualRate

Description	This attribute indicates the actual bandwidth for this ATM interface. When no errors occur it has a value equal to *provRate*. When the link (or IMA group) is down for the entire collection interval it has a value of zero. When the link goes down during the collection interval it has a value representing the average bandwidth during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txUtilization

Description	This attribute indicates the average transmit traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%. If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.
Values	Decimal (0..65535)
Units	%

ATTRIBUTE AtmIf rxUtilization

Description	This attribute indicates the average receive traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%. If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.

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Values	Decimal (0..65535)
Units	%

ATTRIBUTE Atmlf txMaxCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txMaxCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txMinCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txMinCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txAvgCellRate

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf txAvgCellRateByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxMaxCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxMaxCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxMinCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxMinCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf rxAvgCellRate

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxAvgCellRateByServiceCat

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txMaxCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txMaxCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txMinCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf txMinCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txAvgCellRateClp

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txAvgCellRateClpByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxMaxCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxMaxCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf rxMinCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxMinCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxAvgCellRateClp

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxAvgCellRateClpByServiceCat

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

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ATTRIBUTE Atmlf txCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf rxCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf txFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval.

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Values	Long Integer

ATTRIBUTE Atmlf rxFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf txCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf rxCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf txFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf txFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf rxFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

COMPONENT Atmlf ConnectionMapping (ConnMap)

Groups	GROUP AtmIf ConnMap Operational (Oper)
Scope	Device
Description	*AtmIf/n ConnectionMapping* The *ConnectionMapping* component is used to view the VCC space supported by an ATM interface on card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***. Only VPI and VCI values that lie within the VCC space may be used for VCC connections. Any VPI values not assigned to the VCC space are, by implication,

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consigned to the VPC space. Only VPI values that lie within the VPC space may be used to support VPC connections.

Mib AtmCore

Subcomponents COMPONENT AtmIf ConnMap Override (Ov)

Common Verbs
Help
List
Display
Add
DELete

GROUP AtmIf ConnMap Operational (Oper)

Properties Operational

Description This group contains operational attributes that indicate the VCC space supported by an ATM interface. The VCC space consists of an optional VPI Zero VCC Space and an optional Programmable VCC Space. Only VPI and VCI values that lie within the VCC space may be used for VCC connections.

The VPI Zero VCC Space is used for VCCs with a VPI of zero. The VCI values in this space range from ***0*** to an optionally provisioned maximum of (*numVccsForVpiZero* - 1).

The Programmable VCC Space is used for VCCs with a VPI other than zero. The VPI values in this space lie in a single contiguous range from *firstNonZeroVpiForVccs* to (*firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). The VCI values in this space range from ***0*** to an optionally provisioned maximum of (*numVccsPerNonZeroVpi* - 1).

Any VPI values not assigned to the VCC space are, by implication, assigned to the VPC space. Only VPI values that lie within the VPC space may be used for VPC connections.

The number of connection resources in the VCC and VPC space (not all of which are available for user connections) must not exceed the maximum value supported by the card.

Mib AtmCore

ATTRIBUTE AtmIf ConnMap numVccsForVpiZero (nZVccs)

Access Read only

Description This attribute indicates the number of VCCs supported for the VPI Zero VCC Space. The VCI values of these VCCs range from ***0*** to *(numVccsForVpiZero* - 1).

For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***,

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3pE1Atm, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***16128.***

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***16384.***

To override the system default, see the *AtmIf ConnMap Ov* attribute *numVccsForVpiZero.*

Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf ConnMap numNonZeroVpisForVccs (nVpis)

Access	Read only
Description	This attribute indicates the number of contiguous VPIs supported in the optional Programmable VCC Space. If the value of the *numNonZeroVpisForVccs* attribute is ***0***, then the Programmable VCC Space does not exist. If the value of the *numNonZeroVpisForVccs* attribute is greater than ***0***, then the Programmable VCC Space exists and covers the VPI values ranging from *firstNonZeroVpiForVccs* to *(firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***255.*** For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***255*** for UNI applications and ***4095*** for NNI applications. To override the system default, see the *AtmIf ConnMap Ov* attribute *numNonZeroVpisForVccs.*
Mib	AtmCore
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE AtmIf ConnMap firstNonZeroVpiForVccs (firstVpi)

Access	Read only
Description	This attribute indicates the initial VPI of the optional Programmable VCC Space. If the value of the *numNonZeroVpisForVccs* attribute is ***0***, then the Programmable VCC Space does not exist and the value of this attribute is

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ignored. If the value of the *numNonZeroVpisForVccs* attribute is greater than ***0***, then the Programmable VCC Space exists and covers the VPI values ranging from *firstNonZeroVpiForVccs* to *(firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1).

For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***240***.

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***255*** for UNI applications and ***4095*** for NNI applications.

To override the system default, see the *AtmIf ConnMap Ov* attribute *firstNonZeroVpiForVccs*.

Mib	AtmCore
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE AtmIf ConnMap numVccsPerNonZeroVpi (nVccs)

Access	Read only
Description	This attribute indicates the number of VCCs supported for each VPI in the Programmable VCC Space. The VCI values of these VCCs range from ***0*** to *(numVccsPerNonZeroVpi* - 1) for each VPI in this space. For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***2048***. For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***16384***. To override the system default, see the *AtmIf ConnMap Ov* attribute *numVccsPerNonZeroVpi*.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256; 512; 1024; 2048; 4096; 8192; 16384)
Default	No default

COMPONENT AtmIf ConnMap Override (Ov)

Groups	GROUP AtmIf ConnMap Ov Provisioned (Prov)
Scope	Device
Description	*AtmIf/n ConnMap Override* The *Override* component is used to specify the VCC space to be

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supported on an ATM interface on card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***. Only VPI and VCI values that lie within the VCC space may be used for VCC connections.

Any VPI values not assigned to the VCC space are, by implication, consigned to the VPC space. Only VPI values that lie within the VPC space may be used for VPC connections.

This component is used to override the default values used for the parent *ConnectionMapping* component.

Mib: AtmCore

Common Verbs: Help, List, Display

GROUP AtmIf ConnMap Ov Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes which specify the VCC space to be supported by this ATM interface. The VCC space consists of an optional “VPI Zero VCC Space” and an optional “Programmable VCC Space”. Only VPI and VCI values that lie within the VCC space may be used for VCC connections.

Any VPI values not assigned to the VCC space are, by implication, assigned to the VPC space. Only VPI values that lie within the VPC space may be used for VPC connections.

In order to allow SVCs to be established within the “Programmable VCC space”, the VPI selection must be within the range defined by the *minAutoSelectedVpi* attribute value and the *maxAutoSelectedVpi* attribute value under *AtmIf CA* component.

For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the values of all attributes provisioned in this group must adhere to the following rules:

The VPI Zero VCC Space is used for VCCs with a VPI of zero. The VCI values supported in this space range from ***0*** to an optionally provisioned maximum of (*numVccsForVpiZero* - 1).The value of the *numVccsForVpiZero* attribute must either be ***0*** or a multiple of 256 up to a maximum value of ***16128***. A value of ***0*** implies that no programmable VCCs can be used. In this case, the value of the *numNonZeroVpisForVccs* attribute must also be ***0***.

The Programmable VCC Space is used for VCCs with a VPI other than

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zero. The VPI values in this space lie in a single contiguous range from *firstNonZeroVpiForVccs* to (*firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). The VCI values in this space range from ***0*** to an optionally provisioned maximum of (*numVccsPerNonZeroVpi* - 1). The Programmable VCC Space (should it exist) must adhere to the following rules:

The value of the *firstNonZeroVpiForVccs* attribute must either be ***1*** or a non-zero multiple of 16, up to a maximum value of ***240***.

If *(firstNonZeroVpiForVccs* = 1) THEN
(*numNonZeroVpisForVccs* + 1) * *numVccsPerNonZeroVpi*
must be a multiple of 256
OTHERWISE
numNonZeroVpisForVccs * *numVccsPerNonZeroVpi*
must be a multiple of 256

The number of connection resources in the VCC and VPC space must not exceed the capacity of the port to which the interface is linked. If the *Lp* component has an *Eng Arc Cqc Ov* component provisioned with a non-zero *connectionPoolCapacity* attribute, then the port's capacity is specified by this attribute. Otherwise the port's capacity is indicated by the value of the *Lp/n Eng Arc connectionPoolAvailable* attribute divided by the number of physical ports on the card.

The number of connection resources in the VCC and VPC space can be determined as follows:

IF (*numNonZeroVpisForVccs* = 0) THEN
number of connection resources =
256 + numVccsForVpiZero
OTHERWISE IF (*firstNonZeroVpiForVccs* = 1) THEN
number of connection resources =
256 + numVccsForVpiZero +
(*numNonZeroVpisForVccs* + 1) * *numVccsPerNonZeroVpi*
OTHERWISE
number of connection resources =
256 + *numVccsForVpiZero* +
(*numNonZeroVpisForVccs* * *numVccsPerNonZeroVpi*)

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the values of all attributes provisioned in this group must adhere to the following rules:

The VPI Zero VCC Space is used for VCCs with a VPI of zero. The VCI values supported in this space range from ***0*** to an optionally provisioned maximum of (*numVccsForVpiZero* - 1).The value of *numVccsForVpiZero* attribute must either be ***1*** or a power of 2.

The Programmable VCC Space is used for VCCs with a VPI other than zero. The VPI values in this space lie in a single contiguous range from

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firstNonZeroVpiForVccs to (*firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). The VCI values in this space range from ***0*** to an optionally provisioned maximum of (*numVccsPerNonZeroVpi* - 1). The VPI values in this space must not exceed ***255*** for UNI applications and ***4095*** for NNI applications.

For the ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards, the number of connection resources in the VCC and VPC space must not exceed the capacity of the port to which the interface is linked. The port's capacity is the physical maximum of 113664 connection resources.

For the ***16pOC3SmIrAtm*** card, the total number of connection resources in the VCC and VPC space must not exceed 113664 for each of the four port groupings on the card. Each port grouping consists of ATM interfaces linked to ports 0-3, 4-7, 8-11, and 12-15.

The number of connection resources in the VCC and VPC space can be determined as follows:

For UNI applications the number of connection resources = *numVccsForVpiZero* + (*numNonZeroVpisForVccs * numVccsPerNonZeroVpi*) + 2 * (255 - *numNonZeroVpisForVccs*)

For NNI applications the number of connection resources = *numVccsForVpiZero* + (*numNonZeroVpisForVccs * numVccsPerNonZeroVpi*) + 2 * (4095 - *numNonZeroVpisForVccs*)

Mib — AtmCore

ATTRIBUTE **AtmIf ConnMap Ov** **numVccsForVpiZero (nZVccs)**

Access — Read and write

Criticality — Process

Description — This attribute specifies the number of VCCs supported for the VPI Zero VCC Space. The VCI values of these VCCs range from ***0*** to *(numVccsForVpiZero* - 1).

A value of ***autoConfigure*** means an appropriate value is selected based on the card type.

For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the default value of this attribute is ***768*** and the maximum value is ***16128***.

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the default value of this attribute is ***1024*** and the maximum value is ***16384***.

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The values of all attributes provisioned in this group must adhere to the guidelines laid down in the description of the *Provisioned* group.

Mib	AtmCore
Values	Decimal (0..16384) autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf ConnMap Ov **numNonZeroVpisForVccs (nVpis)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of contiguous VPIs supported in the optional Programmable VCC Space. If the value of the *numNonZeroVpisForVccs* attribute is ***0***, then the Programmable VCC Space does not exist. If the value of the *numNonZeroVpisForVccs* attribute is greater than ***0***, then the Programmable VCC Space exists and covers the VPI values ranging from *firstNonZeroVpiForVccs* to *(firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***255***. For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***255*** for UNI applications and ***4095*** for NNI applications. The values of all attributes provisioned in this group must adhere to the guidelines laid down in the description of the *Provisioned* group.
Mib	AtmCore
Values	Decimal (0..4095)
Default	0

ATTRIBUTE AtmIf ConnMap Ov **firstNonZeroVpiForVccs (firstVpi)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the initial VPI of the optional Programmable VCC Space. If the value of the *numNonZeroVpisForVccs* attribute is ***0,*** then the Programmable VCC Space does not exist and the value of this attribute is

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ignored. If the value of the *numNonZeroVpisForVccs* attribute is greater than ***0***, then the Programmable VCC Space exists and covers the VPI values ranging from *firstNonZeroVpiForVccs* to *(firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). This range must be within the range defined by *minAutoSelectedVpi* attribute value and the *maxAutoSelectedVpi* attribute value under *AtmIf CA* component.

For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***240***.

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***255*** for UNI applications and ***4095*** for NNI applications.

The values of all attributes provisioned in this group must adhere to the guidelines laid down in the description of the *Provisioned* group.

Mib — AtmCore

Values — Decimal (1..4095)

Default — 1

ATTRIBUTE AtmIf ConnMap Ov **numVccsPerNonZeroVpi (nVccs)**

Access — Read and write

Criticality — Process

Description — This attribute specifies the number of VCCs supported for each VPI in the Programmable VCC Space. The VCI values of these VCCs range from ***0*** to *(numVccsPerNonZeroVpi* - 1) for each VPI in this space.

For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***2048***.

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***16384***.

The values of all attributes provisioned in this group must adhere to the guidelines laid down in the description of the *Provisioned* group.

Mib — AtmCore

Values — Decimal (2; 4; 8; 16; 32; 64; 128; 256; 512; 1024; 2048; 4096; 8192; 16384)

Default — 64

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COMPONENT AtmIf ConnectionAdministrator (CA)

Groups	GROUP AtmIf CA Provisioned (Prov) GROUP AtmIf CA Operational (Oper) GROUP AtmIf CA PmInfo (Pm)
Scope	Device
Description	*AtmIf/n ConnectionAdministrator* This component controls connection admission and reports statistics about the ATM connections which have been admitted on this ATM interface.
Mib	AtmCore
Subcomponents	COMPONENT AtmIf CA ConstantBitRate (Cbr) COMPONENT AtmIf CA RealTimeVariableBitRate (RtVbr) COMPONENT AtmIf CA NonRealTimeVariableBitRate (NrtVbr) COMPONENT AtmIf CA AvailableBitRate (Abr) COMPONENT AtmIf CA UnspecifiedBitRate (Ubr)
Common Verbs	Help List Display

GROUP AtmIf CA Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which specify the behavior of Connection Admission Control (CAC) for the ATM connections configured on an ATM interface. Note that the names of some of the attributes follow the conventions of UNI 4.0 for forward compatibility reasons. This does not imply conformance in general with the UNI 4.0 specification.
Mib	AtmCore

ATTRIBUTE AtmIf CA maxVccs (vccs)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of VCCs (and *Vpt* VCCs) that can be activated on this *AtmIf* component. For ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute must not exceed the number of *Vcc* identifiers in the *Vcc* space supported by this *AtmIf* component (which is specified by the *AtmIf ConnectionMapping* component). For cards other than ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm***, the sum of

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(*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all spared *AtmIf*s linked to an *Lp* must not exceed the value of the *protectedConnectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. The sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all unspared *AtmIf*s linked to an *Lp* must not exceed the value of the *connectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. Note that 3 connections are used for every standard *Vpt* component and 2 for each basic *Vpt* component. If the *Lp Eng Arc Ov* component is not provisioned, the default values of the *connectionPoolCapacity* and *protectedConnectionPoolCapacity* attributes are used as the limit.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***2pSTM1eCh***, ***2pSTM1Ch*** and MSA32 cards, the value is ***100***. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, the value is ***127***. For all other cards, the value is ***255***.

Mib	AtmCore
Values	Decimal (0..16384) autoConfigure
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA minMulticastBranches (minMcast)

Access	Read and write
Criticality	Process
Description	This attribute specifies the guaranteed number of switched multicast branches that can be activated on this *AtmIf* component, including those activated beneath a *Vpt* component. For all spared *AtmIfs* linked to an *Lp*, the number of *minMulticastBranches* plus the number of branches consumed by all *Msrcs* plus the number of provisioned branches listed in the *nextHop* attribute of all *Mnrps* must not exceed the value of the *protectedMcstBranchesCapacity* attribute of the *Lp Eng Arc Ov* component. For all unspared *AtmIfs* linked to an *Lp*, the number of *minMulticastBranches* plus the number of branches consumed by all *Msrcs* plus the number of provisioned branches listed in the *nextHop* attribute of all *Mnrps* must not exceed the value of the *multicastBranchesCapacity* attribute of the *Lp Eng Arc Ov* component. If the value of the *minMulticastBranches* attribute is non zero, the *Lp Eng Arc Ov* component must exist and have a *multicastBranchesCapacity* attribute, or the *protectedMcstBranchesCapacity* attribute set to a value greater than or equal to the *minMulticastBranches* attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***,

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3pDS1Atm, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of the attribute can not exceed ***10752***.

Mib	AtmCore
Values	Decimal (0..16384)
Default	0
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA maxMulticastBranches (maxMcast)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of provisionable multicast branches that can be activated on this *AtmIf* component, including those activated beneath a *Vpt* component. If the value of this attribute is not ***autoConfigure***, it must be greater than or equal to the value of the *minMulticastBranches* attribute of this *AtmIf* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute can not exceed ***10752***. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value is ***10752***. For all other cards, the value is ***16384***.
Mib	AtmCore
Values	Decimal (1..16384) autoConfigure
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA minAutoSelectedVciForVpiZero (minVciVpiZero)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum VCI value which is automatically allocated for a switched *Vcc* with VPI value of zero. A VCI number is automatically allocated when a switched *Vcc* does not request a specific VCI number. This value also applies to switched VCCs created beneath *Vpt/0*.

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Mib	AtmCore
Values	Decimal (0..65535)
Default	32
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum VCI value which is automatically allocated for a switched *Vcc* with a non-zero VPI value. A VCI number is automatically allocated when a switched *Vcc* does not request a specific VCI number. This value also applies to switched VCCs created beneath a *Vpt* component.
Mib	AtmCore
Values	Decimal (5..65535)
Default	32
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA maxVpcs (vpcs)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of *VPC* components that can be activated on this *AtmIf* component. For cards other than ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm***, the sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all spared *AtmIf*s linked to an *Lp* must not exceed the value of the *protectedConnectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. The sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all unspared *AtmIf*s linked to an *Lp* must not exceed the value of the *connectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. Note that 3 connections are used for every standard *Vpt* component and 2 for each basic *Vpt* component. If the *Lp Eng Arc Ov* component is not provisioned, the default values of the *connectionPoolCapacity* and *protectedConnectionPoolCapacity* attributes are used as the limit. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***4pMRPosAtm***, and MSA32 cards, the value is ***16***. For all other cards, the value is ***128***.
Mib	AtmCore

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Values	Decimal (0..4096) autoConfigure
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA **maxVpts (vpts)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of *Vpt* components that can be activated on this *AtmIf* component. For cards other than ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm***, the sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all spared *AtmIf*s linked to an *Lp* must not exceed the value of the *protectedConnectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. The sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all unspared *AtmIf*s linked to an *Lp* must not exceed the value of the *connectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. Note that 3 connections are used for every standard *Vpt* component and 2 for each basic *Vpt* component. If the *Lp Eng Arc Ov* component is not provisioned, the default values of the *connectionPoolCapacity* and *protectedConnectionPoolCapacity* attributes are used as the limit. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***4pMRPosAtm***, and MSA32 cards, the value is ***16***. For all other cards, the value is ***128***.
Mib	AtmCore
Values	Decimal (0..4096) autoConfigure
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA **minAutoSelectedVpi (minVpi)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum VPI value which will be automatically allocated for a switched *Vpc* or *Vcc* component. A VPI number is automatically allocated when a switched *Vpc* or *Vcc* component does not request a specific VPI number.
Mib	AtmCore

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Values	Decimal (1..4095)
Default	1
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA permittedAtmServiceCategories (permitCat)

Access	Read and write
Criticality	Process
Description	This attribute specifies which ATM service categories are permitted on this interface for SVPs and SVCs. The value of this attribute does not affect control VCCs, such as signaling and ILMI channels. If the value is empty, no non-control SVPs, or SVCs will use this interface. This attribute is ignored for the admission of provisioned VCCs, VPCs, VPTs, S-PVCs, and S-PVPs. The value of the *permittedAtmServiceCategories* attribute in a *Vpt CA* overrides this attribute value for all the SVCs under the *Vpt* component.
Mib	AtmCore
Set of	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	(unspecifiedBitRate, constantBitRate, rtVariableBitRate, nrtVariableBitRate)
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA maxAutoSelectedVpi (maxVpi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximumVPI value which will be automatically allocated for a switched *Vpc or Vcc*. A VPI number is automatically allocated when a switched *Vpc* or *Vcc* does not request a specific VPI number.
Mib	AtmCore
Values	Decimal (1..4095)
Default	128
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA maxAutoSelectedVciForVpiZero (maxVciVpiZero)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the maximum VCI value which is automatically allocated for a switched *Vcc* with VPI value of zero. A VCI number is automatically allocated when a switched *Vcc* does not request a specific VCI number. This value also applies to switched VCCs created beneath *Vpt/0*.
Mib	AtmCore
Values	Decimal (0..65535)
Default	767
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum VCI value which is automatically allocated for a switched *Vcc* with a non-zero VPI value. A VCI number is automatically allocated when a switched *Vcc* does not request a specific VCI number. This value also applies to switched VCCs created beneath a *Vpt* component.
Mib	AtmCore
Values	Decimal (5..65535)
Default	63
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA bandwidthPool (bwPool)

Access	Read and write
Description	Link capacity is partitioned into five bandwidth pools. This attribute specifies the percentage of link bandwidth that is allowed for each pool. The percentage for each pool ranges from 0% to 12,800%. This allows for both under and over subscription of the link. Under subscription occurs when the sum of the percentages assigned to the five pools is less than 100%. Over subscription occurs when the sum of the percentages for the five pools exceeds 100%.
Mib	AtmCore
Vector of	Decimal (0..12800)
Units	%
Index	Decimal (1..5)
Default	(100, 0, 0, 0, 0)

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GROUP Atmlf CA Operational (Oper)

Properties	Operational
Description	This group contains operational attributes giving statistics about the ATM connections of an ATM interface.
Mib	AtmCore

ATTRIBUTE Atmlf CA actualMaxVccs (mVccs)

Access	Read only
Description	This attribute indicates the maximum number of VCCs that can be supported on this interface. The value includes both provisioned and dynamic connections. This value is determined from the provisioned attribute *maxVccs*.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Atmlf CA permanentVpcs (pVpcs)

Access	Read only
Description	This attribute indicates the number of permanent VPCs that are currently provisioned on this interface. This count includes VPCs with *Src* or *Dst* subcomponents.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Atmlf CA permanentVpts (pVpts)

Access	Read only
Description	This attribute indicates the number of permanent VPTs that are currently provisioned on this interface.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Atmlf CA permanentVccs (pVccs)

Access	Read only
Description	This attribute indicates the number of permanent VCCs that are currently provisioned on this interface. This count includes VCCs with *Src* or *Dst* subcomponents, and permanent *Vpt* VCCs.

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Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf CA switchedVccs (sVccs)

Access	Read only
Description	This attribute indicates the number of switched VCCs that are currently active on this interface. This count includes switched *Vpt* VCCs.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf CA switchedMulticastBranches (sMcastBranches)

Access	Read only
Description	This attribute indicates the number of multicast branches used in switched VCCs, including *Vpt* VCCs, that are currently active on this interface. The sum of this attribute for all *AtmIf* components linked to an *Lp* added to the sum of the *permanentMulticastBranches* attribute for all *AtmIf* components linked to the same *Lp* gives the value of the *multiCastBranchesUsage* attribute in the *Lp Eng Arc* component.
Mib	AtmCore
Values	Decimal (0..10752)
Default	No default

ATTRIBUTE AtmIf CA permanentMulticastBranches (pMcastBranches)

Access	Read only
Description	This attribute indicates the number of multicast branches used in permanent VCCs and VPCs that are currently active on this interface. The sum of this attribute for all *AtmIf* components linked to an *Lp* added to the sum of *switchedMulticastBranches* attribute for all *AtmIf* components linked to the same *Lp* gives the value of the *multiCastBranchesUsage* attribute in the *Lp Eng Arc* component.
Mib	AtmCore
Values	Decimal (0..10752)
Default	No default

ATTRIBUTE AtmIf CA troubledVpcs (trVpcs)

Access	Read only

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Description	This attribute indicates the number of troubled VPCs on this interface. A *Vpc* is “troubled” if its operational *troubled* attribute has the value ***yes***.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA troubledVpts (trVpts)

Access	Read only
Description	This attribute indicates the number of troubled VPTs on this interface. A *Vpt* component is “troubled” if its operational *troubled* attribute has the value ***yes***.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA troubledVccs (trVccs)

Access	Read only
Description	This attribute indicates the number of troubled VCCs on this interface. A *Vcc* component is “troubled” if its operational *troubled* attribute has the value ***yes***.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf CA connectionPoolUsage (connUsage)

Access	Read only
Description	This attribute indicates the number of allocated VCCs, VPCs, and VPTs for this *AtmIf* component. Each *Vcc*, or *Vpc* component is counted as 1 connection. Each basic *Vpt* component is counted as 2 connections, and each standard *Vpt* component is counted as 3 connections. Each connection appropriately reduces the number of connections indicated in the *Lp Eng Arc connectionPoolAvailable* attribute or *protectedConnectionPoolAvailable* attribute, and increases the number of connections indicated in *Arc connectionPoolUsage* attribute or *protectedConnectionPoolUsage* attribute.
Mib	AtmCore
Values	Decimal (0..16384)

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Default	No default

ATTRIBUTE AtmIf CA switchedVpcs (sVpcs)

Access	Read only
Description	This attribute indicates the number of switched VPCs that are currently active on this interface.
Mib	AtmCore
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE AtmIf CA actualMaxVpcs (mVpcs)

Access	Read only
Description	This attribute indicates the maximum number of VPCs that can be supported on this interface. The value includes both provisioned and dynamic connections. This value is determined from the provisioned attribute *maxVpcs*.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA actualMaxVpts (mVpts)

Access	Read only
Description	This attribute indicates the maximum number of VPTs that can be supported on this interface. This value is determined from the provisioned attribute *maxVpts*.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA poolRequestedBandwidth (poolRequBw)

Access	Read only
Description	This attribute indicates the total requested bandwidth from the bandwidth pool (including ATM networking signaling connections, but excluding connections managed by a *Vpt Ca* component). The value of this attribute is the sum of the equivalent cell rate (ECR) for connections which are admitted, and for connections which are requesting admission but have not yet been admitted.
Mib	AtmCore
Vector of	Decimal (0..2147483647)

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Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolAdmittedBandwidth (poolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted bandwidth from the bandwidth pool (including ATM networking signaling connections, but excluding connections managed by a *Vpt Ca* component). The value of this attribute is the sum of the equivalent cell rate (ECR) of the admitted connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolProvisionedBandwidth (poolProvBw)

Access	Read only
Description	This attribute indicates the total bandwidth from the bandwidth pool that is specified by provisioned connections (excluding connections managed by a *Vpt Ca* component). The value of this attribute is the sum of the equivalent cell rate (ECR) of the provisioned connections. Provisioned connections include provisioned VCCs, VPCs, VPTs, *Vpt* VCCs, and VCCs, or VPCs with a *Src*, or *Dst* component.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolWaitAdmitConnections (poolWaitAdmConns)

Access	Read only
Description	This attribute counts the connections that have requested admission in the bandwidth pool but are not yet admitted (excluding ATM networking signaling connections, Soft Permanent Connections, and connections managed by a *Vpt Ca* component).

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Mib	AtmCore
Vector of	Decimal (0..16384)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolAdmittedConnections (poolAdmConns)

Access	Read only
Description	This attribute counts the connections that are currently admitted in the bandwidth pool (including ATM networking signaling connections, but excluding connections managed by a *Vpt Ca* component).
Mib	AtmCore
Vector of	Decimal (0..16384)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolAvailableBandwidth (poolAvailBw)

Access	Read only
Description	This attribute indicates the total available bandwidth in the bandwidth pool. A positive value indicates that there is still bandwidth available in the pool which has not been allocated. A negative value indicates that some bandwidth-elastic provisioned connections are running in reduced mode, where their allocated bandwidth is below their originally allocated ECR. The negative amount is equal to the sum of the *bwReduction* attribute for all connections (excluding connections managed by a *Vpt Ca* component).
Mib	AtmCore
Vector of	Signed (-2147483648..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

GROUP AtmIf CA PmInfo (Pm)

Properties	Operational
Description	This group contains the operational attributes indicating the total number of connections on the interface with active Cell Loss Ratio (CLR) and Availability Ratio (AR) measurements.
Mib	AtmCore

ATTRIBUTE AtmIf CA oamFPmConnections (oamFPmConns)

Access	Read only

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Description	On the local interface, this attribute counts the connections on the interface generating Forward Performance Monitoring (FPM) OAM cells towards a remote interface. On the remote interface, this attribute counts the connections on the interface generating Forward Performance Monitoring (FPM) OAM cells towards a local interface.
Mib	AtmCore
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf CA oamBrPmConnections (oamBrConns)

Access	Read only
Description	On the local interface, this attribute counts the connections receiving Backward Reporting (BR) OAM cells from a remote interface. On the remote interface, this attribute counts the connections receiving Forward Reporting (FR) OAM cells and generating Backward Reporting (BR) OAM cells towards a local interface.
Mib	AtmCore
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf CA oamCcConnections (oamCcConns)

Access	Read only
Description	This attribute counts the connections receiving OAM Continuity Check (CC) cells on the interface.
Mib	AtmCore
Values	Decimal (0..255)
Default	No default

COMPONENT AtmIf CA ConstantBitRate (Cbr)

Instance	Decimal (0)
Groups	GROUP AtmIf CA Cbr Provisioned (Prov) GROUP AtmIf CA Cbr Operational (Oper)
Scope	Device

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Description	*AtmIf/n CA ConstantBitRate/n* This component manages the default characteristics of the constant bit rate (CBR) service category.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP Atmlf CA Cbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control the CBR service category for this interface.
Mib	AtmCore

ATTRIBUTE Atmlf CA Cbr pool

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool which is to be used to support the constant bit rate (CBR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to CBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA Cbr cdvt

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the CBR service category (excluding connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

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	This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required by a given CBR connection. The larger the value of CDVT, the larger is its ECR. If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..10000)
Units	microsec
Default	250
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA Cbr cdv

Access	Read and write
Description	This attribute specifies the peak-to-peak cell delay variation (CDV) which is contributed to the entire ATM Interface for CBR traffic (excluding connections managed by a *Vpt CA*). The CDV is a measure of the delay jitter introduced mostly by traffic buffering and cell scheduling. The worst case value of this attribute can be computed as the value of the *txQueueLimit* attribute divided by the link rate of this ATM Interface. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this ATM Interface can meet the CDV requirement for that connection. If so, the value of this attribute is added to the cumulative CDV field of the extended QoS information element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	250

ATTRIBUTE AtmIf CA Cbr maxCtd

Access	Read and write
Description	This attribute specifies the maximum cell transfer delay (MaxCTD) which is applied to the entire ATM Interface for CBR traffic (excluding connections managed by a *Vpt CA*).

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MaxCTD is the sum of the fixed delay and the CDV. The components of the fixed delay include propagation delay through the physical media, delays induced by the transmission system and fixed components of switch processing delay.

This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this ATM Interface can meet the ATM connection's MaxCTD requirement.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	1000

ATTRIBUTE Atmlf CA Cbr cellLossRatio (clr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the tolerable cell loss ratio (CLR) for CBR traffic (excluding connections managed by a *Vpt CA*). The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be the same as the value of the *RtVbr cellLossRatio* attribute since CBR and rt-VBR traffic have the same discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for CBR connections. There is a trade-off between the service category CLR and the achievable link utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower link utilization. A value of ***anyClrValue*** means that no bandwidth is reserved for CBR connections, and CAC is effectively turned off. All CBR connections are admitted.
Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	10
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA Cbr txQueueLimit (txql)

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Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the CBR service category. It is used as the basis for setting both the queue length and the discard thresholds on both common and per-VC queues. For the common queue, the discard thresholds are set at approximately 35, 75, and 90 percent of the value of this attribute for traffic at discard priority 3 (DP=3), DP=2 and DP=1 respectively. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, common queuing is not available for the CBR service category. For a per-VC queue, the actual queue length may be reduced depending on the shaping rate of the connection (for standard *Vpt VCCs*, this is the shaping rate of the *Vpt* component). The discard thresholds are set at approximately 35, 75 and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2 and DP=1 respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a provisioned connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, per-VC queues are not available for the CBR service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the maximum size of the link-class queue for buffering the egress traffic of the CBR service category. This is similar to common queuing, except that each CBR connection maintains a per-VC utilization limit of the common queue specified for a provisioned connection by the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards the value is ***96***. For ***1pOC12SmLrAtm*** cards, the value is ***350***. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***384***. For ***4pMRPosAtm*** cards, the value is ***386*** for OC-12 ports and ***1544*** for OC-48 ports. For ***1pOC48ChSmIrAtm*** cards, the value is ***2176.*** The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm, Vpc Tm,* or *Vpt Tm txQueueThresholds* attribute.

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For standard VPTs, this attribute only applies when using common queuing. When using per-VC queuing, regardless of the *Vpt's* service category, standard VPTs use the *AtmIf CA NrtVbr txQueueLimit* attribute value as their default.

This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards the valid range for this attribute is from ***5*** to ***30000*** inclusive.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***63488*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840) autoConfigure
Units	cells
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA Cbr holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC CBR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority*.

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Mib	AtmCore
Values	0 1 2 3 4
Default	3
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA Cbr **svcMpHoldingPriority (svcMpHpri)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVC CBR point-to-multipoint connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority.*
Mib	AtmCore
Values	0 1 2 3 4
Default	3
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA Cbr **minPerVcQueueLimit (minpervcql)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the CBR service category. This attribute is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm***, cards, because they do not support per-VC queues for the CBR service category.

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The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the shaping rate of that queue (shaping rate for the connection and for standard *Vpt VCCs*, the shaping rate of the *Vpt* component). This produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound.

The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks, the value of the *minPerVcQueueLimit* attribute must be at least ***88***.

For VPTs, this attribute does not apply. Regardless of the *Vpt*'s service category, standard VPTs always use the *AtmIf CA NrtVbr minPerVcQueueLimit* value as their default. To determine the queue limit of a standard *Vpt Vcc*, the *txQueueLimit* attribute is scaled down by the *Vpt* shaping rate.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***63488*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***36*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840)
Units	cells
Default	88
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA Cbr perVcQueueLimitReferenceRate (refrate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the CBR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute.

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This attribute is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the CBR service category.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards the value is ***65511***. For ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***3685***. For MSA32 cards, the value is ***65511*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***262044***. For ***4pMRPosAtm*** cards, the value is ***262044*** for OC-12 ports and ***1048176*** for OC-48 ports.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the maximum value is ***1416905***. For ***16pOC3PosAtm*** cards, the maximum value is ***353207***. For ***4pMRPosAtm*** cards, the maximum value is ***1412830*** for OC-12 ports and ***5651320*** for OC-48 ports. For all other cards, the maximum value is ***943396***.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr perVcQueueLimitReferenceRate* attribute value as their default.

Mib	AtmCore
Values	Decimal (1..5651320) autoConfigure
Units	cell/s
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA Cbr** **emissionPriority (ep)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the CBR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth. EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component.

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This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7).
4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP.
5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR.
6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. EP 0 must be used if traffic shaping is required.
4. EP 5 and EP 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.

For ***1pOC48ChSmIrAtm*** cards, only the default value is supported.

Mib	AtmCore
Values	Decimal (0..7)
Default	0
Flags	HCA_SUPPORT

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ATTRIBUTE **AtmIf CA Cbr** **trafficShaping (trShaping)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default traffic shaping option for connections of the CBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. A value of ***disabled*** means traffic shaping cannot be enabled for any CBR connections. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled*** since traffic shaping is not supported for CBR connections on these cards. If the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm*, *txTrafficDescType* attribute indicates type 1 or 2, this attribute is ignored and traffic shaping is not applicable for that connection. A value of ***inverseUpc*** means traffic shaping for a connection is enabled according to the value of the *Vcc Tm, Vpc Tm,* or *Vpt Tm* *txTrafficDescType* attribute. A value of ***inverseUpc*** when the *txTrafficDescType* is 3, 4, or 5, means linear traffic shaping is enabled. Linear traffic shaping uses a single static traffic shaping rate. A value of ***inverseUpc*** when the *txTrafficDescType* is 6, 7, or 8, means inverse-UPC (also referred to as VBR or dual leaky bucket) traffic shaping is enabled. Inverse-UPC traffic shaping can burst above the sustained cell rate to the peak cell rate for the duration defined by the maximum burst size. Inverse-UPC traffic shaping exactly conforms to the requirements of a dual leaky bucket UPC enforcer. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***inverseUpc*** is not available. A value of ***enabled*** when the *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, means linear traffic shaping is enabled. Enabling or disabling traffic shaping may require a matching change to the *emissionPriority* attribute and the *unshapedTransmitQueueing* attribute for this service category. Refer to those attributes for the complete description of the interactions.
Mib	AtmCore

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Values	enabled disabled inverseUpc
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA Cbr** **shapeRecoupPolicy (recoup)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping recoup policy for the CBR service category. This is the policy which is used to recoup shaping opportunities which are lost when more than one connection schedules a cell for the same transmit opportunity. In this case, one connection is scheduled and the cell from the other connection is delayed by one cell time. This attribute affects how the transmit time is calculated for the next cell on the delayed connection. This attribute is ignored if this service category is not shaped. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. When the connection which was delayed schedules the next cell to transmit, it may calculate the time as a difference from either the previous actual cell transmit time, or the time when the previous cell should have been transmitted. A value of ***maximumEfficiency*** results in each connection trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell should originally have been sent. Cell delay variation (CDV) occurs in this case since the cells are sent with less than the shaping delay between them. However, in general the shaper recovers (recoups) lost opportunities and improves efficiency. A value of ***minimumCdv*** results in connections not trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell was actually transmitted. This minimizes CDV, but results in missed cell opportunities.
Mib	AtmCore
Values	minimumCdv maximumEfficiency
Default	minimumCdv
Flags	HCA_SUPPORT

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ATTRIBUTE Atmlf CA Cbr **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default queuing option for unshaped connections of the CBR service category. This attribute controls whether common or per-VC queuing is used. A value of ***perVc*** means that each connection has its own buffering and queue limits. A value of ***common*** means that cells are queued in First In First Out order on a common queue for this service category. The common queue has one set of congestion control levels for all cells enqueued on it. If traffic shaping for this service category is specified, the value of this attribute must be ***perVc***. This attribute does not apply to basic VPTs and standard *Vpt* VCCs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***common*** since these cards do not support per-VC queuing for the CBR service category. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the value of this attribute must be ***perVc*** since these cards do not support common queuing for the CBR service category. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, no more than 32,000 connections on the FP can use per-VC queuing. The remaining connections must use common queuing. The *Lp Eng Arc perVcQueueUsage* attribute indicates the number per-VC queues that are currently in use.
Mib	AtmCore
Values	perVc common
Default	common
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA Cbr **weightPolicy**

Access	Read and write
Criticality	Process

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Description	This attribute specifies the policy which is applied when calculating the fairness weight for unshaped connections of the CBR service category. The fairness weight for a connection determines the relative amount of bandwidth which that connection obtains, compared to other connections in the same service category. Connections with equal weight get equal transmit opportunities. Connections with higher weights get more transmit opportunities compared with connections that have lower weights. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. The fairness weight for a connection is directly proportional to the value of one of the traffic descriptor parameters for that connection. This attribute specifies which traffic descriptor parameter is used for connections of the CBR service category. A value of ***scr*** means the fairness weight is proportional to the transmit sustained cell rate (SCR) of a connection. Connections with a higher SCR have a higher fairness weight. For connections with *txTrafficDescType* 3, which have no SCR, the sustained cell rate is assumed to be equal to the peak cell rate. A value of ***pcr*** means the fairness weight is proportional to the transmit peak cell rate (PCR) of a connection. Connections with a higher PCR have a higher fairness weight. Connections with *txTrafficDescType* 1 or 2 get a minimum weight, which is 1. A value of ***ecr*** means the fairness weight is proportional to the equivalent cell rate (ECR) of a connection as calculated by connection admission control (CAC). Connections with a higher ECR have a higher fairness weight. Connections with an ECR of 0 get a minimum weight, which is 1. The weight of a connection is visible in the *Vcc Tm, Vpc Tm,* or *Vpt Tm weight* attribute. This attribute does not apply to basic VPTs and standard *Vpt* VCCs. This attribute is ignored if the value of the *unshapedTransmitQueueing* attribute is ***common***. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.
Mib	AtmCore
Values	scr pcr ecr

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Default	ecr
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA Cbr **forceTagging (tag)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default force tagging (CLP=1) value of all cells for CBR permanent connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enabled*** means CLP is set to 1 for all cells. A value of ***disabled*** means CLP is unchanged for all cells. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. This attribute does not apply to any type of *Vpt* component. This attribute does not apply to switched CBR connections. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards.
Mib	AtmCore
Values	enabled disabled
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA Cbr **usageParameterControl (upc)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default usage parameter control (UPC) option for connections of the CBR service category. This attribute is ignored if the *rxTrafficDescriptorType* indicates 1 or 2. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*.

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A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged.

A value of ***disabled*** means UPC is disabled on the receive path for all CBR connections.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***.

For ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled***.

Mib	AtmCore
Values	enforced disabled monitored
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA Cbr** **txCellDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded outgoing cells for CBR service category. If the count of discarded outgoing CBR cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded outgoing CBR cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded outgoing CBR cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded outgoing CBR cells are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm*** and ***2pJ6MAtm*** cards.

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	This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf CA Cbr **rxCellDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded incoming cells for CBR service category. If the count of discarded incoming CBR cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded incoming CBR cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming CBR cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded incoming CBR cells are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards. This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf CA Cbr **txFrameDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded outgoing frames for CBR service category. If the count of discarded outgoing CBR frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set.

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While the alarm is set, if the count of discarded outgoing CBR frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded outgoing CBR frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded outgoing CBR frames are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards

Mib — AtmCore

Values — Decimal (0..4294967295)

Default — 0

ATTRIBUTE Atmlf CA Cbr **rxFrameDiscardThreshold**

Access — Read and write

Description — This attribute specifies the threshold for a minor alarm for discarded incoming frames for CBR service category.

If the count of discarded incoming CBR frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set.

While the alarm is set, if the count of discarded incoming CBR frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming CBR frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded incoming CBR frames are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards.

Mib — AtmCore

Values — Decimal (0..4294967295)

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Default	0

GROUP AtmIf CA Cbr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the CBR service category.
Mib	AtmCore

ATTRIBUTE AtmIf CA Cbr epdOffset (epdO)

Access	Read only
Description	This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level. Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled. The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.
Mib	AtmCore
Values	Decimal (0; 5..1024)
Units	cells
Default	No default

COMPONENT AtmIf CA RealTimeVariableBitRate (RtVbr)

Instance	Decimal (0)
Groups	GROUP AtmIf CA RtVbr Provisioned (Prov) GROUP AtmIf CA RtVbr Operational (Oper)
Scope	Device

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Description	*AtmIf/n CA RealTimeVariableBitRate/n* This component manages the default characteristics of the real-time variable bit rate (rt-VBR) service category.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA RtVbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control the rt-VBR service category for this interface.
Mib	AtmCore

ATTRIBUTE AtmIf CA RtVbr pool

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool which is to be used to support the real-time variable bit rate (rt-VBR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to rt-VBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA RtVbr cdvt

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the rt-VBR service category (including connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

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If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.

Mib	AtmCore
Values	Decimal (1..1200000)
Units	microsec
Default	250
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA RtVbr** **cdv**

Access	Read and write
Description	This attribute specifies the peak-to-peak cell delay variation (CDV) which is contributed to the entire ATM Interface for rt-VBR traffic (excluding connections managed by a *Vpt CA*). The CDV is a measure of the delay jitter introduced mostly by traffic buffering and cell scheduling. The worst case value of this attribute can be computed as the *txQueueLimit* attribute divided by the link rate of this ATM Interface. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this ATM Interface can meet the CDV requirement for that connection. If so, the value of this attribute is added to the cumulative CDV field of the extended QoS information element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	1268

ATTRIBUTE **AtmIf CA RtVbr** **maxCtd**

Access	Read and write
Description	This attribute specifies the maximum cell transfer delay (MaxCTD) which is applied to the entire ATM Interface for rt-VBR traffic (excluding connections managed by a *Vpt CA*). MaxCTD is the sum of the fixed delay and the CDV. The components of the fixed delay include propagation delay through the physical media, delays induced by the transmission system and fixed components of

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switch processing delay.

This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this ATM Interface can meet the ATM connection's MaxCTD requirement.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	2000

ATTRIBUTE AtmIf CA RtVbr **cellLossRatio (clr)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the tolerable cell loss ratio (CLR) for rt-VBR traffic (excluding connections managed by a *Vpt CA*). The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be the same as the value of the *Cbr cellLossRatio* attribute since CBR and rt-VBR traffic have the same discard priority. The value if this attribute must also be greater than or equal to the value of the *NrtVbr cellLossRatio* attribute since rt-VBR traffic has a higher discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for rt-VBR connections. There is a trade-off between the service category CLR and the achievable link utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower link utilization. A value of ***anyClrValue*** means that no bandwidth is reserved for rt-VBR connections, and CAC is effectively turned off. All rt-VBR connections are admitted.
Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	10
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA RtVbr **txQueueLimit (txql)**

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Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the rt-VBR service category. It is used as the basis for setting both the queue length and the discard thresholds on both common and per-VC queues. For the common queue, the discard thresholds are set at approximately 35, 75, and 90 percent of the value of this attribute for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, common queuing is not available for the rt-VBR service category. For a per-VC queue, the actual queue length may be reduced depending on the shaping rate of the connection (for standard *Vpt* VCCs, this is the shaping rate of the *Vpt* component). The discard thresholds are set at approximately 35, 75, and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2, and DP=1, respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a provisioned connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, per-VC queues are not available for the rt-VBR service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the maximum size of the link-class queue for buffering the egress traffic of the rt-VBR service category. This is similar to common queuing, except that each rt-VBR connection maintains a per-VC utilization limit of the common queue specified for a provisioned connection by the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, and ***16pOC3SmIrAtm*** cards, the value is ***480***. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***288***. For MSA32 cards, the value is ***480*** for OC-3 channels, and ***288*** for DS1, or E1 channels. For ***16pOC3PosAtm*** cards, the value is ***1280***. For ***1pOC12SmLrAtm*** cards, the value is ***2048***. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***1920***. For ***4pMRPosAtm*** cards, the value is ***5120*** for OC-12 ports and ***20480*** for OC-48 ports. For ***1pOC48ChSmIrAtm*** cards, the value is ***12288.*** The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm, Vpc Tm,* or *Vpt Tm txQueueThresholds* attribute.

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For standard VPTs, this attribute only applies when using common queuing. When using per-VC queuing, regardless of the *Vpt's* service category, standard VPTs use the *AtmIf CA NrtVbr txQueueLimit* attribute value as their default.

This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards the valid range for this attribute is from ***5*** to ***30000*** inclusive.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840) autoConfigure
Units	cells
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA RtVbr** **minPerVcQueueLimit (minpervcql)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the rt-VBR service category. This attribute is ignored for ***1pOC12SmLrAtm*** cards, because they do not support per-VC queues for the rt-VBR service category. The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the shaping rate of that queue (shaping rate for the connection and for standard *Vpt* VCCs, the shaping rate of the *Vpt* component). This produces a constant delay for various queue

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lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound.

The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks, the value of the *minPerVcQueueLimit* attribute must be at least ***88***.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr minPerVcQueueLimit* value as their default. To determine the queue limit of a standard *Vpt Vcc*, the *txQueueLimit* attribute is scaled down by the *Vpt* shaping rate.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***36*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840)
Units	cells
Default	88
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA RtVbr** **perVcQueueLimitReferenceRate (refrate)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the rt-VBR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the rt-VBR service category.

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A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, and ***4pOC3SmIrAtm*** cards, the value is ***14740***. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***3685***. For MSA32 cards, the value is ***14740*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***262044***. For ***4pMRPosAtm*** cards, the value is ***157228*** for OC-12 ports and ***628912*** for OC-48 ports. For ***16pOC3SmIrAtm*** cards, the value is ***65511***. For ***16pOC3PosAtm*** cards, the value is ***39307***.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the maximum value is ***1416905***. For ***16pOC3PosAtm*** cards, the maximum value is ***353207***. For ***4pMRPosAtm*** cards, the maximum value is ***1412830*** for OC-12 ports and ***5651320*** for OC-48 ports. For all other cards, the maximum value is ***943396***.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr perVcQueueLimitReferenceRate* attribute value as their default.

Mib	AtmCore
Values	Decimal (1..5651320) autoConfigure
Units	cell/s
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA RtVbr holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC rt-VBR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs, is released as a unit, according to the *Vpt*'s *holdingPriority.*
Mib	AtmCore

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Values	0 1 2 3 4
Default	3
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA RtVbr **svcMpHoldingPriority (svcMpHpri)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the holding priority which applies to SVC rt-VBR point-to-multipoint connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs, When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs, is released as a unit, according to the *Vpt*'s *holdingPriority.*
Mib	AtmCore
Values	0 1 2 3 4
Default	3
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA RtVbr **emissionPriority (ep)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the rt-VBR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth. EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the

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strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7).
4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP.
5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR.
6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. EP 0 must be used if traffic shaping is required.
4. EP 5 and EP 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.

For ***1pOC48ChSmIrAtm*** cards, only the default value is supported. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm,*** and ***16pOC3SmIrAtm*** cards the default value is ***2***.

Mib — AtmCore

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Values	Decimal (0..7)
Default	1
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA RtVbr** **trafficShaping (trShaping)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default traffic shaping option for connections of the rt-VBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. A value of ***disabled*** means traffic shaping cannot be enabled for any rt-VBR connections. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled*** since traffic shaping is not supported for rt-VBR connections on these cards. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute may be ***enabled*** only if the interface supports shaping, as defined by the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component. If that component does not exist, the value of this attribute must be ***disabled***. If the *Vcc Tm, Vpc Tm,* or *Vpt Tm, txTrafficDescType* attribute indicates type 1 or 2, this attribute is ignored and traffic shaping is not applicable for that connection. A value of ***inverseUpc*** means traffic shaping for a connection is enabled according to the value of the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType* attribute. A value of ***inverseUpc*** when the *txTrafficDescType* is 3, 4, or 5, means linear traffic shaping is enabled. Linear traffic shaping uses a single static traffic shaping rate. A value of ***inverseUpc*** when the *txTrafficDescType* is 6, 7, or 8, means inverse-UPC (also referred to as VBR or dual leaky bucket) traffic shaping is enabled. Inverse-UPC traffic shaping can burst above the sustained cell rate to the peak cell rate for the duration defined by the maximum burst size. Inverse-UPC traffic shaping exactly conforms to the requirements of a dual leaky bucket UPC enforcer. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***inverseUpc*** is not available.

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For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***inverseUpc*** is not supported and is equivalent to the value ***enabled***.

A value of ***enabled*** when the *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, means traffic shaping for a connection is enabled using linear shaping.

Enabling or disabling traffic shaping may require a matching change to the *emissionPriority* attribute, and the *unshapedTransmitQueueing* attribute for this service category. Refer to those attributes for the complete description of the interactions.

Mib	AtmCore
Values	enabled disabled inverseUpc
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA RtVbr** **shapeRecoupPolicy (recoup)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping recoup policy for the rt-VBR service category. This is the policy which is used to recoup shaping opportunities which are lost when more than one connection schedules a cell for the same transmit opportunity. In this case, one connection is scheduled and the cell from the other connection is delayed by one cell time. This attribute affects how the transmit time is calculated for the next cell on the delayed connection. This attribute is ignored if this service category is not shaped. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. When the connection which was delayed schedules the next cell to transmit, it may calculate the time as a difference from either the previous actual cell transmit time, or the time when the previous cell should have been transmitted. A value of ***maximumEfficiency*** results in each connection trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell should originally have been sent. Cell delay variation (CDV) occurs in this case since the cells are sent with less than the shaping delay between them. However, in

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general the shaper recovers (recoups) lost opportunities and improves efficiency.

A value of ***minimumCdv*** results in connections not trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell was actually transmitted. This minimizes CDV, but results in missed cell opportunities.

Mib	AtmCore
Values	minimumCdv maximumEfficiency
Default	minimumCdv
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA RtVbr** **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default queuing option for unshaped connections of the rt-VBR service category. This attribute controls whether common or per-VC queuing is used. A value of ***perVc*** means that each connection has its own buffering and queue limits. A value of ***common*** means that cells are queued in First In First Out order on a common queue for this service category. The common queue has one set of congestion control levels for all cells enqueued on it. This attribute does not apply to basic VPTs and standard *Vpt* VCCs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, if the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component permits shaping for this interface, then this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component does not permit shaping for this interface, then this attribute may take the values ***common***, or ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean common queuing. An override to this default may be specified for a provisioned connection under the *Vcd Tm*, or *Vpd Tm* component. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmlrAtm*** cards, the value ***perVc*** is not supported since these cards do not support per-VC queuing. The value ***autoConfigure*** is interpreted to mean common queuing. For ***4pOC12SmlrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmlrAtm*** cards,

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the value ***common*** is not supported since these cards do not support common queuing. The value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, if traffic shaping for this service category is disabled, this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If traffic shaping for this service category is not disabled, the only permitted values are ***perVc*** and ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, no more than 32,000 connections on the FP can use per-VC queuing. The remaining connections must use common queuing. The *Lp Eng Arc perVcQueueUsage* attribute indicates the number per-VC queues that are currently in use.

The value of the operational *opUnshapedTransmitQueueing* attribute of this component indicates whether the transmit queuing is ***perVc***, or ***common***.

Mib	AtmCore
Values	perVc common autoConfigure
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA RtVbr** **usageParameterControl (upc)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default usage parameter control (UPC) option for connections of the rt-VBR service category. This attribute is ignored if the *rxTrafficDescriptorType* indicates 1 or 2. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on

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unchanged.

A value of ***disabled*** means UPC is disabled on the receive path for all rt-VBR connections.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***.

For ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled***.

Mib	AtmCore
Values	enforced disabled monitored
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA RtVbr** **weightPolicy**

Access	Read and write
Criticality	Process
Description	This attribute specifies the policy which is applied when calculating the fairness weight for unshaped connections of the rt-VBR service category. The fairness weight for a connection determines the relative amount of bandwidth which that connection obtains, compared to other connections in the same service category. Connections with equal weight get equal transmit opportunities. Connections with higher weights get more transmit opportunities compared with connections that have lower weights. An override to this default may be specified for a provisioned connection under the *Vcd Tm*, or *Vpd Tm* component. The fairness weight for a connection is directly proportional to the value of one of the traffic descriptor parameters for that connection. This attribute specifies which traffic descriptor parameter is used for connections of the rt-VBR service category. A value of ***scr*** means the fairness weight is proportional to the transmit sustained cell rate (SCR) of a connection. Connections with a higher SCR have a higher fairness weight. For connections with *txTrafficDescType* 3, which have no SCR, the sustained cell rate is assumed to be equal to the peak cell rate. A value of ***pcr*** means the fairness weight is proportional to the transmit peak cell rate (PCR) of a connection. Connections with a higher PCR have

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a higher fairness weight. Connections with *txTrafficDescType* 1 or 2 get a minimum weight, which is 1.

A value of ***ecr*** means the fairness weight is proportional to the equivalent cell rate (ECR) of a connection as calculated by connection admission control (CAC). Connections with a higher ECR have a higher fairness weight. Connections with an ECR of 0 get a minimum weight, which is 1.

The weight of a connection is visible in the *Vcc Tm, Vpc Tm,* or *Vpt Tm weight* attribute.

This attribute does not apply to basic VPTs and standard *Vpt* VCCs.

This attribute is ignored if the value of the *unshapedTransmitQueueing* attribute is ***common***.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib — AtmCore

Values
scr
pcr
ecr

Default — ecr

Flags — HCA_SUPPORT

ATTRIBUTE Atmlf CA RtVbr **forceTagging (tag)**

Access — Read and write

Criticality — Process

Description

This attribute specifies the default force tagging (CLP=1) value of all cells for rt-VBR permanent connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enabled*** means CLP is set to 1 for all cells.

A value of ***disabled*** means CLP is unchanged for all cells.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction.

This attribute does not apply to any type of *Vpt* component.

This attribute does not apply to switched rt-VBR connections.

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This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib	AtmCore
Values	enabled disabled
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA RtVbr **txCellDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded outgoing cells for rt-VBR service category. If the count of discarded outgoing rt-VBR cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded outgoing rt-VBR cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded outgoing rt-VBR cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded outgoing rt-VBR cells are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards. This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf CA RtVbr **rxCellDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded incoming cells for rt-VBR service category.

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If the count of discarded incoming rt-VBR cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set.

While the alarm is set, if the count of discarded incoming rt-VBR cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming rt-VBR cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded incoming rt-VBR cells are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards.

This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.

Mib — AtmCore

Values — Decimal (0..4294967295)

Default — 0

ATTRIBUTE Atmlf CA RtVbr **txFrameDiscardThreshold**

Access — Read and write

Description — This attribute specifies the threshold for a minor alarm for discarded outgoing frames for rt-VBR service category.

If the count of discarded outgoing rt-VBR frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set.

While the alarm is set, if the count of discarded outgoing rt-VBR frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded outgoing rt-VBR frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded outgoing rt-VBR frames are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm,***

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2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm and ***16pOC3SmIrAtm*** cards.

Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf CA RtVbr **rxFrameDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded incoming frames for rt-VBR service category. If the count of discarded incoming rt-VBR frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded incoming rt-VBR frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming rt-VBR frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded incoming rt-VBR frames are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

GROUP AtmIf CA RtVbr **Operational (Oper)**

Properties	Operational
Description	This group contains operational attributes for the rt-VBR service category.
Mib	AtmCore

ATTRIBUTE AtmIf CA RtVbr **opUnshapedTransmitQueueing (opUnshap)**

Access	Read only
Description	This attribute indicates the type of transmit queuing for unshaped rt-VBR connections.

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A value of ***perVc*** indicates that unshaped connections use per-VC queuing. A value of ***common*** indicates unshaped connections use the common queue for this service category.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***common*** is always indicated since these cards do not support per-VC queuing.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***perVc*** is always indicated since these cards do not support common queuing.

Mib — AtmCore

Values — perVc
common

Default — No default

ATTRIBUTE AtmIf CA RtVbr **epdOffset (epdO)**

Access — Read only

Description — This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level.

Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled.

The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.

Mib — AtmCore

Values — Decimal (0; 5..1024)

Units — cells

Default — No default

COMPONENT AtmIf CA **NonRealTimeVariableBitRate (NrtVbr)**

Instance — Decimal (0)

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Groups	GROUP AtmIf CA NrtVbr Provisioned (Prov) GROUP AtmIf CA NrtVbr Operational (Oper)
Scope	Device
Description	*AtmIf/n CA NonRealTimeVariableBitRate/n* This component manages the default characteristics of the non-real-time variable bit rate (nrt-VBR) service category.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA NrtVbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control the nrt-VBR service category for this interface.
Mib	AtmCore

ATTRIBUTE AtmIf CA NrtVbr pool

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool which is to be used to support the non-real-time variable bit rate (nrt-VBR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to nrt-VBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA NrtVbr cdvt

Access	Read and write
Criticality	Process

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Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the nrt-VBR service category (including connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..1200000)
Units	microsec
Default	250
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA NrtVbr txQueueLimit (txql)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the nrt-VBR service category. It is used as the basis for setting both the queue length and the discard thresholds on both common and per-VC queues. For the common queue, the discard thresholds are set at approximately 35, 75, and 90 percent of the value of this attribute for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, common queuing is not available for the nrt-VBR service category. For a per-VC queue, the actual queue length may be reduced depending on the shaping rate of the connection (for standard *Vpt* VCCs, this is the shaping rate of the *Vpt*). The discard thresholds are set at approximately 35, 75, and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a permanent connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, per-VC queues are not available for the nrt-VBR service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the maximum size of the link-class queue for buffering the egress traffic of the nrt-VBR service category. This is similar to common queuing, except that each nrt-VBR connection maintains a per-VC utilization limit of the common queue

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specified for a provisioned connection by the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***1792***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***2304***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards, the value is ***10240***. For MSA32 cards, the value is ***10240*** for OC-3 channels, and ***1792*** for DS1, or E1 channels. For ***4pMRPosAtm*** cards, the value is ***40960***. For ***1pOC12SmLrAtm*** cards, the value is ***7680***. For ***1pOC48ChSmIrAtm*** cards, the value is ***118784.***

The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm, Vpc Tm,* or *Vpt Tm txQueueThresholds* attribute.

When using per-VC queuing, this attribute is used as the default *txQueueLimit* for all standard VPTs, regardless of the *Vpt's* service category.

This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components and the valid range is from ***5*** to ***30000*** inclusive.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840) autoConfigure
Units	cells

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Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA NrtVbr** **minPerVcQueueLimit (minpervcql)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the nrt-VBR service category. This attribute is ignored for ***1pOC12SmLrAtm*** cards, because they do not support per-VC queues for the nrt-VBR service category. The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the shaping rate of that queue (shaping rate for the connection and for standard *Vpt* VCCs, the shaping rate of the *Vpt*). This produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound. The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks, the value of the *minPerVcQueueLimit* attribute must be at least ***88***. This attribute is used as the default *minPerVcQueueLimit* for all standard VPTs, regardless of the *Vpt's* service category. This attribute does not apply to basic VPTs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***43*** to ***512000*** inclusive. For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive. For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.
Mib	AtmCore

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Values	Decimal (5..1011840)
Units	cells
Default	88
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA NrtVbr perVcQueueLimitReferenceRate (refrate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the nrt-VBR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***1pOC12SmLrAtm*** and ***1pOC48ChSmlrAtm*** cards, because they do not support traffic shaping for the nrt-VBR service category. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***3685***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***14740***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmlrAtm***, ***16pOC3SmlrAtm***, and ***16pOC3PosAtm*** cards, the value is ***65511***. For MSA32 cards, the value is ***65511*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmlrAtm***, ***4pOC12SmLrAtm***, and 4***pMRPosAtm*** cards, the value is ***262044***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr*, and *Ubr* components. For ***4pOC12SmlrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmlrAtm*** cards the maximum value is ***1416905***. For ***16pOC3PosAtm*** cards, the maximum value is ***353207***. For ***4pMRPosAtm*** cards, the maximum value is ***1412830*** for OC-12 ports and ***5651320*** for OC-48 ports. For all other cards, the maximum value is ***943396***. This attribute is used as the default *perVcQueueLimitReferenceRate* for all standard VPTs, regardless of the *Vpt's* service category. This attribute does not apply to basic VPTs.
Mib	AtmCore
Values	Decimal (1..5651320) autoConfigure

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Units	cell/s
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA NrtVbr svcMpHoldingPriority (svcMpHpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVC nrt-VBR point-to-multipoint connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs, is released as a unit, according to the *Vpt*'s *holdingPriority.*
Mib	AtmCore
Values	0 1 2 3 4
Default	3
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf CA NrtVbr holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC nrt-VBR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt*, along with all *Vpt* VCCs, is released as a unit, according to the *Vpt*'s *holdingPriority.*
Mib	AtmCore

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Values	0 1 2 3 4
Default	3
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA NrtVbr emissionPriority (ep)

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the nrt-VBR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth. EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch, 4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints: 1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR 2. Two different ATM service categories may share the same EP only if they are both shaped. 3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7). 4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP. 5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR. 6. If UBR is shaped, it must share the same EP with ABR. If UBR is not

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shaped, it must have a lower EP than ABR.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. EP 0 must be used if traffic shaping is required.
4. EP 5 and EP 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.

For ***1pOC48ChSmIrAtm*** cards, only the default value is supported.

Mib	AtmCore
Values	Decimal (0..7)
Default	4
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA NrtVbr** **trafficShaping (trShaping)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default traffic shaping option for connections of the nrt-VBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. A value of ***disabled*** means traffic shaping cannot be enabled for any nrt-VBR connections. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled*** since traffic shaping is not supported for nrt-VBR connections on these cards. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute may be ***enabled*** only if the interface supports shaping, as defined by the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component. If that component does not exist, the value of this attribute must be ***disabled***.

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If the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType* attribute indicates type 1 or 2, this attribute is ignored and traffic shaping is not applicable for that connection.

A value of ***inverseUpc*** means traffic shaping for a connection is enabled according to the value of the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType* attribute.

A value of ***inverseUpc*** when the *txTrafficDescType* is 3, 4, or 5, means linear traffic shaping is enabled. Linear traffic shaping uses a single static traffic shaping rate.

A value of ***inverseUpc*** when the *txTrafficDescType* is 6, 7, or 8, means inverse-UPC (also referred to as VBR or dual leaky bucket) traffic shaping is enabled. Inverse-UPC traffic shaping can burst above the sustained cell rate to the peak cell rate for the duration defined by the maximum burst size. Inverse-UPC traffic shaping exactly conforms to the requirements of a dual leaky bucket UPC enforcer.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***inverseUpc*** is not available.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***inverseUpc*** is not supported and is equivalent to the value ***enabled***.

A value of ***enabled*** when the *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, means traffic shaping for a connection is enabled using linear shaping.

Enabling or disabling traffic shaping may require a matching change to the *emissionPriority* attribute, and the *unshapedTransmitQueueing* attribute for this service category. Refer to those attributes for the complete description of the interactions.

Mib	AtmCore
Values	enabled disabled inverseUpc
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA NrtVbr** **shapeRecoupPolicy (recoup)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping recoup policy for the nrt-VBR service category. This is the policy which is used to recoup shaping opportunities

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which are lost when more than one connection schedules a cell for the same transmit opportunity. In this case, one connection is scheduled and the cell from the other connection is delayed by one cell time. This attribute affects how the transmit time is calculated for the next cell on the delayed connection. This attribute is ignored if this service category is not shaped.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

When the connection which was delayed schedules the next cell to transmit, it may calculate the time as a difference from either the previous actual cell transmit time, or the time when the previous cell should have been transmitted.

A value of ***maximumEfficiency*** results in each connection trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell should originally have been sent. Cell delay variation (CDV) occurs in this case since the cells are sent with less than the shaping delay between them. However, in general the shaper recovers (recoups) lost opportunities and improves efficiency.

A value of ***minimumCdv*** results in connections not trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell was actually transmitted. This minimizes CDV, but results in missed cell opportunities.

Mib	AtmCore
Values	minimumCdv maximumEfficiency
Default	maximumEfficiency
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA NrtVbr** **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default queuing option for unshaped connections of the nrt-VBR service category. This attribute controls whether common or per-VC queuing is used. A value of ***perVc*** means that each connection has its own buffering and queue limits. A value of ***common*** means that cells are queued in First In First Out order

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on a common queue for this service category. The common queue has one set of congestion control levels for all cells enqueued on it.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, if the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component permits shaping for this interface, then this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component does not permit shaping for this interface, then this attribute may take the values ***common***, or ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean common queuing. An override to this default may be specified for a provisioned connection under the *Vcd Tm*, or *Vpd Tm* component. There is one common queue which is shared by the nrt-VBR, ABR, and UBR service categories.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***perVc*** is not supported since these cards do not support per-VC queuing. The value ***autoConfigure*** is interpreted to mean common queuing.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***common*** is not supported since these cards do not support common queuing. The value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, if traffic shaping for this service category is disabled, this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If traffic shaping for this service category is not disabled, the only permitted values are ***perVc*** and ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, no more than 32,000 connections on the FP can use per-VC queuing. The remaining connections must use common queuing. The *Lp Eng Arc perVcQueueUsage* attribute indicates the number per-VC queues that are currently in use.

The value of the operational *opUnshapedTransmitQueueing* attribute of this component indicates whether the transmit queuing is ***perVc*** or ***common***.

Mib — AtmCore

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Values	perVc common autoConfigure
Default	autoConfigure
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA NrtVbr **usageParameterControl (upc)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default usage parameter control (UPC) option for connections of the nrt-VBR service category. This attribute is ignored if the *rxTrafficDescriptorType* indicates 1 or 2. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged. A value of ***disabled*** means UPC is disabled on the receive path for all rt-VBR connections. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***. For ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled***.
Mib	AtmCore
Values	enforced disabled monitored
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA NrtVbr **weightPolicy**

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Access	Read and write
Criticality	Process
Description	This attribute specifies the policy which is applied when calculating the fairness weight for unshaped connections of the nrt-VBR service category. The fairness weight for a connection determines the relative amount of bandwidth which that connection obtains, compared to other connections in the same service category. Connections with equal weight get equal transmit opportunities. Connections with higher weights get more transmit opportunities compared with connections that have lower weights. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. The fairness weight for a connection is directly proportional to the value of one of the traffic descriptor parameters for that connection. This attribute specifies which traffic descriptor parameter is used for connections of the nrt-VBR service category. A value of ***scr*** means the fairness weight is proportional to the transmit sustained cell rate (SCR) of a connection. Connections with a higher SCR have a higher fairness weight. For connections with *txTrafficDescType* 3, which have no SCR, the sustained cell rate is assumed to be equal to the peak cell rate. A value of ***pcr*** means the fairness weight is proportional to the transmit peak cell rate (PCR) of a connection. Connections with a higher PCR have a higher fairness weight. Connections with *txTrafficDescType* 1 or 2 get a minimum weight, which is 1. A value of ***ecr*** means the fairness weight is proportional to the equivalent cell rate (ECR) of a connection as calculated by connection admission control (CAC). Connections with a higher ECR have a higher fairness weight. Connections with an ECR of 0 get a minimum weight, which is 1. The weight of a connection is visible in the *Vcc Tm, Vpc Tm,* or *Vpt Tm weight* attribute. This attribute does not apply to basic VPTs and standard *Vpt* VCCs. This attribute is ignored if the value of the *unshapedTransmitQueueing* attribute is ***common***. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.
Mib	AtmCore

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Values	scr pcr ecr
Default	ecr
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA NrtVbr **forceTagging (tag)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default force tagging (CLP=1) value of all cells for nrt-VBR permanent connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enabled*** means CLP is set to 1 for all cells. A value of ***disabled*** means CLP is unchanged for all cells. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. This attribute does not apply to any type of *Vpt* component. This attribute does not apply to switched nrt-VBR connections. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards.
Mib	AtmCore
Values	enabled disabled
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf CA NrtVbr **cellLossRatio (clr)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the tolerable cell loss ratio (CLR) for nrt-VBR traffic (excluding connections managed by a *Vpt CA*). The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value if this attribute must be less than or equal to the value of the *RtVbr cellLossRatio*

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attribute since rt-VBR traffic has a higher discard priority.

This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for nrt-VBR connections.

There is a trade-off between the service category CLR and the achievable link utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower link utilization.

A value of ***anyClrValue*** means that no bandwidth is reserved for nrt-VBR connections and CAC is effectively turned off. All nrt-VBR connections are admitted.

Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	7
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf CA NrtVbr** **txCellDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded outgoing cells for nrt-VBR service category. If the count of discarded outgoing nrt-VBR cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded outgoing nrt-VBR cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded outgoing nrt-VBR cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded outgoing nrt-VBR cells are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards. This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.

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Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf CA NrtVbr **rxCellDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded incoming cells for nrt-VBR service category. If the count of discarded incoming nrt-VBR cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded incoming nrt-VBR cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming nrt-VBR cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded incoming nrt-VBR cells are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards. This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf CA NrtVbr **txFrameDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded outgoing frames for nrt-VBR service category. If the count of discarded outgoing nrt-VBR frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded outgoing nrt-VBR frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of

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discarded outgoing nrt-VBR frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded outgoing nrt-VBR frames are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards.

Mib AtmCore

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE AtmIf CA NrtVbr **rxFrameDiscardThreshold**

Access Read and write

Description This attribute specifies the threshold for a minor alarm for discarded incoming frames for nrt-VBR service category.

If the count of discarded incoming nrt-VBR frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set.

While the alarm is set, if the count of discarded incoming nrt-VBR frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming nrt-VBR frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded incoming nrt-VBR frames are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards.

Mib AtmCore

Values Decimal (0..4294967295)

Default 0

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GROUP Atmlf CA NrtVbr **Operational (Oper)**

Properties	Operational
Description	This group contains operational attributes for the nrt-VBR service category.
Mib	AtmCore

ATTRIBUTE Atmlf CA NrtVbr **opUnshapedTransmitQueueing (opUnshap)**

Access	Read only
Description	This attribute indicates the type of transmit queuing for unshaped nrt-VBR connections. A value of ***perVc*** indicates that unshaped connections use per-VC queuing. A value of ***common*** indicates that unshaped connections use the common queue for this service category. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***common*** is always indicated since these cards do not support per-VC queuing. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***perVc*** is always indicated since these cards do not support common queuing.
Mib	AtmCore
Values	perVc common
Default	No default

ATTRIBUTE Atmlf CA NrtVbr **epdOffset (epdO)**

Access	Read only
Description	This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level. Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled. The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***,

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1pOC48ChSmIrAtm, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.

Mib	AtmCore
Values	Decimal (0; 5..1024)
Units	cells
Default	No default

COMPONENT AtmIf CA AvailableBitRate (Abr)

Instance	Decimal (0)
Groups	GROUP AtmIf CA Abr Provisioned (Prov) GROUP AtmIf CA Abr Operational (Oper)
Scope	Device
Description	*AtmIf/n CA AvailableBitRate/n* This component manages the default characteristics of the available bit rate (ABR) service category. There is no support for ABR connections on any ATM cards at this time. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards only the default values of all attributes are supported.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA Abr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control the ABR service category for this interface.
Mib	AtmCore

ATTRIBUTE AtmIf CA Abr pool

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool which is to be used to support the available bit rate (ABR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to

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ABR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.

Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE Atmlf CA Abr cdvt

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the ABR service category (including connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute is used by the dynamic generic cell rate algorithm (DGCRA) policer on ATM cards which support this feature. On cards that do not support this feature, ABR UPC is enforced using PCR and CDVT.
Mib	AtmCore
Values	Decimal (1..1200000)
Units	microsec
Default	250

ATTRIBUTE Atmlf CA Abr txQueueLimit (txql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the ABR service category. It is used as the basis for setting the discard thresholds on ABR per-VC queues. For a per-VC queue, the actual queue length may be reduced depending on the peak cell rate. The discard thresholds are set at approximately 35, 75 and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2 and DP=1 respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a permanent connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. A value of ***autoConfigure*** means an appropriate value is selected based

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on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***1792***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***2304***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the value is ***10240***. For ***4pMRPosAtm*** cards, the value is ***40960*** for OC-12 ports. For MSA32 cards, the value is ***10240*** for OC-3 channels, and ***1792*** for DS1, or E1 channels. For ***1pOC12SmLrAtm*** cards, the value is ***6144***.

The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm, Vpc Tm,* or *Vpt Tm txQueueThresholds* attribute.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr txQueueLimit* value as their default.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components and the valid range is from ***5*** to ***30000*** inclusive.

Mib	AtmCore
Values	Decimal (5..63488) autoConfigure
Units	cells
Default	autoConfigure

ATTRIBUTE **AtmIf CA Abr** **minPerVcQueueLimit (minpervcql)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the ABR service category. This attribute is ignored for ***1pOC12SmLrAtm*** cards, because they do not support per-VC queues for the ABR service category. The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the peak cell rate of that queue (for standard *Vpt* VCCs, the shaping rate of the *Vpt*). This produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound. The value of this attribute must not be greater than the value of the

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txQueueLimit attribute. If this service category is used by Trunks, the value of the *minPerVcQueueLimit* attribute must be at least ***88***.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr minPerVcQueueLimit* value as their default.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components.

Mib	AtmCore
Values	Decimal (5..63488)
Units	cells
Default	88

ATTRIBUTE AtmIf CA Abr perVcQueueLimitReferenceRate (refrate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the ABR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the ABR service category. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***3685***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***14740***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards, the value is ***65511***. For ***4pMRPosAtm*** cards, the value is ***262044*** for OC-12 ports. For MSA32 cards, the value is ***65511*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***262044***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr*, and *Ubr* components. For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr perVcQueueLimitReferenceRate* value as their default.

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Mib	AtmCore
Values	Decimal (1..943396) autoConfigure
Units	cell/s
Default	autoConfigure

ATTRIBUTE **AtmIf CA Abr** **emissionPriority (ep)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the ABR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth. EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints: 1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR 2. Two different ATM service categories may share the same EP only if they are both shaped. 3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7). 4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP. 5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR. 6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR.

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Mib	AtmCore
Values	Decimal (0..7)
Default	6

ATTRIBUTE Atmlf CA Abr **fairnessPolicy**

Access	Read and write
Criticality	Process
Description	This attribute specifies the fairness policy which is applied to available bandwidth when performing the ER calculation in the ABR service category. This applies to any connection point performing explicit rate calculations. Each ABR connection is assigned a weight. Connections with a higher weight get a greater proportion of the available ABR bandwidth compared with connections that have lower weights. A value of ***mcr*** means the congestion fairness weight is based on the Minimum Cell Rate (MCR) of the connection. A value of ***pcr*** means the congestion fairness weight is based on the Peak Cell Rate (PCR) of the connection. A value of ***pcrMinusMcr*** means the congestion fairness weight is based on the difference between the Peak Cell Rate and the Minimum Cell Rate (PCR - MCR) of the connection. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards.
Mib	AtmCore
Values	mcr pcr pcrMinusMcr
Default	pcrMinusMcr

ATTRIBUTE Atmlf CA Abr **frttPortion**

Access	Read and write
Criticality	Process
Description	This attribute specifies the portion of the Fixed Round Trip Time (FRTT) which is added to each ABR call setup which traverses this interface. The FRTT for the entire call is the sum of the FRTT portions for each interface traversed by the call. FRTT is used by the ABR Source or Virtual Source to adjust the value of ICR according to the rules specified in the ATM Forum TM Version 4.0 specification. The *frttPortion* attribute includes propagation delay through the physical

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media, plus delays included by the transmission system, plus fixed components of switch processing delay.

This attribute is used by ATM Networking at call set-up time for ABR connections directed over this interface.

Mib	AtmCore
Values	Decimal (0..10000)
Units	msec
Default	5

ATTRIBUTE Atmlf CA Abr **abrConnectionType (abrType)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default type for ABR connections. It may be overridden for a permanent connection by specifying a value in the *abrConnectionType* attribute of the *Vcd Tm* or *Vpd Tm* component, or by other configuration options. For example, for ABR end point connections originating at this switch, the *Vcc Tm abrConnectionType* will show ***sourceDest*** regardless of the setting of this attribute. If the value is ***abrSwitch***, traversing ABR connections default to type ***abrSwitchEr*** or ***abrSwitchEfci***, depending on the card type. If the interface to which traffic is directed across the backplane is configured as type ***virtualSourceDest*** and this is a ATM IP FP, then connection points under this *AtmIf* are activated as type ***virtualSourceDest***. If the value is ***virtualSourceDest***, traversing ABR connections may be instantiated as one of the following types: ***abrSwitchEr***, ***abrSwitchEfci***, or ***virtualSourceDest***. A Virtual Source-Virtual Destination (VS/VD) boundary forms a break in the end to end flow of RM cells as defined in the ATM Forum Specification for Traffic Management Version 4.0. On ATM IP cards, a VS/VD boundary can be configured for a connection providing all of the following conditions are met: 1. the ABR connection is traversing (not terminating at) this interface; 2. both this interface and next hop interface to which traffic is directed across the backplane are located on ATM IP cards; 3. one or both connecting points are configured as ***virtualSourceDest***, 4. the next hop interface to which traffic is directed across the backplane is not configured as ***nonAbrInterworking***. If this attribute is set to ***nonAbrInterworking***, this interface is defined as a point of interworking between an ABR and a non-ABR connection. In this case the next hop interface to which traffic is directed across the backplane is activated as type ***sourceDest***.

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The *Vcc Tm* or *Vpc Tm abrConnectionType* operational attribute indicates what type of ABR connection was activated.

Mib: AtmCore

Values:
abrSwitch
virtualSourceDest
nonAbrInterworking

Default: abrSwitch

ATTRIBUTE Atmlf CA Abr **usageParameterControl (upc)**

Access: Read and write

Criticality: Process

Description: This attribute specifies the default usage parameter control (UPC) option for connections of the ABR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced on an ABR connection, non-conforming cells are discarded.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, a value of ***enforced*** means UPC for ABR connection is enforced as a Dynamic Generic Cell Rate Algorithm (DGCRA) based on the connection traffic descriptor.

For all other cards, a value of ***enforced*** means the connection enforces a single GCRA policer at the defined PCR and CDVT for this connection.

A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being discarded, they are merely counted in the UPC violations counts and passed on unchanged.

A value of ***disabled*** means UPC is disabled on the receive path for all ABR connections.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

Mib: AtmCore

Values:
enforced
disabled
monitored

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Default	disabled

ATTRIBUTE Atmlf CA Abr **initialCellRate (icr)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default Initial Cell Rate (ICR) parameter for ABR connections. ICR is the rate at which a source should send initially and after an idle period. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Setup Parameters Information Element. A value of ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection. A value of ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection. When the value is an explicit number, that number is used as the ICR, provided it is between MCR and PCR. If the value is below MCR, then MCR is used as ICR. If the value is above PCR, then PCR is used as ICR.
Mib	AtmCore
Values	Decimal (0..16777215) useMcr usePcr
Units	cell/s
Default	usePcr

ATTRIBUTE Atmlf CA Abr **rateDecreaseFactor (rdf)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default Rate Decrease Factor (RDF) for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Setup Parameters Information Element. The RDF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is ***8***, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (B-RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

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Mib	AtmCore
Values	Decimal (0..15)
Default	15

ATTRIBUTE Atmlf CA Abr **rateIncreaseFactor (rif)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default Rate Increase Factor (RIF) for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Setup Parameters Information Element. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is ***6***, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (B-RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR.
Mib	AtmCore
Values	Decimal (0..15)
Default	0

ATTRIBUTE Atmlf CA Abr **maxCellPerRmCell (nrm)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default number of user cells per Resource Management cell (NRM) for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled as the NRM parameter in the ABR Additional Parameters Information Element. NRM is the maximum number of cells an ABR source may transmit for each forward Resource Management (F-RM) cell. The count of the cells transmitted includes user cells, OAM cells, backward RM cells and the forward RM cell. Note that a value of 2 is not recommended even though it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are

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repeatedly transmitted and all data traffic is queued up indefinitely.

This attribute is ignored under all conditions where the *Vcc Tm* or *Vpc Tm* operational attribute *abrConnectionType* indicates ***explicitRateMarking***.

Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256)
Units	cells
Default	256

ATTRIBUTE Atmlf CA Abr **maxTimeBetweenRmCell (trm)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default time between Resource Management cells (TRM) for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Additional Parameters Information Element. TRM provides an upper bound on the time interval between forward Resource Management (F-RM) cells for an ABR source. Since the last F-RM cell was sent, if at least TRM time has elapsed and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell. This attribute is ignored under all conditions where the *Vcc Tm* or *Vcd Tm* operational attribute *abrConnectionType* is displayed as ***explicitRateMarking***. The provisioned value of 781 is signaled in the ABR Additional Parameters Information Element as 0. 1563 is signaled as 1. 3125 is signaled as 2. 6250 is signaled as 3. 12500 is signaled as 4. 25000 is signaled as 5. 50000 is signaled as 6. 100000 is signaled as 7.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
Units	microsec
Default	100000

ATTRIBUTE Atmlf CA Abr **cutoffDecreaseFactor (cdf)**

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Access	Read and write
Criticality	Process
Description	This attribute specifies the default Cutoff Decrease Factor (CDF) parameter for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Additional Parameters Information Element. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter. CRM is the limit of the number of forward Resource Management (F-RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the MCR, in which case the ACR is set to MCR.
Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64)
Default	16

ATTRIBUTE Atmlf CA Abr acrDecreaseTimeFactor (adtf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default Allowed Cell Rate Decrease Time Factor (ADTF) parameter for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Additional Parameters Information Element. ADTF is the time interval permitted between sending forward Resource Management (F-RM) cells before the Allowed Cell Rate (ACR) is decreased to the Initial Cell Rate (ICR). In other words, if the source does not transmit a forward RM cell for a period of ADTF centi-seconds (hundredths of a second), it will reduce its ACR to the value of its ICR. If ACR is already at or below ICR, further rate reductions are defined by the CRM ABR parameter.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	50

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ATTRIBUTE Atmlf CA Abr dgcraMaximumDelay (dgcraMaxDelay)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum delay for Dynamic General Cell Rate Algorithm (DGCRA) rate changes for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component. This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (B-RM) cell departing from this interface (in the backward direction) is expected to be observed at the interface (in the forward connection). This upper bound may be approximated as the round trip sum of the fixed and propagation delays and the maximum queuing delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the DGCRA. A larger value for this attribute implies a more lenient policer. When there is a decrease in the Allowed Cell Rate (ACR), the policer waits a correspondingly longer period of time before it enforces the new cell rate. The value of this attribute must be greater than or equal to *dgcraMinimumDelay*, since the maximum delay must be greater than or equal to the minimum delay.
Mib	AtmCore
Values	Decimal (1..16700000)
Units	microsec
Default	10000

ATTRIBUTE Atmlf CA Abr dgcraMinimumDelay (dgcraMinDelay)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default minimum delay for Dynamic General Cell Rate Algorithm (DGCRA) rate changes for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component. This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (B-RM) cell departing from this interface (in the backward direction) is expected to be observed at the interface (in the forward connection).

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This lower bound may be approximated as the round trip sum of the fixed and propagation delays between the ABR source and this interface.

The value of this attribute is used in policing an ABR connection using the DGCRA. A smaller value for this attribute implies a more lenient policer. When there is an increase in the Allowed Cell Rate (ACR), the policer waits for a correspondingly shorter period of time before it enforces the new cell rate.

The value of this attribute must be less than or equal to *dgcraMaximumDelay*, since the maximum delay must be greater than or equal to the minimum delay.

Mib	AtmCore
Values	Decimal (1..16700000)
Units	microsec
Default	1

ATTRIBUTE Atmlf CA Abr **holdingPriority (hpri)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC ABR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority.*
Mib	AtmCore
Values	0 1 2 3 4
Default	3

GROUP Atmlf CA Abr **Operational (Oper)**

Properties	Operational

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Description	This group contains operational attributes for the ABR service category. There is no support for ABR connections on any ATM cards at this time.
Mib	AtmCore

ATTRIBUTE Atmlf CA Abr **epdOffset (epdO)**

Access	Read only
Description	This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level. Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled. The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.
Mib	AtmCore
Values	Decimal (0; 5..1024)
Units	cells
Default	No default

COMPONENT Atmlf CA **UnspecifiedBitRate (Ubr)**

Instance	Decimal (0)
Groups	GROUP AtmIf CA Ubr Provisioned (Prov) GROUP AtmIf CA Ubr Operational (Oper)
Scope	Device

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Description	*AtmIf/n CA UnspecifiedBitRate/n* This component manages the default characteristics of the unspecified bit rate (UBR) service category.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA Ubr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the UBR service category.
Mib	AtmCore

ATTRIBUTE AtmIf CA Ubr maxVpcs (vpcs)

Access	Read and write
Description	This attribute specifies the maximum number of UBR VPCs that can be activated on this *AtmIf* component. The value of this attribute must not exceed the *maxVpcs* attribute of the parent *CA* component. A value of ***sameAsCa*** means the maximum number of VPCs is defined by the *AtmIf*/n *CA maxVpcs* attribute. Changes to this attribute do not affect existing VPCs. If the value is changed to a number smaller than the current number of active UBR VPCs, no new UBR VPCs are admitted until the number of active UBR VPCs drops below the value of this attribute. The current number of active UBR VPCs is indicated by the *Ubr/0 vpcUsage* operational attribute.
Mib	AtmCore
Values	Decimal (0..4096) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf CA Ubr maxVccs (vccs)

Access	Read and write
Description	This attribute specifies the maximum number of UBR VCCs that can be activated on this *AtmIf* component, including UBR *Vpt* VCCs. The value of this attribute must not exceed the *maxVccs* attribute of the parent *CA* component. A value of ***sameAsCa*** means the maximum number of VCCs is defined by the *AtmIf*/n *CA maxVccs* attribute.

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Changes to this attribute do not affect existing VCCs. If the value is changed to a number smaller than the current number of active UBR VCCs, no new UBR VCCs are admitted until the number of active UBR VCCs drops below the value of this attribute. The current number of active UBR VCCs is indicated by the *Ubr/0 vccUsage* operational attribute.

Mib — AtmCore

Values — Decimal (0..16384)
sameAsCa

Default — sameAsCa

ATTRIBUTE AtmIf CA Ubr **maxVpts (vpts)**

Access — Read and write

Description — This attribute specifies the maximum number of UBR VPTs that can be activated on this *AtmIf* component. The value of this attribute must not exceed the *maxVpts* attribute of the parent *CA* component.

A value of ***sameAsCa*** means the maximum number of VPTs is defined by the *AtmIf*/n *CA maxVpts* attribute.

Changes to this attribute do not affect existing VPTs. If the value is changed to a number smaller than the current number of active UBR VPTs, no new UBR VPTs are admitted until the number of active UBR VPTs drops below the value of this attribute. The current number of active UBR VPTs is indicated by the *Ubr/0 vptUsage* operational attribute.

Mib — AtmCore

Values — Decimal (0..4096)
sameAsCa

Default — sameAsCa

ATTRIBUTE AtmIf CA Ubr **pool**

Access — Read and write

Criticality — Process

Description — This attribute specifies the bandwidth pool which is to be used to support the unspecified bit rate (UBR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to UBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.

The amount of bandwidth reserved for each UBR connection is specified in the *minimumCellRate* attribute.

Mib — AtmCore

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Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE Atmlf CA Ubr minimumCellRate (mcr)

Access	Read and write
Description	This attribute specifies the minimum cell rate (MCR) which is allocated from the UBR bandwidth pool for each UBR connection which is admitted using Connection Admission Control (CAC) (excluding connections managed by a *Vpt CA*). UBR connections normally are serviced on a best effort basis, but this attribute allows allocation of a default minimum bandwidth for each connection.
Mib	AtmCore
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Atmlf CA Ubr txQueueLimit (txql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the UBR service category. It is used as the basis for setting both the queue length and the discard thresholds on both common and per-VC queues. For the common queue, the discard thresholds are set at approximately 35, 75, and 90 percent of the value of this attribute for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, common queuing is not available for the UBR service category. For a per-VC queue, the actual queue length may be reduced depending on the shaping rate of the connection (for standard *Vpt* VCCs, this is the shaping rate of the *Vpt*). The discard thresholds are set at approximately 35, 75, and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a provisioned connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, per-VC queues are not available for the UBR service category.

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For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the maximum size of the link-class queue for buffering the egress traffic of the UBR service category. This is similar to common queuing, except that each UBR connection maintains a per-VC utilization limit of the common queue specified for a provisioned connection by the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***1792***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***2304***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***10240***. For MSA32 cards, the value is ***10240*** for OC-3 channels, and ***1792*** for DS1, or E1 channels. For ***4pMRPosAtm*** cards, the value is ***40960***. For ***1pOC12SmLrAtm*** cards, the value is ***4096***. For ***1pOC48ChSmIrAtm*** cards, the value is ***20480.***

The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm, Vpc Tm,* or *Vpt Tm txQueueThresholds* attribute.

For standard VPTs, this attribute only applies when using common queuing. When using per-VC queuing, regardless of the *Vpt's* service category, standard VPTs use the *AtmIf CA NrtVbr txQueueLimit* attribute value as their default.

This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components and the valid range is from ***5*** to ***30000*** inclusive.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***63488*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

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Mib	AtmCore
Values	Decimal (5..1011840) autoConfigure
Units	cells
Default	autoConfigure

ATTRIBUTE AtmIf CA Ubr **minPerVcQueueLimit (minpervcql)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the UBR service category. This attribute is ignored for ***1pOC12SmLrAtm*** cards, because they do not support per-VC queues for the UBR service category. The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the shaping rate of that queue (shaping rate for the connection and for standard *Vpt* VCCs, the shaping rate of the *Vpt*). This produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound. The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks the value of the *minPerVcQueueLimit* attribute must be at least ***88***. For VPTs, this attribute does not apply. Regardless of *Vpt*'s service category, standard VPTs always use the *AtmIf CA NrtVbr minPerVcQueueLimit* value as their default. To determine the queue limit of a standard *Vpt Vcc*, the *txQueueLimit* attribute is scaled down by the *Vpt* shaping rate. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr*, and *Ubr* components. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***92*** to ***512000*** inclusive. For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

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For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840)
Units	cells
Default	88

ATTRIBUTE **AtmIf CA Ubr** **perVcQueueLimitReferenceRate (refrate)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the UBR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the UBR service category. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, ***2pSTM1Ch*** and ***4pDS3ChAtm*** cards, the value is ***3685***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***14740***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards, the value is ***65511***. For MSA32 cards, the value is ***65511*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***4pMRPosAtm cards,*** the value is ***262044***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr*, and *Ubr* components. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the maximum value is ***1416905***. For ***16pOC3PosAtm*** cards, the maximum value is ***353207***. For ***4pMRPosAtm*** cards, the maximum value is ***1412830*** for OC-12 ports and ***5651320*** for OC-48 ports. For all other cards, the maximum value is ***943396***. For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr perVcQueueLimitReferenceRate* value as their default.
Mib	AtmCore

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Values	Decimal (1..5651320) autoConfigure
Units	cell/s
Default	autoConfigure

ATTRIBUTE **AtmIf CA Ubr** **emissionPriority (ep)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the UBR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth. EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints: 1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR 2. Two different ATM service categories may share the same EP only if they are both shaped. 3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7). 4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP. 5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR. 6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards,

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emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. EP 0 must be used if traffic shaping is required.
4. EP 5 and EP 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order:
CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.

For ***1pOC48ChSmIrAtm*** cards, only the default value is supported.

Mib — AtmCore

Values — Decimal (0..7)

Default — 7

ATTRIBUTE Atmlf CA Ubr **trafficShaping (trShaping)**

Access — Read and write

Criticality — Process

Description — This attribute specifies the default traffic shaping option for connections of the UBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

This attribute does not apply to basic VPTs, or standard *Vpt VCCs*.

A value of ***disabled*** means traffic shaping cannot be enabled for any UBR connections.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled*** since traffic shaping is not supported for UBR connections on these cards.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute may be ***enabled*** only if the interface supports shaping, as defined by the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component. If that component does not exist, the value of this attribute must be ***disabled***.

If the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType* attribute indicates type 1 or 2, this attribute is ignored and traffic shaping is not applicable for that connection.

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A value of ***inverseUpc*** means traffic shaping for a connection is enabled according to the value of the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType*.

A value of ***inverseUpc*** when the *txTrafficDescType* is 3, 4, 5, or 9 (for UBR with MDCR connections), means linear traffic shaping is enabled. Linear traffic shaping uses a single static traffic shaping rate.

A value of ***inverseUpc*** when the *txTrafficDescType* is 6, 7, or 8, means inverse-UPC (also referred to as VBR or dual leaky bucket) traffic shaping is enabled. Inverse-UPC traffic shaping can burst above the sustained cell rate to the peak cell rate for the duration defined by maximum burst size. Inverse-UPC traffic shaping exactly conforms to the requirements of a dual leaky bucket UPC enforcer.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***inverseUpc*** is not available.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***inverseUpc*** is not supported and is equivalent to the value ***enabled***.

A value of ***enabled*** when the *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections), means traffic shaping for a connection is enabled using linear shaping.

Enabling or disabling traffic shaping may require a matching change to the *emissionPriority* attribute, and the *unshapedTransmitQueueing* attribute for this service category. Refer to those attributes for the complete description of the interactions.

Mib	AtmCore
Values	enabled disabled inverseUpc
Default	disabled

ATTRIBUTE **AtmIf CA Ubr** **shapeRecoupPolicy (recoup)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping recoup policy for the UBR service category. This is the policy which is used to recoup shaping opportunities which are lost when more than one connection schedules a cell for the same transmit opportunity. In this case, one connection is scheduled and the cell from the other connection is delayed by one cell time. This attribute affects how the transmit time is calculated for the next cell on the delayed connection. This attribute is ignored if this service category is not shaped.

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This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

When the connection which was delayed schedules the next cell to transmit, it may calculate the time as a difference from either the previous actual cell transmit time, or the time when the previous cell should have been transmitted.

A value of ***maximumEfficiency*** results in each connection trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell should originally have been sent. Cell delay variation (CDV) occurs in this case since the cells are sent with less than the shaping delay between them. However, in general the shaper recovers (recoups) lost opportunities and improves efficiency.

A value of ***minimumCdv*** results in connections not trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell was actually transmitted. This minimizes CDV, but results in missed cell opportunities.

Mib	AtmCore
Values	minimumCdv maximumEfficiency
Default	maximumEfficiency

ATTRIBUTE **Atmlf CA Ubr** **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default queuing option for unshaped connections of the UBR service category. This attribute controls whether common or per-VC queuing is used. A value of ***perVc*** means that each connection has its own buffering and queue limits. A value of ***common*** means that cells are queued in First In First Out order on a common queue for this service category. The common queue has one set of congestion control levels for all cells enqueued on it. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, if the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component

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permits shaping for this interface, then this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component does not permit shaping for this interface, then this attribute may take the values ***common***, or ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean common queuing. An override to this default may be specified for a provisioned connection under the *Vcd Tm*, or *Vpd Tm* component. There is one common queue which is shared by the nrt-VBR, ABR, and UBR service categories.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmlrAtm*** cards, the value ***perVc*** is not supported since these cards do not support per-VC queuing. The value ***autoConfigure*** is interpreted to mean common queuing.

For ***4pOC12SmlrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmlrAtm*** cards, the value ***common*** is not supported since these cards do not support common queuing. The value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmlrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, if traffic shaping for this service category is disabled, this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If traffic shaping for this service category is not disabled, the only permitted values are ***perVc*** and ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, no more than 32,000 connections on the FP can use per-VC queuing. The remaining connections must use common queuing. The *Lp Eng Arc perVcQueueUsage* attribute indicates the number per-VC queues that are currently in use.

The value of the operational *opUnshapedTransmitQueueing* attribute of this component indicates whether the transmit queuing is ***perVc*** or ***common***.

Mib	AtmCore
Values	perVc common autoConfigure
Default	autoConfigure

ATTRIBUTE **Atmlf CA Ubr** **usageParameterControl (upc)**

Access	Read and write
Criticality	Process

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Description	This attribute specifies the default usage parameter control (UPC) option for connections of the UBR service category. This attribute is ignored if the *rxTrafficDescriptorType* indicates 1 or 2. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged. A value of ***disabled*** means UPC is disabled on the receive path for all UBR connections. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***. For ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled***.
Mib	AtmCore
Values	enforced disabled monitored
Default	disabled

ATTRIBUTE **Atmlf CA Ubr** **weightPolicy**

Access	Read and write
Criticality	Process
Description	This attribute specifies the policy which is applied when calculating the fairness weight for unshaped connections of the UBR service category. The fairness weight for a connection determines the relative amount of bandwidth which that connection obtains, compared to other connections in the same service category. Connections with equal weight get equal transmit opportunities. Connections with higher weights get more transmit opportunities compared with connections that have lower weights. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. The fairness weight for a connection is directly proportional to the value of one of the traffic descriptor parameters for that connection. This attribute

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specifies which traffic descriptor parameter is used for connections of the UBR service category.

A value of ***mcr*** means the fairness weight is proportional to the default minimum cell rate (MCR) for UBR connections. If the default minimum cell rate is 0, all UBR connections get a minimum weight, which is 1.

A value of ***pcr*** means the fairness weight is proportional to the transmit peak cell rate (PCR) of a connection. Connections with a higher PCR have a higher fairness weight. Connections with *txTrafficDescType* 1 or 2 get a minimum weight, which is 1.

A value of ***ecr*** means the fairness weight is proportional to the equivalent cell rate (ECR) of a connection as calculated by connection admission control (CAC). Connections with a higher ECR have a higher fairness weight. Connections with an ECR of 0 get a minimum weight, which is 1.

The weight of a connection is visible in the *Vcc Tm, Vpc Tm,* or *Vpt Tm weight* attribute.

This attribute does not apply to basic VPTs and standard *Vpt* VCCs.

This attribute is ignored if the value of the *unshapedTransmitQueueing* attribute is ***common***.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib — AtmCore

Values
mcr
pcr
ecr

Default — ecr

ATTRIBUTE Atmlf CA Ubr **forceTagging (tag)**

Access — Read and write

Criticality — Process

Description — This attribute specifies the default force tagging (CLP=1) value of all cells for all UBR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enabled*** means CLP is set to 1 for all cells. This is in conformance with the ATM Forum TM4.0 UBR.2 service definition.

A value of ***disabled*** means CLP is unchanged for all cells. This is in conformance with the ATM Forum TM4.0 UBR.1 service definition.

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For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction.

This attribute does not apply to any type of *Vpt*.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib	AtmCore
Values	enabled disabled
Default	disabled

ATTRIBUTE Atmlf CA Ubr **cdvt**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the UBR service category (including connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..1200000)
Units	microsec
Default	250

ATTRIBUTE Atmlf CA Ubr **holdingPriority (hpri)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC UBR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released.

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This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority.*

Mib: AtmCore

Values:
0
1
2
3
4

Default: 3

ATTRIBUTE Atmlf CA Ubr svcMpHoldingPriority (svcMpHpri)

Access: Read and write

Criticality: Process

Description: This attribute specifies the default holding priority which applies to SVC UBR point-to-multipoint connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released.

This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority.*

Mib: AtmCore

Values:
0
1
2
3
4

Default: 3

ATTRIBUTE Atmlf CA Ubr txCellDiscardThreshold

Access: Read and write

Description: This attribute specifies the threshold for a minor alarm for discarded outgoing cells for UBR service category.

If the count of discarded outgoing UBR cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set.

While the alarm is set, if the count of discarded outgoing UBR cells is still greater than the provisioned value of this attribute in the subsequent 15

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minute intervals, the alarm is not set again. If the count of discarded outgoing UBR cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded outgoing UBR cells are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards.

This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.

Mib — AtmCore

Values — Decimal (0..4294967295)

Default — 0

ATTRIBUTE Atmlf CA Ubr **rxCellDiscardThreshold**

Access — Read and write

Description — This attribute specifies the threshold for a minor alarm for discarded incoming cells for UBR service category.

If the count of discarded incoming UBR cells is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set.

While the alarm is set, if the count of discarded incoming UBR cells is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming UBR cells drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared.

Provisioned value of '0' means discarded incoming UBR cells are not monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm*** and ***2pJ6MAtm*** cards.

This attribute is not applicable for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.

Mib — AtmCore

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf CA Ubr **txFrameDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded outgoing frames for UBR service category. If the count of discarded outgoing UBR frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded outgoing UBR frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded outgoing UBR frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded outgoing UBR frames are not monitored and no alarm is generated. While the alarm is set, if the value of this attribute is changed, the alarm is cleared. This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf CA Ubr **rxFrameDiscardThreshold**

Access	Read and write
Description	This attribute specifies the threshold for a minor alarm for discarded incoming frames for UBR service category. If the count of discarded incoming UBR frames is greater than the provisioned value of this attribute in a 15 minute interval, the alarm is set. While the alarm is set, if the count of discarded incoming UBR frames is still greater than the provisioned value of this attribute in the subsequent 15 minute intervals, the alarm is not set again. If the count of discarded incoming UBR frames drops below the provisioned value of this attribute in a 15 minute interval the alarm is cleared. Provisioned value of '0' means discarded incoming UBR frames are not

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monitored and no alarm is generated.

While the alarm is set, if the value of this attribute is changed, the alarm is cleared.

This attribute is not applicable for ***3pOC3MmAtm, 3pOC3SmAtm, 3pE3Atm, 3pDS3Atm, 3pE1Atm, 3pDS1Atm, 8pE1Atm, 8pDS1Atm, 2pJ6MAtm, 4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards.

Mib	AtmCore
Values	Decimal (0..4294967295)
Default	0

GROUP Atmlf CA Ubr **Operational (Oper)**

Properties	Operational
Description	This group contains operational attributes for the UBR service category.
Mib	AtmCore

ATTRIBUTE Atmlf CA Ubr **opUnshapedTransmitQueueing (opUnshap)**

Access	Read only
Description	This attribute indicates the type of transmit queuing for unshaped UBR connections. A value of ***perVc*** indicates that unshaped connections use per-VC queuing. A value of ***common*** indicates that unshaped connections use the common queue for this service category. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***common*** is always indicated since these cards do not support per-VC queuing. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***perVc*** is always indicated since these cards do not support common queuing.
Mib	AtmCore
Values	perVc common
Default	No default

ATTRIBUTE Atmlf CA Ubr **vpcUsage**

Access	Read only
Description	This attribute indicates the number of active UBR VPCs under this interface. It includes switched and permanent connections.

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Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Atmlf CA Ubr **vccUsage**

Access	Read only
Description	This attribute indicates the number of active UBR VCCs under this interface. It includes switched and permanent connections and *Vpt* VCCs.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Atmlf CA Ubr **vptUsage**

Access	Read only
Description	This attribute indicates the number of active UBR VPTs under this interface.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Atmlf CA Ubr **epdOffset (epdO)**

Access	Read only
Description	This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level. Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled. The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.
Mib	AtmCore

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Values	Decimal (0; 5..1024)
Units	cells
Default	No default

COMPONENT Atmlf VirtualPathConnection (Vpc)

Instance	Decimal (0..4095)
Groups	GROUP AtmIf Vpc OsiState (State) GROUP AtmIf Vpc Operational (Oper) GROUP AtmIf Vpc ConnectionInfo (ConnInfo) GROUP AtmIf Vpc Status GROUP AtmIf Vpc Statistics (Stats) GROUP AtmIf Vpc Performance (Perf)
Scope	Device
Description	*AtmIf/n VirtualPathConnection/vpi* This component represents a virtual path connection (VPC). The instance value defines the VPI value for this connection—for example, *Vpc/120* defines a path with a VPI of 120. A *VPC* is always a relay point. and as such can only have a either a *NRP* or a *Loop* subcomponent.
Mib	AtmCore
Subcomponents	COMPONENT AtmIf Vpc VirtualPathDescriptor (Vpd)
Opt. Subcomp.	COMPONENT AtmIf Vpc Loop (Loop) COMPONENT AtmIf Vpc NailedUpRelayPoint (Nrp) COMPONENT AtmIf Vpc SourcePvp (Src) COMPONENT AtmIf Vpc MulticastNailedUpRelayPoint (Mnrp) COMPONENT AtmIf Vpc MplsConnection (MplsCon)
Dyn. Subcomp.	COMPONENT AtmIf Vpc RelayPoint (Rp) COMPONENT AtmIf Vpc TrafficManagement (Tm) COMPONENT AtmIf Vpc PerformanceMonitoring (Pm) COMPONENT AtmIf Vpc PathTraceRecord (PTRecord) COMPONENT AtmIf Vpc RerouteInfo (RerInfo)
Dyn. Subcomp.	COMPONENT AtmIf Vpc DestinationPvp (Dst)
Common Verbs	Help List Display Add DELete

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VERB TRACE **AtmIf Vpc**

Impact: Service

Description:

TRACE AtmIf/n Vpc/vpi
TRACE -s -v -a -e AtmIf/n Vpc/vpi
TRACE -p AtmIf/n Vpc/vpi

This command traces the path of an intra-network segment of a connection. It displays the names of interface and connection components found along this segment of a connection path. The trace output also includes the *Virtual Path Terminator (VPT)* at the end of the path, should one exist.

The option for the OAM trace is as follows:

-p: Selects the Nortel Networks proprietary OAM Connection Management Trace instead of the proprietary OAM Legacy Loopback Trace. If no options are provided, the default configuration uses the Legacy Loopback Trace.

The options for the signaling trace are as follows:

-s: Selects the PNNI signaling call trace instead of the Nortel Networks proprietary OAM-based trace procedure. Option *-s* must be present if any one of options *-v, -a*, and *-e* are present. Otherwise, it defaults to the OAM-based trace procedure.

-v: Requests that vpi value should be collected along the trace. This option is only valid when the *-s* option is present.

-a: Requests that the call reference/end point reference values be collected along the trace. This option is only valid when the *-s* option is present.

-e: Used on point-to-multipoint connections to specify the end point reference value that indicates which party to trace. If no *-e* option is used for a point-to-multipoint connection, the default traces the path with the endpoint reference 0, which is the first party. This option is only valid when the *-s* option is present.

Only one connection trace is supported at a time. An error message is returned if a response from the network is not received within 30 seconds.

If the verb is issued with the *-s* option for the *Vpc/vpi* values that are not active or were not created by signaling (for example, control channels), the command is refused.

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VERB CLEAR **Atmlf Vpc**

Impact	Service
Description	*CLEAR AtmIf/n Vpc/vpi* The *Clear* command applies to a dynamic *AtmIf/n Vpc/vpi* created for an SVP, or for the SVP segments of an SPVP. It does not apply to a provisioned *AtmIf/n Vpc/vpi*. This means that an SPVP can be cleared from its destination end or at any intermediate point, but not from the source end.

GROUP **Atmlf Vpc** **OsiState (State)**

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

ATTRIBUTE **Atmlf Vpc** **adminState (osiAdmin)**

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

ATTRIBUTE **Atmlf Vpc** **operationalState (osiOper)**

Access	Read only

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

ATTRIBUTE Atmlf Vpc usageState (osiUsage)

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

GROUP Atmlf Vpc Operational (Oper)

Properties	Operational
Description	This group contains operational information for a *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc connectionPointType (cpt)

Access	Read only
Description	This attribute reflects the role of the connection component at this interface. A value of ***connectionEndPoint*** indicates that user cells, end-to-end OAM

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cells, and segment OAM cells are processed by the connection component.

A value of ***segmentEndPoint*** indicates that user cells and end-to-end OAM cells are relayed by the connection component, while segment OAM cells are processed by the connection component.

A value of ***connectingPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are relayed by the connection component.

A value of ***unknown*** indicates that the connection component is inactive.

Mib	AtmCore
Values	connectionEndPoint segmentEndPoint connectingPoint unknown
Default	No default

GROUP Atmlf Vpc ConnectionInfo (ConnInfo)

Properties	Operational
Description	This group contains operational connection characteristics information for a *Vcc* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc distributionType (distrbt)

Access	Read only
Description	This attribute indicates the way data is distributed in the connection. A value of ***pointToPoint*** indicates this connection point is part of a point-to-point connection. A value of ***pointToMultipoint*** indicates this connection point is part of a point-to-multipoint connection.
Mib	AtmCore
Values	pointToPoint pointToMultipoint
Default	pointToPoint

ATTRIBUTE Atmlf Vpc numLeaves (nlvs)

Access	Read only
Description	This attribute indicates the number of destination leaves of the connection. If the *distributionType* is ***pointToPoint*** the value of this attribute is 0.

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Mib	AtmCore
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE Atmlf Vpc callDirection (cdir)

Access	Read only
Description	This attribute indicates the direction of the call setup request for an SVC. A value of ***fromLink*** means that the call setup originated from the link. A value of ***toLink*** means that the call setup was directed to the link. For PVC connections, the value of this attribute is ***notApplicable.*** For SPVC connections, the value of this attribute is ***notApplicable*** for *Vccs* with the *SourcePVC* and *DestinationPVC* subcomponents. For Signaling channels, the value of this attribute is ***notApplicable***.
Mib	AtmCore
Values	fromLink toLink notApplicable
Default	notApplicable

GROUP Atmlf Vpc Status

Properties	Operational
Description	This group contains operational status information for a *Vcc, Vpc* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc operStatus (opStat)

Access	Read only
Description	This attribute indicates the present operational status of the *Vcc, Vpc* or *Vpt* component. Its value is dependent upon the current state of the *segLinkSideLoopbackState* and *endToEndLoopbackState* attributes. The value is ***end2endUp*** when the *endToEndLoopbackState* is ***good*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***end2endDown*** when the *endToEndLoopbackState* is ***bad*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***unknown*** and the *segLinkSideLoopbackState*

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is ***good***.

The value is ***localDown*** when *segLinkSideLoopbackState* is ***bad***.

The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***notApplicable*** and the *segLinkSideLoopbackState* is ***good***.

The value is ***unknown*** when the *endToEndLoopbackState* is either ***unknown*** or ***notApplicable*** and the *segLinkSideLoopbackState* is ***unknown***.

Mib AtmCore

Values
unknown
end2endUp
end2endDown
localUpEnd2endUnknown
localDown

Default No default

ATTRIBUTE AtmIf Vpc localFailureCause

Access Read only

Description This attribute indicates the failure cause of the *Vcc, Vpc* or *Vpt* component. A value of ***noFailure*** indicates that there is currently no bandwidth related failure for this connection.

A value of ***portDown*** indicates that the interface corresponding to the parent *AtmIf* is down.

A value of ***localBwLoss*** indicates that the *AtmIf* has lost some, but not all bandwidth, and as a result, this connection has been released.

A value of ***notAdmitted*** indicates that this connection has failed to be admitted by the Connection Admission Control (CAC) algorithm.

A value of ***appNotRegistered*** indicates that there is no application registered to use this connection. This may be the case, for example when there is a *Vcc Test* application, but the test has not been started. Check the status of the application to determine why it is not functional.

A value of ***disabledByApp*** indicates that the application using this connection has requested that the connection be disabled. An example is a connection used by a trunk application where the trunk has timed out on an attempt to stage. Check the application to determine why it is not fully functional.

A value of ***bwReduced*** indicates that this connection is operating in a reduced bandwidth state. It is a bandwidth elastic connection which

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currently has been allocated less than the requested (equivalent) bandwidth.

A value of ***vpDown*** indicates that this connection has been notified of a fault detected at the associated VP-layer. A value of ***vpDown*** is applicable for *Vpt Vcc*s only.

Mib	AtmCore
Values	noFailure localBwLoss portDown notAdmitted appNotRegistered disabledByApp bwReduced vpDown
Default	No default

ATTRIBUTE Atmlf Vpc troubled

Access	Read only
Description	This attribute indicates whether or not the connection is in a troubled state. Connections become troubled because of OAM failures; when one of the attributes *segLinkSideLoopbackState*, *segSwitchSideLoopbackState*, *endToEndLoopbackState*, *aisState* (when receiving AIS cells only) or *rdiState* go bad, this attribute is set to ***yes***; otherwise it is set to ***no***.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpc segLinkSideLoopbackState (segLkLbkState)

Access	Read only
Description	This attribute contains the current state of the link-side segment loopback for this connection. Link-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the link (port). The value of this attribute is dependent upon the current setting of the *segLinkSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***.

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The value is ***good*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the segment link side loopback is working.

The value is ***bad*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the link side segment loopback is not working.

The value is ***unknown*** when the *segLinkSideLoopback* is ***off***.

The value is ***unknown*** when the value of the *segLinkSideLoopback* attribute is ***on***, the *connectionPointType* attribute is set to ***segmentEndPoint*** or ***connectionEndPoint***, and the segment link side loopback has not yet been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute.

Mib — AtmCore

Values
good
bad
unknown
notApplicable

Default — No default

ATTRIBUTE Atmlf Vpc **segSwitchSideLoopbackState (segSwLbkState)**

Access — Read only

Description — This attribute contains the current state of the switch-side segment loopback for this connection. Switch-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the bus. The value of this attribute is dependent upon the current setting of the *segSwitchSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable).

The value is only applicable when the *connectionPointType* is a ***segmentEndPoint***.

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or ***connectionEndPoint***.

The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***.

The value is ***good*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback is working.

The value is ***bad*** when the *segSwitchSideLoopback* is ***on***, the

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connectionPointType is a ***segmentEndPoint*** and the switch side segment loopback is not working.

The value is ***unknown*** when the *segSwitchSideLoopback* is ***off***.

The value is ***unknown*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback has not been determined.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

Default: No default

ATTRIBUTE Atmlf Vpc endToEndLoopbackState (eeLbkState)

Access: Read only

Description: This attribute contains the current state of the end-to-end loopback for this connection. Its value is dependent upon the current setting of the *endToEndLoopback* provisionable attribute and the connection point type as specified by the *connectionPointType* attribute.

The value is only applicable when the *connectionPointType* is a ***connectionEndPoint***.

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or s***egmentEndPoint***.

The value is ***notApplicable*** when the *distributionType* is a ***pointToMultipoint***.

The value is ***good*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is working.

The value is ***bad*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is not working.

The value is ***unknown*** when the *endToEndLoopback* is ***off***.

The value is ***unknown*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback status has not been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute.

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Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE Atmlf Vpc rxOamCellCongestionState (rxOamCongState)

Access	Read only
Description	This attribute contains the current state of the receive side OAM cell congestion for this connection. Its value reflects whether the rate of received OAM cells for this connection is below a specified threshold. The connection maintains a count of the number of OAM cells which are terminated per second. Once that count exceeds the specified threshold, extraction of all OAM cells for this connection is disabled for a period of one minute. This is a congestion management mechanism to prevent the processor from being overloaded with handling OAM cells for a particular connection. This mechanism ensures that tasks, such as trunks obtain enough processor cycles to remain in service, and are not adversely affected by excessive rate of OAM cells on a particular connection. The value is ***good*** when the rate of received OAM cells is less than the allowed threshold. The value is ***bad*** when the arrival rate has exceeded the allowed threshold. It remains ***bad*** for one minute, before returning to ***good*** again. During this timeout, extraction of all OAM cells is disabled for this connection. As a result, other loopback failure conditions may occur. The value is ***unknown*** when the application has not yet begun to use this connection. An example is the *Test* component before a test has been started. Each type of OAM cell is counted separately. The threshold for AIS cells is three cells per second. If more than three AIS cells are received within a one second interval, this attribute is set to ***bad***. The threshold for RDI cells and each loopback type is also three, but the threshold for trace cells is 250 per second. The state of this attribute has no direct effect on the value of the *operStatus* attribute or on the number of troubled connections.
Mib	AtmCore
Values	good bad unknown notApplicable

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Default	No default

ATTRIBUTE Atmlf Vpc aisState

Access	Read only
Description	This attribute contains the current state of the Alarm Indication Signal for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE Atmlf Vpc rdiState

Access	Read only
Description	This attribute indicates the current state of the Remote Defect Indication for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad

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	unknown notApplicable
Default	No default

GROUP Atmlf Vpc Statistics (Stats)

Properties	Operational
Description	This group contains traffic statistics for a *Vcc*, *Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc txCell

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection. The counter wraps to zero if it exceeds its maximum value of (2**64)-1. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this attribute does not include locally generated AIS cells. Specifically AIS cells generated on the destination side of a SPVC or SPVP will not be included in this attribute, nor will AIS cells generated on the link side of a PVC or PVP.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc txCellClp (txClp)

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection with the CLP=1. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc txCellDiscard (txcd)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection that have been discarded. Discarded cells are not counted in the *txCell* attribute.

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Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc **txCellDiscardClp (txcdClp)**

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection with CLP=1 that have been discarded.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count is included in the *txCellDiscard* attribute. Discarded cells are not counted in the *txCellClp* attribute.

Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscardClp* values for all connections associated with the *Vpt*.

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When both ingress and egress of a port is down, txcells are silently discarded.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc txFrameDiscard (txfd)

Access	Read only
Description	This attribute counts the number of frames received from the backplane on this connection that have been discarded. Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtmcards***, this attribute does not count frames discarded due to congestion at the main traffic management device toward the link. This count is independent of the *txCell* or *txCellDiscard* attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscard* values for all connections associated with the *Vpt*. Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscard* attribute. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc txFrameDiscardClp (txfdClp)

Access	Read only

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Description	This attribute counts the number of discarded frames on this connection that were received from the backplane and composed of one or more CLP=1 cells. Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtmcards***, this attribute does not count frames discarded due to congestion at the main traffic management device toward the link. This count is included in the *txFrameDiscard* attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscardClp* values for all connections associated with the *Vpt*. Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscardClp* attribute. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpc rxCell

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells that have been discarded by the interface due to non-conformance with UPC. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this

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count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when the PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down and is increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc rxCellClp (rxClp)

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection with the CLP=1. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc rxCellDiscard (rxcd)

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection that have been discarded. This count is included in the *rxCell* attribute.

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This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells discarded due to non-conformance with UPC.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscard* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscard* attribute.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down, regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or only F4 and F5 OAM cells are transmitted.

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The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc rxCellDiscardClp (rxcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection with CLP=1 that have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscardClp* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscardClp* attribute. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc rxFrameDiscard (rxfd)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have been discarded. This count is independent of the

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rxCellDiscard attribute.

This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute does not count frames discarded due to UPC.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc rxFrameDiscardClp (rxfdClp)

Access	Read only
Description	This attribute counts the number of discarded frames on this connection that were received from the interface and composed of one or more CLP1 cells. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscard* attribute. This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute does not count frames discarded due to UPC. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all

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rxFrameDiscardClp values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib AtmCore

Values Long Integer

Default No default

ATTRIBUTE Atmlf Vpc rxUpcViolationOnEnforcer1 (rxEnforcer1)

Access Read only

Description This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

When the value of the *rxTrafficDescType* attribute for this connection is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections) Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1.

When the value of the *rxTrafficDescType* attribute for this connection is 9 (for ABR connections), Enforcer 1 performs the Dynamic Generic Cell Rate Algorithm (DGCRA) used for the Available Bit Rate (ABR) service category.

If UPC is enforced all non-conforming cells are discarded by this enforcer. These discarded cells are included in the *rxCellDiscard* attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer1* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib AtmCore

Values Long Integer

Units cells

Default No default

ATTRIBUTE Atmlf Vpc rxUpcViolationOnEnforcer2 (rxEnforcer2)

Access Read only

Description This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only

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applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

This attribute is only applicable if the value of the *rxTrafficDescType* attribute for this connection is 4, 5, 6, 7, or 8.

When the value of the *rxTrafficDescType* attribute is 4, or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0.

When the value of the *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1.

When the value of the *rxTrafficDescType* attribute is 7, or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0.

If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* values of 4, 6, and 7. It tags non-conforming cells for *rxTrafficDescType* values of 5, and 8. Discarded cells are counted in the rxCellDiscard attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer2* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc rxAal5FrameError (rxfer)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have AAL5 length errors or AAL5 CRC errors. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed. AAL5 length or CRC errors typically occur because of cell discards due to congestion, UPC, or due to corruption of data between the AAL5 segmentation and reassembly end points.

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This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameError* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpc **rxAal5FrameAbort (rxfa)**

Access	Read only

Description

This attribute counts the number of frames received from the interface on this connection that have the AAL5 length field set to zero.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

An AAL5 length of zero is an indication by the far end segmentation point, to this reassembly point, that the frame is to be discarded without reassembly. This mechanism is typically used by a segmentation point if it detects an error in a frame after some of the cells belonging to that frame have already been transmitted.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameAbort* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

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GROUP Atmlf Vpc Performance (Perf)

Properties	Operational
Description	This group contains operational attributes which keep performance statistics about the behavior of the connection.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc lastMinimumCtd (lastminctd)

Access	Read only
Description	This attribute indicates the minimum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpc lastMaximumCtd (lastmaxctd)

Access	Read only
Description	This attribute indicates the maximum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***.

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The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason.

The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection.

The value is ***noMeasurement*** when the switch-side loopback is not working.

The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.

Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpc lastAverageCtd (lastavectd)

Access	Read only
Description	This attribute indicates the average of all calculated cell transfer delay values for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec

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Default	No default

ATTRIBUTE Atmlf Vpc currentCtd (currctd)

Access	Read only
Description	This attribute indicates the most recent cell transfer delay value calculated for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpc lastCtdSampleSize (lastsamplectd)

Access	Read only
Description	This attribute indicates the number of loopback cells sampled for cell transfer delay calculations during the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval of TODA is disabled.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

COMPONENT Atmlf Vpc VirtualPathDescriptor (Vpd)

Groups	GROUP Atmlf Vpc Vpd Loopback (Lbk) GROUP Atmlf Vpc Vpd Accounting (Acct)
Scope	Device

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Description	*AtmIf/n Vpc/vpi VirtualPathDescriptor* The *Vpd* component contains provisioning information about its parent *Vpc* component.
Mib	AtmCore
Subcomponents	COMPONENT AtmIf Vpc Vpd TrafficManagement (Tm)
Opt. Subcomp.	COMPONENT AtmIf Vpc Vpd PerformanceMonitoring (Pm)
Common Verbs	Help List Display

GROUP AtmIf Vpc Vpd Loopback (Lbk)

Properties	Provisioned
Description	This group contains the provisionable loopback attributes for a *Vcc, Vpc,* or *Vpt* component. Note that certain loopback requests may not be possible on a given connection. In such cases, the corresponding operational loopback attribute in the *Status* group of the *Vcc, Vpc,* or *Vpt* component indicates ***notApplicable*** and the requested loopback is not performed. If loopbacks are provisioned to be on, and for any reason the segment or end-to-end OAM loopback cells are not relayed, the connection component becomes troubled, and user cell traffic may be discarded. If loopbacks are provisioned to be on, all of the nodes in the segment, and external networks which are in the end-to-end connection must relay the OAM loopback cells.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Vpd segLinkSideLoopback (segLkLbk)

Access	Read and write
Description	This attribute specifies whether link-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the link-side segment loopback insertion for the connection is based on the *segLinkSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has link-side segment loopback insertion turned on, then link-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means link-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that link-side segment loopback insertion is not possible if the value

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of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***. Link-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *segLinkSideLoopbackState* attribute indicates ***notApplicable*** and link-side segment loopback insertion is not performed.

Link-side segment loopback insertion is always possible on a *Vpt*.

Mib: AtmCore

Values:
on
off
sameAsInterface

Default: sameAsInterface

ATTRIBUTE Atmlf Vpc Vpd segSwitchSideLoopback (segSwLbk)

Access: Read and write

Description: This attribute specifies whether switch-side segment loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the switch-side segment loopback insertion for the connection is based on the *segSwitchSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has switch-side segment loopback insertion turned on, then switch-side segment loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means switch-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that switch-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint*** or ***connectionEndPoint***. Switch-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint*** In such cases, the operational *segSwitchSideLoopbackState* attribute indicates ***notApplicable*** and switch-side segment loopback insertion is not performed.

Switch-side segment loopback is never possible on a *Vpt*.

Mib: AtmCore

Values:
on
off
sameAsInterface

Default: sameAsInterface

ATTRIBUTE Atmlf Vpc Vpd endToEndLoopback (eeLbk)

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Access	Read and write
Description	This attribute specifies whether end-to-end loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the end-to-end loopback insertion for the connection is based on the *endToEndLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has end-to-end loopback insertion turned on, then end-to-end loopback insertion is also on for the connection. A value of ***on***, or ***off*** means end-to-end loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that end-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *endToEndLoopbackState* attribute indicates ***notApplicable*** and end-to-end loopback insertion is not performed. End-to-end loopback insertion is always possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE **Atmlf Vpc Vpd** **mCastConnectionType (connType)**

Access	Read and write
Criticality	Component
Description	This attribute specifies if this *Vcc* or *Vpc* is part of point-to-point or point-to-multiPoint connection. A value of ***pointToMultiPointRoot*** must be set when this *Vcc* has an *Msrc* or an *Mnrp* subcomponent, or this *Vpc* has an *Mnrp* subcomponent. A value of ***pointToMultiPointLeaf*** must be set when this *Vcc* or *Vpc* has a *Nrp* subcomponent and its *nextHop* attribute is linked to a *Mnrp* component. Otherwise a value of ***pointToPoint*** must be set.
Mib	AtmCore

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Values	pointToPoint (ptp) pointToMultipointRoot (pmpRoot) pointToMultipointLeaf (pmpLeaf)
Default	pointToPoint

GROUP Atmlf Vpc Vpd Accounting (Acct)

Properties	Provisioned
Description	This group contains the provisionable ATM accounting attributes for a *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc Vpd correlationTag (tag)

Access	Read and write
Description	This attribute specifies a unique identifier for each end of a PVC. It that may be used by downstream processing systems to correlate accounting records issued at different nodes in the network. The attribute can be up to 64 bytes long. If it is less than 64 bytes, it is zero filled on the right to create a 64 byte value. The resulting value is recorded in the attribute *callConnId* for this PVC's ATM accounting records. If the value is a null string then this PVC does not have any accounting records generated for it.
Mib	AtmCore
Values	String (0..64, ASCII)
Default	""

COMPONENT Atmlf Vpc Vpd TrafficManagement (Tm)

Groups	GROUP Atmlf Vpc Vpd Tm Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd TrafficManagement,* *AtmIf/n Vpc/vci Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci Vcd TrafficManagement* This component contains provisioned traffic management attributes of a connection. It is added automatically when a *Vcc*, *Vpc,* or *Vpt* is added in

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provisioning mode. It is a mandatory subcomponent of the *Vcd* or *Vpd* component.

Mib	AtmCore
Opt. Subcomp.	COMPONENT AtmIf Vpc Vpd Tm AvailableBitRate (Abr)
Common Verbs	Help List Display

GROUP AtmIf Vpc Vpd Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains traffic related provisionable attributes for the *Vcc, Vpc,* and *Vpt* components. Changing any of the attributes in this group causes a service interruption on the *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Vpd Tm txTrafficDescType (txTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE AtmIf Vpc Vpd Tm fwdQosClass (fwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. This attribute is only used for SPVC connections.

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Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video).

Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video).

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

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

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

Mib	AtmCore
Values	0 1 2 3 4
Default	0

ATTRIBUTE **Atmlf Vpc Vpd Tm txQueueLimit (txQlim)**

Access	Read and write
Criticality	Component
Description	This attribute specifies an override to the default transmit queue limit for this connection. A value of ***sameAsCa*** means that the default common or per-VC transmit queue limit, as defined by the CA service category, is used for this connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***sameAsCa*** must be specified. A value from 5 to 512,000 means that the connection transmit queue limit differs from the default common or per-VC transmit queue limit, as defined by the CA service category. A value other than ***sameAsCa*** is ignored for connections where common queuing is specified for the service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the per-VC utilization limit of the service category common queue. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from 5 to 512000 inclusive. For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

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For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

On all other cards, the valid range for this attribute is from 5 to 63488 inclusive.

The actual transmit queue limit for a connection is visible in the *Vcc Tm*, *Vpc Tm* or *Vpt txQueueThresholds* attribute.

This attribute is not applicable for basic *Vpt*s.

Mib	AtmCore
Values	Decimal (5..1011840) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE **AtmIf Vpc Vpd Tm** **holdingPriority (hpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. The default holding priority for a provisioned connection is higher then default holding priorities for dynamic (SVC) connections. The value of this attribute may be overridden by certain applications, for example *Vcc Test*, which use this connection. This attribute is not applicable for *Vpt Vcc*s.
Mib	AtmCore
Values	0 1 2 3 4
Default	2

ATTRIBUTE **AtmIf Vpc Vpd Tm** **rxTrafficDescType (rxTdt)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute. The value ***sameAsTx*** means the *rxTrafficDescType* as well as the *rxTrafficDescParm* attribute values are taken from the values of the *txTrafficDescType* and *txTrafficDescParm* attributes.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE **Atmlf Vpc Vpd Tm** **bwdQosClass (bwdQos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmCore

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Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE **AtmIf Vpc Vpd Tm** **atmServiceCategory (service)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The value ***derivedFromBBC*** may only be used if the *Src* or *Dst* component is provisioned under this connection. Otherwise a specific ATM service category must be specified. A value of ***derivedFromBBC*** means the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. A value other than ***derivedFromBBC*** means the value of this attribute is used to override the provisioned BBC Information Element parameters. In this case, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. The ***rtVariableBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real-time VBR service may support statistical multiplexing of real-time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non real-time VBR service may support statistical multiplexing of

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connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

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

Mib — AtmCore

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
availableBitRate (abr)
derivedFromBBC (derived)

Default — unspecifiedBitRate

ATTRIBUTE Atmlf Vpc Vpd Tm **trafficShaping (trShaping)**

Access — Read and write

Criticality — Component

Description

This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

This attribute is ignored if the *atmServiceCategory* is ***availableBitRate***.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is ignored.

A value of ***sameAsCa*** means traffic shaping for the connection is based on the value of the *trafficShaping* attribute of the connection's service category component under the *CA.* If the service category has *trafficShaping* set to ***enabled*** or ***inverseUpc***, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm, Vpc Tm,* or *Vpt Tm* components.

A value of ***disabled*** means traffic shaping for this connection is disabled

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regardless of the provisioning of the connection's service category component.

Mib	AtmCore
Values	disabled sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the transmit queuing method for this connection if it is unshaped. The two possible methods are per-VC queuing and common queuing. This attribute does not apply if the connection is shaped. A value of ***sameAsCa*** means the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *CA*. A value of ***common*** means transmit traffic on this unshaped connection is destined for the common queue. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm***, and ***4pMRPosAtm*** cards, this attribute must have the value ***sameAsCa***. This attribute is ignored in the following situations: - if the connection has *trafficShaping* ***enabled*** or ***inverseUpc***, or - if the *atmServiceCategory* is ***availableBitRate***, or - if the *atmServiceCategory* is ***constantBitRate***, or - for basic *Vpt*s and standard *Vpt Vcc*s.
Mib	AtmCore
Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm **weight**

Access	Read and write
Criticality	Component
Description	This attribute specifies an override for the weight of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, and basic *Vpt*s.

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A value of ***sameAsCa*** means the weight is determined by the *weightPolicy* attribute under the *CA* service category component for all but standard *Vpt Vcc*s. For standard *Vpt Vcc*s, the weight is determined by the *Vcc*'s service category, when the value is set to ***sameAsCa***.

A value from 1 to 4095 means that value is used for the fairness weight of this connection relative to other connections. For all but standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the *Vpt*.

A value of ***upToQueueLimit*** means the fairness weight is limited only by the *txQueueLimit*.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value ***upToQueueLimit*** is not permitted.

Mib	AtmCore
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE **Atmlf Vpc Vpd Tm** **forceTagging (tagging)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR service category. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, and for *Vpt*s, this attribute is not applicable and is ignored. A value of ***sameAsCa*** means the force tagging functionality is determined by the *forceTagging* attribute under the *CA* service category component.

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A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection.

A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. In this case, cells which are tagged are counted in the *txCellClp* attribute.

Mib	AtmCore
Values	sameAsCa enabled disabled
Default	sameAsCa

ATTRIBUTE **AtmIf Vpc Vpd Tm** **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enables usage parameter control (UPC) when receiving traffic from the ATM interface. The value ***sameAsCa*** means UPC for the connection is based on the value of the *usageParameterControl* attribute of the service category component under the *AtmIf CA.* If the service category has UPC ***enforced*** or ***monitored***, then UPC is enabled on the connection. The value ***disabled*** means UPC for this connection is disabled regardless of the provisioning of the service category. The value ***enforced*** means UPC for this connection is enforced regardless of the provisioning of the service category. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. The value ***monitored*** means UPC for this connection is monitored regardless of the provisioning of the service category. When UPC is monitored, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged. Note that setting UPC to ***enforced*** or ***monitored*** may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc, Vpc,* and *Vpt* components. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***,

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3pDS1Atm, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported.

For ***1pOC48ChSmIrAtm*** cards, the values ***enforced***, and ***monitored***, are not supported.

Mib: AtmCore

Values:
enforced
disabled
sameAsCa
monitored

Default: sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm **bearerClassBbc (bcBbc)**

Access: Read and write

Criticality: Component

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

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

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

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

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

Class **vp** service is used to specify a transparent VP service. When the value of this attribute is vp, the user is requesting an ATM only service

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from the network. In this case, the network shall not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except or VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP connections.

Mib	AtmCore
Values	a c x vp derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE **AtmIf Vpc Vpd Tm** **transferCapabilityBbc (tcBbc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. Uni 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> 0: NoIndication, NoIndication 1: NoIndication, yes 2: NoIndication, no 5: CBR, yes 8: VBR, NoIndication 9: VBR, yes 10: VBR, no The value ***notApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data. The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing. The value yes for end-to-end timing indicates that end-to-end timing is required. The value no for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the

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atmServiceCategory. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmCore

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Vpc Vpd Tm txWredThreshold

Access: Read and write

Criticality: Component

Description

This attribute specifies the threshold for weighted random early detection (WRED). This threshold is calculated as a percentage of the early packet discard (EPD) threshold, which is 85% of the transmit queue length. When the value is ***25%***, WRED starts as soon as the queue is 25% of the way to the EPD threshold. When the value is ***50%***, WRED starts later, after the queue is 50% of the way to the EPD threshold. When the value is ***75%***, WRED starts only when the queue is 75% of the way to the EPD threshold.

This attribute is ignored if the value of the *txWredMode* or *txPacketWiseDiscard* attributes is ***disabled.***

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Mib: AtmCore

Values: Decimal (25; 50; 75)

Units: %

Default: 25

ATTRIBUTE Atmlf Vpc Vpd Tm clippingBbc (cBbc)

Access: Read and write

Criticality: Component

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Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE **AtmIf Vpc Vpd Tm** **bestEffort**

Access	Read and write
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmCore
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE **AtmIf Vpc Vpd Tm** **txPacketWiseDiscard (txpd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s.

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Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD).

EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the “goodput” of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell.

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the packet-wise discard functions are PPD and EPD. PPD is applicable at cell-transfer points. PPD is not applicable at frame-to-cell conversion points, and is not applicable for *Vpc*s. PPD is configured by this attribute. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. EPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Both PPD and EPD are controlled by this attribute. This attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

For ***16pOC3PosAtm***, ***4pMRPosAtm*** and ***1pOC48ChSmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply

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to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points. This attribute may safely be set to ***enabled*** for VCCs since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE **AtmIf Vpc Vpd Tm** **rxPacketWiseDiscard (rxpd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s. Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD). PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted. For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD is available at all VCC connection points where UPC may be activated. PPD is not applicable for *Vpcs*. Packet-wise discards should only be enabled for

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connections carrying AAL5 segmentation traffic. Setting the value to ***enabled*** for any other traffic type may result in traffic being discarded. PPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, this attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***1pOC48ChSmIrAtm*** cards, this attribute may safely be set to ***enabled*** for VCCs, since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. A value of ***enabled*** for the *rxPacketWiseDiscard* attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in enabling packet-wise discard functions on these cards. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup.

The receive packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm rxPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

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ATTRIBUTE Atmlf Vpc Vpd Tm **txWredMode**

Access	Read and write
Criticality	Component
Description	This attribute specifies the activation of weighted random early detection (WRED) functionality. WRED is considered a packet-wise discard function and as such applies only to AAL5 frame traffic. WRED is applied in the transmit direction for this connection. WRED function should be enabled only for connections which are transferring TCP/IP traffic. WRED acts to prevent synchronization of multiple TCP/IP sources by randomly discarding a small percentage of frames when transmit queue congestion reaches the designated level. WRED may also be used to differentiate service on VCC's by preferentially discarding one VCC before another. Discards start at 0% of cells, when the queue is part-way to the Early Packet Discard (EPD) threshold, and rise to 100% of cells discarded at the EPD threshold. WRED discards all the cells in a frame. A value of ***enabled*** means WRED is enabled for all applications linked to the given *Vcc*. A value of ***perFlow*** means each TCP application has individual control over whether to enable or disable WRED. If the value of the *txPacketWiseDiscard* attribute is ***disabled***, or if the value of this attribute is ***disabled***, WRED functionality is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, the value of this attribute must be ***disabled***. If WRED is active, it is visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute. This attribute is not applicable for *Vpt*s or *Vpt Vcc*s.
Mib	AtmCore
Values	disabled enabled perFlow
Default	disabled

ATTRIBUTE Atmlf Vpc Vpd Tm **abrConnectionType (abrType)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of ABR behavior which is to be enforced at this connection. This attribute is only applicable if the value of the

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atmServiceCategory attribute is ***availableBitRate***. If the value of the *atmServicecategory* attribute is not ***availableBitRate***, this attribute is ignored.

The value ***sameAsCa*** is used to request the default behavior as specified in the *CA Abr* component for this *Vcc*. Otherwise, this attribute overrides the default behavior.

The value ***virtualSourceDest*** is used to request that this connection point function as a virtual source/virtual destination.

The value ***sourceDest*** requires that this connection point function as a S/D for RM cells. S/D mode is automatically invoked at this connection point either if this is a connection end point, or if the next hop connection point is configured as ***nonAbrInterworking***.

The value ***nonAbrInterworking*** is used to request that this connection point function as an interworking between ABR and non-ABR service categories. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

The value ***abrSwitch*** is used to request ABR switch behavior for this connection point. The ABR switch behavior is first, to conform to ***virtualSourceDest*** or ***nonAbrInterworking*** setting on the next hop, and otherwise to implement ABR ER switch behavior.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the only allowable values are ***sameAsCa***, ***nonAbrInterworking*** or ***abrSwitch***. If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***1pOC12SmLrAtm*** cards, the only allowable values are ***sameAsCa*** or ***abrSwitch.*** If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the only allowable value is ***sameAsCa***.

The actual ABR functionality which is in effect is visible in the *Vcc/Vpc/Vpt Tm abrConnectionType* operational attribute.

Mib	AtmCore
Values	abrSwitch virtualSourceDest sourceDest nonAbrInterworking sameAsCa
Default	sameAsCa

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ATTRIBUTE **AtmIf Vpc Vpd Tm** **txTrafficDescParm (txTdp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR, MCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *txTrafficDescType* is 1 or 2, all of the parameters must be set to zero. When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or

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equal to parameter 2.

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

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

When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 4 and parameter 5 represent are not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may be optionally zero.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate. When the *atmServiceCategory* is ***availableBitRate*** (ABR), the shaping rate is dynamically chosen, based on the ABR flow control mechanism, as a value between the MCR and the PCR or the requested shaping rate if applicable.

For *txTrafficDescType* 3, 4 and 5, the transmit traffic is shaped at the next available shaping rate less than the PCR.

For *txTrafficDescType* 6, 7 and 8 if linear traffic shaping is selected, the transmit traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

For *txTrafficDescType* 3 ,4,5,6,7 and 8, with ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, parameter 4 must be less than or equal to 643,000.

For *txTrafficDescType* 6, 7 and 8 if inverse-UPC traffic shaping is selected, the transmit traffic is shaped at a variable rate which conforms to the PCR, SCR and MBS of the connection traffic descriptor.

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

ATTRIBUTE Atmlf Vpc Vpd Tm **rxTrafficDescParm (rxTdp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. If the value of the *rxTrafficDescType* attribute is ***sameAsTx***, the values provisioned in this attribute are ignored. The traffic parameters for the receive direction are taken from the *txTrafficDescParm* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), and Minimum Cell Rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for usage parameter control (UPC). When *rxTrafficDescType* is 1 or 2, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2. When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to

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0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

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

If the value of CDVT either in parameter 2 or in parameter 4 is zero, the CDVT is taken from the *CA* defaults for the particular *atmServiceCategory* of this connection.

Parameter 5 of the *rxTrafficDescParm* is always unused.

When *rxTrafficDescriptorType* is 3 through 8, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware. The *check prov* command detects such cases and generates an error message. If this happens, adjust the parameters until they fall within the supported limits.
To calculate the limits, use the following formulae:
I1 = 1,000,000,000 / PCR
L1 = CDVT * 1000
I2 = 1,000,000,000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is 6 through 8.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, I1 and I2 must be less than or equal to 335,523,840. I1 + L1 must be less than or equal to 1,342,156,800. I2 + L2 must be less than or equal to 1,342,156,800. If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41,940,480 or
I2 > 41,940,480 or
I1 + L1 > 167,769,600 or
I2 + L2 > 167,769,600
then both I1 and I2 must be greater than 20,480.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, L2 must be less than or equal to 2,674,011,406.

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For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, L2 must be less than or equal to 17,179,869,180.

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

ATTRIBUTE Atmlf Vpc Vpd Tm fwdQosParameters (fqp)

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

ATTRIBUTE Atmlf Vpc Vpd Tm bwdQosParameters (bqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of two elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections.

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The *cdv* specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR, the CDV is irrelevant, and its value is forced to the default.

The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.

Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv clr
Default	(cdv: 16777215, clr: 255)

COMPONENT Atmlf Vpc Vpd Tm AvailableBitRate (Abr)

Groups	GROUP Atmlf Vpc Vpd Tm Abr Provisioned (Prov)
Scope	Device
Description	*Atmlf/n Vcc/vpi.vci Vcd Tm AvailableBitRate,* *Atmlf/n Vpc/vci Vpd Tm AvailableBitRate,* *Atmlf/n Vpt/vpi Vpd Tm AvailableBitRate,* *Atmlf/n Vpt/vpi Vcc/vci Vcd Tm AvailableBitRate* This component contains provisioned ABR-related attributes of a connection. It is an optional subcomponent of the *Vcd Tm* and *Vpd Tm* component. It is used to override DGCRA-related defaults in the *CA Abr* component. It contains the specific configuration for the ABR connection at this connection point. If this is the source of an SPVC connection, this component also contains the ABR parameters required for the SPVC call request.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpc Vpd Tm Abr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the ABR ATM connections configured on an ATM interface.
Mib	AtmCore

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ATTRIBUTE Atmlf Vpc Vpd Tm Abr **initialCellRate (icr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. The value ***sameAsCa*** means the initial cell rate is determined by the *AtmIf CA Abr*/0 *icr* attribute. The value ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection. The value ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection. If the value is less than the MCR of the connection, then the MCR is used as the ICR. If the value is more than PCR of the connection, then PCR is used as the ICR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16777215) sameAsCa useMcr usePcr
Units	cell/s
Default	sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **transientBufferExposure (tbe)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the source to send during start-up periods, before the first Resource Management (RM) cell returns. TBE divided by *fixedRoundTripTime* determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. TBE divided by *maxCellsPerRmCell* specifies the operational value of *forwardRmCellLimit*, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received

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backward RM cells.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* is set to ***erSwitch***.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	16777215

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **fixedRoundTripTime (frtt)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. The value of *transientBufferExposure* divided by the value of FRTT (in seconds) determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	5000000

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **rateDecreaseFactor (rdf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

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This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib: AtmCore

Values: Decimal (0..15)
sameAsCa

Default: sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **rateIncreaseFactor (rif)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64.

RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib: AtmCore

Values: Decimal (0..15)
sameAsCa

Default: sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **maxCellPerRmCell (nrm)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell.

A value of 2 is not recommended although it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly transmitted, and all data traffic is queued up indefinitely.

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This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib: AtmCore

Values: Decimal (2; 4; 8; 16; 32; 64; 128; 256)
sameAsCa

Units: cells

Default: sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **maxTimeBetweenRmCells (trm)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the TRM parameter for this connection.

TRM provides an lower bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least two other cells have been sent, then the next cell to be transmitted would be a forward RM cell.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

The provisioned value of 781 is signaled as TRM = 0, in the ABR Additional Parameters Information Element.
1563 is signaled as TRM = 1.
3125 is signaled as TRM = 2.
6250 is signaled as TRM = 3.
12500 is signaled as TRM = 4
25000 is signaled as TRM = 5.
50000 is signaled as TRM = 6.
100000 is signaled as TRM = 7.

Mib: AtmCore

Values: Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
sameAsCa

Units: microsec

Default: sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **cutoffDecreaseFactor (cdf)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is

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computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero.

CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

The value of CRM is indicated by the *forwardRmCellLimit* attribute.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.

Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64) sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **acrDecreaseTimeFactor (adtf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the maximum time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..1023) sameAsCa
Units	centiseconds
Default	sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **dgcraMaximumDelay (dgcraMaxDelay)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward direction). This upper bound may be approximated as the sum of the round trip fixed and propagation delays and the maximum queuing delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When there is a reduction in the Allowed Cell Rate (ACR), the policer waits for a correspondingly longer period of time before it enforces at the new cell rate. The value of this attribute must not be less than the *dgcraMinimumDelay* attribute.
Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE **Atmlf Vpc Vpd Tm Abr** **dgcraMinimumDelay (dgcraMinDelay)**

Access	Read and write
Criticality	Component
Description	This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward connection). This lower bound may be approximated as the sum of the round trip fixed and propagation delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A smaller value for this attribute implies a more lenient policer. When there is a increase in the Allowed Cell Rate (ACR), the policer waits for a correspondingly shorter period of time before it enforces at the new cell rate.
Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec

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Default	sameAsCa

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **farEndAcrDecreaseTimeFactor (feAdtf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) of the far end ABR source. The value specified should be the same as the ADTF parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the value of this attribute, the policer begins to limit enforce the incoming traffic at the initial cell rate (ICR) of the far end, as specified by the *farEndInitialCellRate* attribute.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	50

ATTRIBUTE Atmlf Vpc Vpd Tm Abr **farEndInitialCellRate (feIcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) of the far end ABR source. The value specified should be the same as the ICR parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the *farEndAcrDecreaseTimeFactor* attribute, the policer begins to enforce the incoming traffic at the value of this attribute. If this attribute is specified less than the MCR of the connection, then the MCR is used as the *feIcr*. If this attribute is more than the PCR of the connection, then PCR is used as the *feIcr*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	0

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COMPONENT Atmlf Vpc Vpd PerformanceMonitoring (Pm)

Groups	GROUP AtmIf Vpc Vpd Pm Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/x.y Vcd PerformanceMonitoring* *AtmIf/n Vpt/x vcc/y Vcd PerformanceMonitoring* *AtmIf/n Vpc/x Vpd PerformanceMonitoring* This component represents the Performance Monitoring (Pm) function on a provisioned connection. No Performance Monitoring is done unless this component is present. The attribute values override corresponding values in the AtmIf Pm component. There can be a maximum of 255 Pms on one LP.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpc Vpd Pm Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which specify Performance Monitoring (PM) measurements, namely, Availability Ratio (AR) and Cell Loss Ratio (CLR), and control modes for the connection. The values specified in this group override those specified by the *AtmIf Pm* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc Vpd Pm segSwitchSideMeasurement (segSwitchSide)

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the switch side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segSwitchSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no switch side PM measurements are done.
Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

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ATTRIBUTE Atmlf Vpc Vpd Pm **segLinkSideMeasurement (segLinkSide)**

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the link side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segLinkSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no link side PM measurements are done.
Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

ATTRIBUTE Atmlf Vpc Vpd Pm **controlMode (mode)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the control mode of Performance Monitoring (PM) measurements for the connection. A value of ***autoStart*** means that PM activation procedures will start when the provisioned data is activated. A value of ***onDemand*** means that PM activation procedures will start when the operator issues the *Start* command. The PM measurements in this mode will continue until the operator issues the *Stop* command. A value of ***sameAsInterface*** means that the behavior will be as specified by the *controlMode* attribute of the *AtmIf Pm* component.
Mib	AtmCore
Values	autoStart (auto) onDemand (onDemand) sameAsInterface (sameAsIf)
Default	sameAsInterface

ATTRIBUTE Atmlf Vpc Vpd Pm **switchSideClrType (clrType)**

Access	Read and write
Description	This attribute specifies how the Cell Loss Ratio (CLR) Performance Monitoring (PM) is measured on a switch-side configuration for the connection. A value of ***complete*** indicates that egress discards at the segment end

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points are included in the CLR measurement as per ITU standards.

A value of ***partial*** indicates that egress discards do not contribute to the CLR measurement.

A value of ***sameAsInterface*** means that the behavior is as specified by the *switchSideClrType* attribute of the *AtmIf Pm* component.

Mib: AtmCore

Values:
complete
partial
sameAsInterface (sameAsIf)

Default: sameAsInterface

COMPONENT AtmIf Vpc Loop (Loop)

Scope: Device

Description:
AtmIf/n Vcc/vpi.vci Loop
The *Loop* component configures an ATM connection so that cells received from the ATM interface are retransmitted back to the interface through that connection. The *Loop* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Test*).

Mib: AtmCore

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT AtmIf Vpc NailedUpRelayPoint (Nrp)

Groups: GROUP AtmIf Vpc Nrp Provisioned (Prov)

Scope: Device

Description:
AtmIf/n Vcc/vpi.vci Nrp
This component is used to establish a single hop of a nailed-up ATM Bearer Service (ABS) connection. By linking together two *Nrp*s within a module, the associated connections are configured to relay ATM cells to one another. The *Nrp* component requires exclusive use of its parent *Vcc*

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	or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, and *Loop*).
Mib	AtmBearerService
Common Verbs	Help List Display Add DELete

GROUP **AtmIf Vpc Nrp** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Nrp* component.
Mib	AtmBearerService

ATTRIBUTE **AtmIf Vpc Nrp** **nextHop (nextHop)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Nrp* component with which this *Nrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp.*
Mib	AtmBearerService
Values	Link (Service, nextHop)
Default	No default

ATTRIBUTE **AtmIf Vpc Nrp** **oamSegmentBoundary (sb)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Nrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.
Mib	AtmBearerService
Values	no yes sameAsInterface

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Default	sameAsInterface

ATTRIBUTE Atmlf Vpc Nrp **bandwidthElastic (bwElastic)**

Access	Read and write
Criticality	Component
Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Nrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid. A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority*.
Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpc Nrp **overrideHoldingPriority (ohpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3

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	4 noOverride
Default	noOverride

COMPONENT Atmlf Vpc SourcePvp (Src)

Groups	GROUP AtmIf Vpc Src Provisioned (Prov) GROUP AtmIf Vpc Src Operational (Oper) GROUP AtmIf Vpc Src OsiState (State) GROUP AtmIf Vpc Src CallRedirectionOper (RedirectOp)
Scope	Device
Description	*AtmIf/n Vpc/vpi SourcePvp* This component represents the source end of a soft PVP.
Mib	AtmNetworking
Opt. Subcomp.	COMPONENT AtmIf Vpc Src CallRedirection (Redirect) COMPONENT AtmIf Vpc Src ManualDtl (Mdtl) COMPONENT AtmIf Vpc Src RerouteOverride (RerOv)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Atmlf Vpc Src Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *AtmIf/n Vpc/vpi SrcPvp* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpc Src callingAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the calling address of the soft PVP. If it is a null string, then the calling address is the address of the current interface (that is, where the soft PVC originates).
Mib	AtmNetworking
Values	String (0..20, Hex)
Default	""

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ATTRIBUTE Atmlf Vpc Src **calledAddress**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called (remote) address of the soft PVP.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpc Src **calledVpi**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI of the soft PVP.
Mib	AtmNetworking
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE Atmlf Vpc Src **adminControl**

Access	Read: All Write: All
Description	This attribute specifies the initial state of the connection. If this attribute is set to ***permLocked***, the connection initially remains down following activation. Setting this attribute to ***unlocked*** causes the connection to be established when it is activated.
Mib	AtmNetworking
Values	permLocked unlocked
Default	unlocked

ATTRIBUTE Atmlf Vpc Src **aisGeneration (ais)**

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVP is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVP when the SPVP is not up.

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The only exception is that when the source SPVP attribute *adminControl* is set to ***permLocked***, OAM-AIS cells are not generated for the source SPVP.

If this attribute is set to ***disabled***, OAM-AIS cells are not generated.

Mib	AtmNetworking
Values	enabled disabled
Default	disabled

GROUP Atmlf Vpc Src **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvp* or *SrcPvc* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpc Src **retryCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed attempts to set up the soft PVP or soft PVC since the last time the connection failed.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpc Src **lastFailureCauseCode**

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages. The default value for this attribute is set to 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpc Src **lastFailureDiagCode**

Access	Read: All Write: Illegal

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Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

GROUP Atmlf Vpc Src **OsiState (State)**

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

ATTRIBUTE Atmlf Vpc Src **adminState (osiAdmin)**

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

ATTRIBUTE Atmlf Vpc Src **operationalState (osiOper)**

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

ATTRIBUTE Atmlf Vpc Src usageState (osiUsage)

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

GROUP Atmlf Vpc Src CallRedirectionOper (RedirectOp)

Properties	Operational
Description	This group contains the operational attributes associated with the *CallRedirection* subcomponent.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpc Src currentDestination

Access	Read: All Write: Illegal

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Description	This attribute indicates the current destination of the soft PVC or soft PVP. A ***notConnected*** status indicates that the connection is not established. A ***primary*** status indicates that the connection is established to the remote destination specified by *calledAddress* and *calledVpiVci/calledVpi* attributes under *Atmif Vcc Src* or *Atmif Vpc Src* or *Atmif Vpt Vcc Src* Component. A ***secondary*** status indicates that the connection is established to the remote destination specified by *secondaryCalledAddress* and *secondaryCalledVpiVci/secondaryCalledVpi* attributes under *Atmif Vcc Src CallRedirection* or *Atmif Vpc Src CallRedirection* or *Atmif Vpt Vcc Src CallRedirection* Component.
Mib	AtmNetworking
Values	notConnected primary secondary
Default	No default

ATTRIBUTE Atmif Vpc Src **primaryAdminState**

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the primary destination. The value ***locked*** indicates that the primary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the primary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked
Default	No default

ATTRIBUTE Atmif Vpc Src **secondaryAdminState**

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the secondary destination. The value ***locked*** indicates that the secondary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the secondary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked

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Default	No default

ATTRIBUTE Atmlf Vpc Src lastSecondaryFailureCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code value of the last signalling message to the secondary destination which contained the CAUSE information element. If there has been no previous failure, the value for this attribute is 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpc Src lastSecondaryFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute indicates the diagnostic code associated with the *lastSecondaryFailureCauseCode* attribute. If the diagnostic code was not provided with that CAUSE information element or if there has been no previous failure, this attribute is empty.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT Atmlf Vpc Src CallRedirection (Redirect)

Groups	GROUP Atmlf Vpc Src Redirect Provisioned (Prov)
Scope	Device
Description	*Atmif/n Vpc/vpi SrcPvp CallRedirection* This component represents the secondary destination information for the source end of a soft PVP. The addition of this subcomponent is not critical to the parent SPVP. Deletion of this subcomponent or changes to its attributes will impact service of the SPVP if it is established to the secondary destination.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

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VERB LOCK **AtmIf Vpc Src Redirect**

Impact	Service
Description	*Lock Atmif Vpc Src CallRedirection* *Lock -primary Atmif Vpc Src CallRedirection* *Lock -secondary Atmif Vpc Src CallRedirection* This verb selectively precludes a provisioned destination address from consideration during call setup attempts for a Src PVP. If [*-primary*] option is present, then the primary destination address is precluded from call setup attempts. If the connection is established to the primary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the secondary destination address. If [*-secondary*] option is present, then the secondary destination address is precluded from call setup attempts. If the connection is established to the secondary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the primary destination address. If no option is present, the secondary destination is locked. This command will have the same effect as providing the *secondary* option. Only one of the primary or the secondary addresses may be locked at any given time.

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VERB UNLOCK Atmlf Vpc Src Redirect

Impact	Service
Description	*Unlock Atmif Vpc Src CallRedirection* *Unlock -primary Atmif Vpc Src CallRedirection* *Unlock -secondary Atmif Vpc Src CallRedirection* *Unlock -primary -secondary Atmif Vpc Src CallRedirection* This verb selectively unlocks a destination address. The indicated address will be considered in subsequent call setup attempts. If [*-primary*] option is present, then the primary destination address is unlocked and it is considered for subsequent call setup attempts. This action does not have any impact on the established connections. If [*-secondary*] option is present, then the secondary destination address is unlocked and it is considered in subsequent call setup attempts. This action does not have any impact on the established connections. If no option is present, the secondary destination address is unlocked. It has the same impact as *secondary* option. If both options are provided, either of the primary or the secondary address which may have been locked will be unlocked.

GROUP Atmlf Vpc Src Redirect **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the Source PVP *CallRedirection* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpc Src Redirect **secondaryCalledAddress**

Access	Read: All Write: All
Description	This attribute specifies the secondary called address of the soft PVP.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpc Src Redirect **secondaryCalledVpi**

Access	Read: All Write: All
Description	This attribute specifies the secondary called VPI of the soft PVP.
Mib	AtmNetworking

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Values	Decimal (1..4095)
Default	No default

COMPONENT Atmlf Vpc Src ManualDtl (Mdtl)

Groups	GROUP Atmlf Vpc Src Mdtl Provisioned (Prov) GROUP Atmlf Vpc Src Mdtl Operational (Oper)
Scope	Device
Description	*Atmlf/n Vcc/vpi.vci SrcPvc ManualDtl* *Atmlf/n Vpc/vpi SrcPvp ManualDtl* *Atmlf/n Vpt/vpi Vcc/vci SrcPvc ManualDtl* This component represents the ability to specify the PNNI path on a per connection basis for provisioned SPVC and SPVP connections. The addition or deletion of this component is critical to the parent SPVC or SPVP. Changes to the attributes contained under this component are not critical.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

VERB REConnect Atmlf Vpc Src Mdtl

Impact	Service
Description	*REConnect Atmlf/n Vcc/vpi.vci Src Mdtl* *REConnect -primary Atmlf/n Vcc/vpi.vci Src Mdtl* *REConnect -alternate Atmlf/n Vcc/vpi.vci Src Mdtl* *REConnect -automatic Atmlf/n Vcc/vp.vci Src Mdtl* This command is used to trigger a connection to attempt to connect using the requested path. The behavior of this command differs for connections which do and do not subscribe to Path Optimization capabilities provided by rerouting services. To summarize: 1. Non-reroute Subscribed connections A reconnect comand will result in the connection being taken down and re-establishment attempts being made. By default (if no option is specified), the primary path is attempted first otherwise the path specified by the option is first attempted. In the event of reconnect failure, subsequent re-establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths.

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2. Reroute Subscribed connections
A reconnect comand will utilize make-before-break functionality. If an option is specified then only that path will be attempted. If a connection can be established, then datapath switching will be used to replace the existing connection minimizing cell loss. If no option is specified, the connection establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths only until such time that a successfully established connection would be deemed more optimal than the incumbent. For instance, if a reconnect command is issued for a connection which is on it's alternate path and establishment on the primary path fails then the reconnect operation is considered complete and the connection will remain on the alternate path.

GROUP Atmlf Vpc Src Mdtl **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the Manual DTL selection paths for provisioned connections. The normal sequence for connection retry is: First try to establish the connection using the *primaryPath*. If the connection is not successful and if the *alternatePath* has been provisioned, try to connect using the *alternatePath*. If the connection is still unsuccessful, use the PNNI routing protocol to generate the path.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpc Src Mdtl **primaryPath (priPath)**

Access	Read and write
Description	This attribute specifies the name of the primary MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni*.
Mib	AtmNetworking
Values	String (1..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpc Src Mdtl **alternatePath (altPath)**

Access	Read and write
Description	This attribute specifies the name of the alternate MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni.* An empty string disables the alternate path.
Mib	AtmNetworking
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpc Src Mdtl **automaticFallback (auto)**

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Access	Read and write
Description	This attribute specifies whether PNNI routing is to be used to establish a connection if connection attempts using the primary and alternate paths fail. If the value is ***enable***, PNNI routing will be attempted; if the value is ***disable***, it will not.
Mib	AtmNetworking
Values	disable enable
Default	enable

ATTRIBUTE Atmlf Vpc Src Mdtl **mdtlVersion (vers)**

Access	Read and write
Description	This attribute indicates a version number for Specified Paths and will ensure that the reroute behaviors (not subscribed) are maintained following a software migration to a software version where global rerouting is supported for Specified Path connections. This is an internal attribute intended for the above purpose only and should not be altered.
Mib	AtmNetworking
Values	notRerouteCapable rerouteCapable
Default	notRerouteCapable

GROUP Atmlf Vpc Src Mdtl **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *atmSrcMdtl* component
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpc Src Mdtl **currentPath (curPath)**

Access	Read: All Write: Illegal
Description	This attribute indicates the current connection status of the Specified Path connection. A ***not connected*** status indicates that the connection is not established. The retry sequence did not succeed. The network operator can issue the *Reconnect* command to restart the retry sequence. A ***primary*** status indicates that the connection is using the path specified by the *primaryPath* attribute. An ***alternate*** status indicates that the connection is using the path specified by the *alternatePath* attribute. An ***automatic*** status indicates that the connection is using the path generated by the PNNI routing protocol.

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An ***unknown*** status indicates that the provisioning data for the path upon which the connection is established has been altered.
A ***waiting connection*** status indicates that the connection is in a retry phase.

Mib	AtmNetworking
Values	not connected primary alternate automatic unknown waiting connection
Default	"not connected"

ATTRIBUTE Atmlf Vpc Src Mdtl **primaryPathFailCause (priPathFail)**

Access	Read: All Write: Illegal
Description	This attribute identifies the last cause code failure for the primary path. The value is reset to zero when the *primaryPath* attribute is set to a new value.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpc Src Mdtl **alternatePathFailCause (altPathFail)**

Access	Read: All Write: Illegal
Description	This attribute identifies the last cause code failure for the alternate path. The value is set to zero when the *alternatePath* attribute is set to a new value.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

COMPONENT Atmlf Vpc Src **RerouteOverride (RerOv)**

Groups	GROUP Atmlf Vpc Src RerOv Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc RerouteOverride* *AtmIf/n Vpc/vpi SrcPvp RerouteOverride* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc RerouteOverride* *FrAtm/n Dlci/x Siwf RerouteOverride*

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This component represents the ability to override rerouting capability subscription options on a per connection basis for provisioned SPVC and SPVP connections.

The addition of this component and changes to the attributes contained in this component are critical to the parent SPVC or SPVP. However, the deletion of this component is not a critical change for the connection. If this component is deleted, the connection remains active with the last provisioned subscription options. Subscription is lost when the connection goes down and re-establishes.

Mib AtmNetworking

Common Verbs
Help
List
Display
Add
DELete

VERB OPTIMIZE **AtmIf Vpc Src RerOv**

Impact Service

Description
OPTimize AtmIf/n Vcc/<vpi.vci> Src RerOv
OPTimize AtmIf/n Vpc/<vpi> Src RerOv
OPTimize AtmIf/n Vpt/<vpi> Vcc/<vci> Src RerOv
OPTimize FrAtm/n Dlci/x Siwf RerOv

This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is cancelled.

Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP **AtmIf Vpc Src RerOv** **Provisioned (Prov)**

Properties Provisioned

Description This group contains the provisionable attributes related to rerouting subscription options for provisioned connections.

Mib AtmNetworking

ATTRIBUTE **AtmIf Vpc Src RerOv** **protocol**

Access Read and write

Description This attribute specifies the rerouting protocols that are requested by the connection segment. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning.

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One of the following values can be specified:
sameAsInterface: The requested rerouting protocols are specified by the *protocol* attribute under the *Reroute Ov* component for the interface.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
localEbr: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmNetworking

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE Atmlf Vpc Src RerOv **localConnectionRecoverySubscr (lRecSub)**

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

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

If the connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local connection recovery, otherwise the connection segment does not request subscription.

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yes: The connection segment requests subscription to local connection recovery.
no: The connection segment does not request subscription to local connection recovery.

Mib — AtmNetworking

Values
no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE Atmlf Vpc Src RerOv localPathOptimizationSubscr (lOptSub)

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

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

If the connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local path optimization.
no: The connection segment does not request subscription to local path optimization.

Mib — AtmNetworking

Values
no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE Atmlf Vpc Src RerOv globalConnectionRecoverySubscr (gRecSub)

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting

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protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR connection recovery.
no: The connection segment does not request subscription to global or EBR connection recovery.

Mib — AtmNetworking

Values
no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE Atmlf Vpc Src RerOv **globalPathOptimizationSubscr (gOptSub)**

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR path

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optimization.
no: The connection segment does not request subscription to global or EBR path optimization.

Mib	AtmNetworking
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

COMPONENT AtmIf Vpc RelayPoint (Rp)

Scope	Device
Description	*AtmIf/n Vpc/vpi Rp* *AtmIf/n Vcc/vpi.vci Rp* *AtmIf/n Vpt/vpi Vcc/vci Rp* The *RelayPoint* component is used to establish a single hop of a Switched connection. When linked together, two *Rp*s within a module, the associated connections are configured to relay ATM cells to one another.
Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT AtmIf Vpc Rp NextHop
Common Verbs	Help List Display

COMPONENT AtmIf Vpc Rp NextHop

Instance	Decimal (1..300)
Groups	GROUP AtmIf Vpc Rp NextHop Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpc/vpi Rp nextHop/n* *AtmIf/n Vcc/vpi.vci Rp nextHop/n* *AtmIf/n Vpt/vpi Vcc/vci Rp nextHop/n* The *RelayPointNextHop* component indicates the hops associated with this Rp component. There can be more than one component listed if the Vcc "*distributionType"* is ***"pointToMultipoint"*** and the "*callDirection"* is ***"fromLink"***.
Mib	AtmNetworking
Common Verbs	Help List Display

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GROUP AtmIf Vpc Rp NextHop Operational (Oper)

Properties	Operational
Description	This attribute group contains an operational attribute for the AtmRelayPointNextHop component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Rp NextHop nextHopValue

Access	Read only
Description	This attribute indicates the component name of the Rp component with which this Rp component is associated.
Mib	AtmNetworking
Values	The name of the component
Default	No default

COMPONENT AtmIf Vpc DestinationPvp (Dst)

Groups	GROUP AtmIf Vpc Dst Operational (Oper) GROUP AtmIf Vpc Dst OsiState (State)
Scope	Device
Description	*AtmIf/n Vpc/vpi DestinationPvp* This component represents the destination end of a soft PVP.
Mib	AtmNetworking
Subcomponents	COMPONENT AtmIf Vpc Dst Configuration (Config)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpc Dst Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *AtmIf/n Vpc/vpi DstPvp* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Dst calledAddress

Access	Read only
Description	This attribute indicates the called address of the soft PVP.
Mib	AtmNetworking

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Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpc Dst **callingAddress**

Access	Read only
Description	This attribute indicates the calling (remote) address of the soft PVP. If the address in not known, then the value of this address is ***Unknown***.
Mib	AtmNetworking
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpc Dst **callingVpi**

Access	Read only
Description	This attribute represents the calling (remote) VPI of the soft PVP. If the VPI value is not known, the attribute value is set to ***Unknown***.
Mib	AtmNetworking
Values	String (1..7, ASCII)
Default	No default

GROUP Atmlf Vpc Dst **OsiState (State)**

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

ATTRIBUTE Atmlf Vpc Dst **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting

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down.

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

Mib — AtmNetworking

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

Default — unlocked

ATTRIBUTE Atmlf Vpc Dst operationalState (osiOper)

Access — Read only

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

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

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

Mib — AtmNetworking

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Atmlf Vpc Dst usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — AtmNetworking

Values — idle
active (activ)
busy

Default — idle

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COMPONENT Atmlf Vpc Dst Configuration (Config)

Groups	GROUP AtmIf Vpc Dst Config DstProv
Scope	Device
Description	*Atmif/n Vpc/n Dst Override* This *Override* component contains provisioned attributes for this destination SPVP. If this component does not exist, the destination SPVC behaves as if this component had been provisioned with default values for all its attributes.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP Atmlf Vpc Dst Config DstProv

Properties	Provisioned
Description	This group contains provisionable attributes for destination SPVC/Ps.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpc Dst Config aisGeneration (ais)

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC or SPVP is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC or SPVP when the SPVC or SPVP is not up. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

COMPONENT Atmlf Vpc TrafficManagement (Tm)

Groups	GROUP AtmIf Vpc Tm Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpc/vpi TrafficManagement,* *AtmIf/n Vcc/vpi.vci TrafficManagement,* *AtmIf/n Vpt/vpi TrafficManagement,*

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AtmIf/n Vpt/vpi Vcc/vci TrafficManagement
The *Tm* subcomponent contains the operational traffic management attributes of a connection. It is created dynamically for each activated *Vcc*, *Vpc,* or *Vpt* component.

Mib	AtmCore
Dyn. Subcomp.	COMPONENT AtmIf Vpc Tm AvailableBitRate (Abr)
Common Verbs	Help List Display

GROUP AtmIf Vpc Tm Operational (Oper)

Properties	Operational
Description	This group contains attributes for the *Tm* component to reflect operational traffic attributes.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Tm txTrafficDescType (txTdt)

Access	Read only
Description	T his attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE AtmIf Vpc Tm txQosClass (txQos)

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video).

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

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

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

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

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable

Default: No default

ATTRIBUTE Atmlf Vpc Tm **txQueueLength (txQLen)**

Access: Read only

Description: This attribute indicates the current number of cells in the transmit queue for this connection.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the length of the common queue which is used for this ATM service category.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***fifo***, this attribute indicates the number of cells for this connection which are enqueued in a first-in-first-out queuing method for this ATM service category. This will only occur for connections on ATM IP cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the length of the per-VC queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current number of cells in the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

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Mib	AtmCore
Values	Decimal (0..1011840)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Tm txQueueCongestionState (txQCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the congestion state of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the congestion state of the per-VC queue. The congestion state of a queue is indicated by a numeric value ranging from 0 to 3. When a queue is in a congested state x, only traffic with discard priority (DP) 0 to x are enqueued. Traffic with DP > x is discarded. For example, if the congestion state is 3, there is no congestion and all traffic is enqueued. Likewise, when the congestion state is 0, there is maximum congestion and only traffic with DP=0 is enqueued on that queue. For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current congestion state of the link class queue used by this connection to buffer its traffic. This attribute does not apply to basic *Vpt*s.
Mib	AtmCore
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Atmlf Vpc Tm holdingPriority (hpri)

Access	Read only
Description	This attribute indicates the actual holding priority in effect for this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. Some applications, for example *Vcc Test*, may override the provisioned holding priority. A value of ***notApplicable*** is displayed when this is an elastic connection.

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Holding priority does not apply to bandwidth elastic connections.

Holding priority has no effect if the equivalent cell rate (ECR) for a connection is zero.

This attribute does not apply to *Vpt Vcc*s.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable

Default: No default

ATTRIBUTE Atmlf Vpc Tm rxTrafficDescType (rxTdt)

Access: Read only

Description: This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.

Mib: AtmCore

Values:
1
2
3
4
5
6
7
8
9

Default: No default

ATTRIBUTE Atmlf Vpc Tm rxQosClass (rxQos)

Access: Read only

Description: This attribute indicates the quality of service for the called to calling direction for this connection. This is only applicable to Soft PVC and SVC connections.

Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video).

Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video).

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

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

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

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable
sameAsFwd

Default: No default

ATTRIBUTE Atmlf Vpc Tm **atmServiceCategory (service)**

Access: Read only

Description: This attribute indicates the ATM service category used for traffic in both directions of the connection.

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

The ***rtVariableBitRate*** service category is intended for real time applications; that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

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

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delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

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

Mib — AtmCore

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtVbr)
nrtVariableBitRate (nrtVbr)
availableBitRate (abr)

Default — No default

ATTRIBUTE Atmlf Vpc Tm **trafficShaping (trShaping)**

Access — Read only

Description — This attribute indicates the traffic shaping state of the connection.

A value of ***notApplicable*** indicates that traffic shaping is not applicable or not supported for this connection. This is the case:
- when the *txTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.
- for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, when the *atmServiceCategory* is ***constantBitRate***.

In these cases, the value of ***notApplicable*** is indicated regardless of whether traffic shaping is enabled or disabled in the provisioning data.

A value of ***disabled*** indicates that traffic shaping is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***linear*** or ***inverseUpc*** indicates that traffic shaping is applicable and supported for the type of connection and has been turned on in the provisioning data. This is the only case that indicates that traffic shaping is performed on the connection. In this case, the actual shaping rate is

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reflected in the *txTrafficDescParm* attribute, parameter number 4. A value of ***linear*** indicates that traffic is being shaped at the constant rate indicated in *txTrafficDescParm* 4. A value of ***inverseUpc*** indicates that the shaper strictly conforms to the requirements of a dual leaky bucket UPC enforcer. This value is indicated if traffic shaping is enabled, and the *txTrafficDescType* for this connection is 6, 7 or 8.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is always ***disabled***.

Traffic shaping for connections with *atmServiceCategory* as ***availableBitRate*** (*txTrafficDescType* 9) depends upon the *abrConnectionType* attribute. If *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, the value of this attribute is ***linear***. If *abrConnectionType* is ***erSwitch*** or ***efciSwitch***, this attribute is ***notApplicable***.

Mib	AtmCore
Values	disabled linear inverseUpc notApplicable
Default	No default

ATTRIBUTE Atmlf Vpc Tm **bearerClassBbc (bcBbc)**

Access	Read only
Description	This attribute indicates the bearer capability for this connection.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

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

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

Class vp service is used to indicate a transparent VP service when the user is requesting an ATM only service from the network. In this case, the

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network does not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except for VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP and SVP connections.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
a
c
x
vp
notApplicable

Default: No default

ATTRIBUTE Atmlf Vpc Tm transferCapabilityBbc (tcBbc)

Access: Read only

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

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance, or in the case that the transfer capability in the call request was set to NoIndication.

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

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

The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

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

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

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Mib	AtmCore
Values	0 1 2 5 8 9 10 notApplicable
Default	No default

ATTRIBUTE Atmlf Vpc Tm clippingBbc (cBbc)

Access	Read only
Description	This attribute indicates the value of the clipping susceptibility parameter in the broadband bearer capability (BBC) Information Element. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	no yes notApplicable
Default	No default

ATTRIBUTE Atmlf Vpc Tm unshapedTransmitQueueing (unshap)

Access	Read only
Description	This attribute indicates the unshaped transmit queuing state of the connection. A value of ***common*** indicates that transmit traffic is being enqueued onto the common transmit queue for this service category. The *txQueueLength* attribute indicates the current length of the common transmit queue. A value of ***fifo*** indicates that transmit traffic is being queued in a first-in-first-out basis for this service category. This is similar to ***common*** queuing, but the *txQueueLength* attribute indicates the number of cells in this connection queue. A value of ***fifo*** will only be indicated for connections on ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards

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with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

A value of ***perVc*** indicates that transmit traffic is being enqueued onto a per-VC queue for this connection.

A value of ***notApplicable*** indicates that transmit traffic is being shaped for this connection, or that unshaped transmit queuing is not applicable for this type of connection. Transmit traffic for a shaped connection is enqueued onto a per-VC queue, but this attribute is only applicable for unshaped connections. Unshaped transmit queuing is not applicable for basic *Vpt*s.

Mib — AtmCore

Values
perVc
common
notApplicable
fifo

Default — No default

ATTRIBUTE Atmlf Vpc Tm bestEffort

Access — Read only

Description — This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib — AtmCore

Values
indicated
notIndicated
notApplicable

Default — No default

ATTRIBUTE Atmlf Vpc Tm forceTagging (tagging)

Access — Read only

Description — This attribute indicates the state of force tagging option for this connection. Force tagging refers to setting the CLP bit for all cells on a connection.

A value of ***enabled*** indicates that the CLP bit is being set to 1 for all cells in the transmit direction on this connection.

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A value of ***disabled*** indicates that the CLP bit is unchanged for cells in the transmit direction on this connection. The value ***disabled*** is always displayed for *Vpt*s since forced tagging is applied on a per *Vpt Vcc* basis.

Mib — AtmCore

Values — disabled
enabled

Default — No default

ATTRIBUTE AtmIf Vpc Tm weight

Access — Read only

Description — This attribute indicates the relative weight of this unshaped connection. Connections with a larger weight get a larger proportion of the link bandwidth or in the case of standard *Vpt Vcc*s, the *Vpt* bandwidth.

For all but standard *Vpt Vcc*s, the default connection weight is determined by the weight policy for a service category and the traffic descriptor for a connection. For standard *Vpt Vcc*s, the default connection weight is determined by the *Vcc*'s service category.

A value from 1 to 4095 indicates an actual weight. The value ***upToQueueLimit*** indicates that the weight of a connection is up to the transmit queue limit for this connection and is used for connections which have the value of the *unshapedTransmitQueueing* attribute displayed as ***fifo***.

This attribute has a displayed value of ***notApplicable*** in the following cases:
- This connection has the value of the *trafficShaping* attribute displayed as either ***linear*** or ***inverseUpc***.
- This connection has the value of the *trafficShaping* attribute displayed as ***disabled***, but the connection's service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc***.
- This connection has the value of the *unshapedTransmitQueueing* attribute displayed as ***common***.
- This is a basic *Vpt* connection.
- For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, since per-connection weight is not supported.

Mib — AtmCore

Values — Decimal (1..4095)
upToQueueLimit
notApplicable

Default — No default

ATTRIBUTE AtmIf Vpc Tm usageParameterControl (upc)

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Access	Read only
Description	This attribute indicates the UPC state of the connection. A value of ***notApplicable*** indicates that UPC is not applicable or not supported for the connection. This is the case: - when the connection's *rxTrafficDescType* is 1 or 2. - for standard *Vpt Vcc*s and basic *Vpt*s. A value of ***notApplicable*** is set regardless of whether UPC is disabled or enabled in provisioning data. A value of ***disabled*** indicates that UPC is applicable and supported for the type of connection but has been turned off in the provisioning data. A value of ***enforced*** indicates that UPC is actively checking conformance for the connection and is discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. On some ATM cards, the counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes. A value of ***monitored*** indicates that UPC is actively checking conformance for the connection and counting the violations, but is not discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. The counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt. rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes. If the *atmServiceCategory* for this connection is ***availableBitRate***, a value of ***enforced*** indicates that Dynamic Generic Cell Rate Algorithm (DGCRA) is active for the connection. The traffic descriptor parameters used for DGCRA enforcement are reflected in the *rxTrafficDescParm* of the connection.
Mib	AtmCore
Values	enforced disabled monitored notApplicable
Default	No default

ATTRIBUTE Atmlf Vpc Tm txPacketWiseDiscard (txpd)

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point.

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This attribute is not applicable for *Vpt*s.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

A value of ***wred*** indicates that Weighted Random Early Detection is in effect at this connection point. W-RED can be enabled by provisioning for PVCs and SPVCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Packet-wise functions are not applicable to virtual path connections (VPCs) on these cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points.

For ***16pOC3PosAtm***, ***4pMRPosAtm*** and ***1pOC48ChSmIrAtm*** cards, packet-wise discard functions apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points.

Mib	AtmCore
Set of	ppd epd wred
Default	No default

ATTRIBUTE Atmlf Vpc Tm **rxPacketWiseDiscard (rxpd)**

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point. This attribute is not applicable for *Vpt*s.

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A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, packet-wise functions are not applicable to virtual path connections (VPCs).

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch, 4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs.

For ***1pOC48ChSmIrAtm*** card, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Note that a provisioned value of ***enabled*** for the *Vcc/Vpc Vcd/Vpd Tm rxPacketWiseDiscard* provisionable attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in actually enabling packet-wise discard functions in the receive data direction of a connection locally on these cards, thus does not affect the operational value displayed.

Mib	AtmCore
Set of	ppd epd
Default	No default

ATTRIBUTE Atmlf Vpc Tm bandwidthElastic (bwElastic)

Access	Read only
Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail,

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such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application (for example, *Trunk*) running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced is displayed in the *bandwidthReduction* attribute.

A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection is not released.

A value of ***no*** indicates that the bandwidth for this connection is not reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority*.

Bandwidth elasticity has no effect for connections which have an equivalent cell rate (ECR) of zero.

This attribute is not applicable for *Vpt*s and *Vpt Vcc*s.

Mib	AtmCore
Values	no yes
Default	No default

ATTRIBUTE Atmlf Vpc Tm **bandwidthReduction (bwReduction)**

Access	Read only
Description	This attribute shows the amount by which the bandwidth has been reduced for this connection. This value is non-zero only for connections which have *bandwidthElastic* displayed as ***yes***, and which are also operating in a reduced bandwidth mode. This is typically the case for selected connections running over an IMA link. This attribute takes a value from 0 (no reduction) up to the ECR. For all connections which are running at their full allocated bandwidth, *bwReduction* has the value 0. Connections which have been reduced in allocated bandwidth have a positive number for this attribute. The *bwReduction* may be subtracted from the ECR (which is displayed as *txTrafficDescParm* 5) to determine the actual bandwidth allocated to this connection.
Mib	AtmCore
Values	Decimal (0..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Atmlf Vpc Tm **abrConnectionType (abrType)**

Access	Read only
Description	This attribute indicates the type of ABR behavior which is in effect at this connection. This attribute is only applicable if the *atmServiceCategory*

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attribute is ***availableBitRate***. If the *atmServiceCategory* attribute is not ***availableBitRate***, this attribute value is set to ***notApplicable***.

For ATM cards which do not support ABR connections, the possible values for this attribute are ***notApplicable***, ***efciSwitch***, or ***nonAbrInterworking***. In EFCI marking mode, the Explicit Forward Congestion Indication (EFCI) field in the data cell headers is used to indicate transmit queue congestion.

For ATM cards which do support ABR connections, if the *connectionPointType* is ***connectionEndPoint***, the value of this attribute is ***sourceDest***. In this mode, the ABR Source and Destination behavior is in effect at this connection. This attribute is also ***sourceDest*** in the case where the next hop connection is specified as ***nonAbrInterworking***. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

If the *connectionPointType* is not ***connectionEndPoint***, the value of this attribute depends upon the *abrConnectionType* provisioning and the card type to which the traffic is forwarded on the backplane. The default *abrConnectionType* is provisioned at the *CA Abr abrConnectionType* attribute, and may be overridden for a provisioned connection in the *Vcd Tm abrConnectionType* or *Vpd Tm abrConnectionType* attribute. If the *CA Abr abrConnectionType* attribute is ***virtualSourceDest*** at either one of the two connection points, and if both the connection points are defined on ATM cards which support ABR connections, virtual source and destination behavior is applied to the connection. In this instance, the attribute displays the value ***virtualSourceDest***.

This attribute has the value ***erSwitch*** if ABR explicit rate functionality is in effect at this connection. In this mode, the switch may modify the Explicit Rate (ER) field of backward Resource Management (RM) cells to indicate the status of congestion at this connection point.

This attribute has the value ***nonAbrInterworking*** in the case where this connection point is functioning as an SPVC origin for an ABR connection where the link side of this connection is configured as a non-ABR ATM service category. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

Mib	AtmCore
Values	erSwitch efciSwitch virtualSourceDest sourceDest nonAbrInterworking notApplicable
Default	No default

ATTRIBUTE Atmlf Vpc Tm txTrafficDescParm (txTdp)

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Access	Read only
Description	This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR), actual cell rate (ACR), explicit rate (ER), equivalent cell rate (ECR), and actual shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. When *txTrafficDescType* is 1 or 2, parameters 1 through 5 are unused. In this description, PCR is the greater of either the PCR or the requested shaping rate (parameter 1 or parameter 5) specified in the *txTrafficDescParm* attribute under the *Vcd Tm* or *Vpd Tm* component. When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused. When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic. When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. When *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, parameter 4 reflects the actual shaping rate in cell/s for this connection. For CQC-based ATM cards, the set of available shaping rates is based on the number of interfaces doing shaping (attribute *perVcQueueInterfaces*), and the *shapingScalingFactor* attribute of the *Arc Cqc Override* component. A rate of zero (0) indicates that shaping is not performed, or that the interface is down.

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When *txTrafficDescType* is 9**,** parameter 1 represents the PCR; parameter 2 represents the Cell Delay Variation Toleration (CDVT); parameter 3 represents the Minimum Cell Rate (MCR); the meaning of parameter 4 depends upon the value of the *abrConnectionType* attribute. if *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, parameter 4 represents the Allowed Cell Rate (ACR); If *abrConnectionType* is ***erSwitch***, parameter 4 represents the Explicit Rate (ER); and if *abrConnectionType* is ***efciSwitch***, parameter 4 reflects the actual shaping rate in cell/s for this connection.

When *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9, parameter 5 reflects the equivalent cell rate in cell/s for this connection as determined by the Connection Admission Control (CAC) algorithm. The equivalent cell rate is useful in determining the admission characteristics of this connection.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vpc Tm **txQueueThresholds (txQThresh)**

Access	Read only
Description	This attribute indicates the queue limit and the discard thresholds for the transmit queue of this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the thresholds of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the thresholds of the per-VC queue. The first element indicates the queue limit. The provisioned value of the transmit queue limit is derived from the *txQueueLimit* attribute under the service category subcomponents of the *CA* component for the service category of this connection. The second element is the threshold that marks the transition from congestion state 1 to congestion state 0. This is the threshold at which traffic with discard priority (DP) = 1 is discarded. This threshold is set at approximately 90 percent of the first parameter, the operational queue limit. The third element is the threshold that marks the transition from congestion state 2 to congestion state 1. This is the threshold at which traffic with DP = 2 is discarded. This threshold is set at approximately 75 percent of the first parameter, the operational queue limit. The fourth element is the threshold that marks the transition from

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congestion state 3 to congestion state 2. This is the threshold at which traffic with DP = 3 is discarded. This threshold is set at approximately 35 percent of the first parameter, the operational queue limit.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the thresholds of the link class queue used by this connection to buffer it traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Vector of	Decimal (0..1011840)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE **AtmIf Vpc Tm** **rxTrafficDescParm (rxTdp)**

Access	Read only
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. Cell delay variation tolerance (CDVT) is expressed in microseconds. When *rxTrafficDescType* is 1 or 2, none of the parameters are used. When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; parameter 4 represents the CDVT. When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; parameter 4 represents the CDVT. When *rxTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP

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equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents CDVT; parameter 3 represents the MCR; parameter 4 is not used.

If *upc* is ***disabled*** for this connection, the values of PCR, SCR, MBS and CDVT are the provisioned parameters.

If *upc* is ***enabled***, the values of PCR, SCR, MBS, and CDVT are exactly the values used by the usage parameter control hardware in policing the arriving traffic. These may vary slightly from the provisioned values due to granularity of the hardware. In the case where the PCR is equal to the SCR, the effective MBS is zero.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Atmlf Vpc Tm **txQosParameters (tqp)**

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE Atmlf Vpc Tm **rxQosParameters (rqp)**

Access	Read only

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Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

COMPONENT Atmlf Vpc Tm AvailableBitRate (Abr)

Groups	GROUP Atmlf Vpc Tm Abr Operational (Oper)
Scope	Device
Description	*Atmlf/n Vpc/vpi Tm AvailableBitRate,* *Atmlf/n Vcc/vpi.vci Tm AvailableBitRate,* *Atmlf/n Vpt/vpi Tm AvailableBitRate,* *Atmlf/n Vpt/vpi Vcc/vci Tm AvailableBitRate* This component contains ABR-related operational attributes of a connection. It is dynamically created for connections where the value of the *atmServiceCategory* attribute is ***availableBitRate***, and where the value of the *abrConnectionType* attribute is ***sourceDest***, or ***virtualSourceDest***.
Mib	AtmCore
Common Verbs	Help List Display

GROUP Atmlf Vpc Tm Abr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for connections using ABR service category.
Mib	AtmCore

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ATTRIBUTE Atmlf Vpc Tm Abr **initialCellRate (icr)**

Access	Read only
Description	This attribute indicates the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. For nailed-up connections, this attribute is determined by the provisioned value of the *initialCellRate* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element. The ICR for a connection is a value between the MCR and the PCR. Furthermore, ICR has an upper bound determined by the *transientBufferExposure* divided by *fixedRoundTripTime*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **transientBufferExposure (tbe)**

Access	Read only
Description	This attribute indicates the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the resource to send during start-up periods, before the first Resource Management (RM) cell returns. For nailed-up connections, this attribute is determined by the provisioned value of the *transientBufferExposure* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **fixedRoundTripTime (frtt)**

Access	Read only
Description	This attribute indicates the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. For nailed-up connections, this attribute is determined by the provisioned value of the *fixedRoundTripTime* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

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Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **rateDecreaseFactor (rdf)**

Access	Read only
Description	This attribute indicates the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **rateIncreaseFactor (rif)**

Access	Read only
Description	This attribute indicates the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateIncreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

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Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **maxCellPerRmCell (nrm)**

Access	Read only
Description	This attribute indicates the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxCellsPerRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **maxTimeBetweenRmCell (trm)**

Access	Read only
Description	This attribute indicates the TRM parameter for this connection. TRM provides an upper bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxTimeBetweenRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **cutoffDecreaseFactor (cdf)**

Access	Read only
Description	This attribute indicates the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the

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value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero.

CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the *forwardRmCellLimit* attribute, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

For nailed-up connections, this attribute is determined by the provisioned value of the *cutoffDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64)
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **acrDecreaseTimeFactor (adtf)**

Access	Read only
Description	This attribute indicates the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. For nailed-up connections, this attribute is determined by the provisioned value of the *acrDecreaseTimeFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **forwardRmCellLimit (crm)**

Access	Read only
Description	This attribute indicates the CRM parameter for this connection. CRM is the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the Allowed Cell Rate (ACR) value would be

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	decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is obtained as *transientBufferExposure* divided by *maxCellsPerRmCell*.
Mib	AtmCore
Values	Decimal (1; 3; 7; 15; 31; 63; 127; 255; 511; 1023; 2047; 4095)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **txRateChangeInfo (txrci)**

Access	Read only
Description	This attribute indicates the rate change information put into the last forward Resource Management (RM) cell turned around as a backward-RM cell. For connections configured as an ABR Source or Destination, the turned around backward-RM cell is sent over the interface. For connections configured as an ABR Virtual Source or Virtual Destination, the turned around backward-RM cell is sent over the backplane.
Mib	AtmCore
Values	congestionIndicated noIncreaseIndicated explicitRateIndicated
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **acrRateChangeInfo (arci)**

Access	Read only
Description	This attribute indicates the type of change in the Allowed Cell Rate (ACR) as a result of the information in the last backward Resource Management (B-RM) cell received from the interface. This attribute value is only applicable when the *Vcc Tm* or *Vpc Tm* *abrConnectionType* attribute is ***sourceDest*** or ***VirtualSourceDest***. In all other cases, this attribute value is ***notApplicable***. A value of ***noChange*** indicates that the rate did not change as a result of the last backward RM cell received. A value of ***decreasedByRdf*** or ***increasedByRif*** indicates that the ACR was increased or decreased by the corresponding factor. This change is as a result of the CI or NI bit setting in the last backward RM cell, or an ADTF timeout.

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	A value of ***setToExplicitRate*** indicates that the ACR was set to the ER value in the last backward RM cell.
Mib	AtmCore
Values	noChange decreasedByRdf increasedByRif setToExplicitRate notApplicable
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **txFwdRmCells**

Access	Read only
Description	This attribute counts the number of forward Resource Management (RM) cells sent over the interface since the last backward RM-cell was received from the interface. If the value of this attribute is greater than or equal to the value of *forwardRmCellLimit*, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. This counter is reset to zero each time a backward-RM cell is received. This counter does not wrap to zero if it reaches its maximum value of 4095 in order to indicate that no backward RM cell has been received.
Mib	AtmCore
Values	Decimal (0..4095)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Tm Abr **rxEfci**

Access	Read only
Description	This attribute indicates the value of the Explicit Forward Congestion Indication (EFCI) bit of the last data cell received from the interface. When a forward Resource Management (RM) cell is turned around as a backward-RM cell, the Congestion Indication (CI) field of the backward-RM cell is set to 1, if the value of this attribute is ***indicated***. This attribute is set to ***notIndicated*** each time a backward-RM cell is transmitted.
Mib	AtmCore
Values	notIndicated indicated

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Default	No default

COMPONENT Atmlf Vpc MulticastNailedUpRelayPoint (Mnrp)

Groups	GROUP Atmlf Vpc Mnrp Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Mnrp* This component is used to establish a root of a multicast nailed-up ATM Bearer Service (ABS) connection. By linking a *Mnrp* to a *Nrp*, the associated connections are configured to relay ATM cells from *Mnrp* to *Nrp*. The *Mnrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, *Nrp* and *Loop*). This component is supported only on 4pOC3SmIrAtm and 4pOC3MmAtm cards.This component is not supported under *Vpt Vcc* and *Vpt Vpc*.
Mib	AtmBearerService
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpc Mnrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Mnrp* component.
Mib	AtmBearerService

ATTRIBUTE Atmlf Vpc Mnrp oamSegmentBoundary (sb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Mnrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.
Mib	AtmBearerService
Values	no yes sameAsInterface

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Default	sameAsInterface

ATTRIBUTE Atmlf Vpc Mnrp **bandwidthElastic (bwElastic)**

Access	Read and write
Criticality	Component
Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Mnrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid. A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority*.
Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpc Mnrp **overrideHoldingPriority (ohpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3 4 noOverride

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Default	noOverride

ATTRIBUTE Atmlf Vpc Mnrp **nextHop (nextHop)**

Access	Read and write
Description	This attribute specifies the list of *Nrp* components with which this *Mnrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp.* This attribute must be provisioned with at least one Nrp component under a compatible connection type.
Mib	AtmBearerService
List of	Link (Service, nextHop)
Default	No default

COMPONENT Atmlf Vpc **PerformanceMonitoring (Pm)**

Instance	linkSide switchSide
Groups	GROUP AtmIf Vpc Pm PmStatus (Status) GROUP AtmIf Vpc Pm FwdClrMeasurements (FwdClr) GROUP AtmIf Vpc Pm BwdClrMeasurements (BwdClr) GROUP AtmIf Vpc Pm ArMeasurements (Ar)
Scope	Device
Description	*AtmIf/n Vcc/x.y PerformanceMonitoring* *AtmIf/n Vpt/x Vcc/y PerformanceMonitoring* *AtmIf/n Vpc/x PerformanceMonitoring* This component contains operational attributes for Performance Monitoring (PM) measurements on the connection. It also allows starting and stopping PM measurements when the *controlMode* attribute in the *AtmIf Pm* or *AtmIf Vcc Vcd Pm* or *AtmIf Vpc Vpd Pm* component is set to ***onDemand***.
Mib	AtmCore
Common Verbs	Help List Display

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VERB START Atmlf Vpc Pm

Impact	Service
Description	*Start AtmIf/n Vcc/x.y PerformanceMonitoring* *Start AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) activation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when the connection is idle, PM has already been started or the *controlMode* attribute for the PM measurements has a value of ***autoStart***. The measurements will continue until the *Stop* verb is issued.

VERB STOP Atmlf Vpc Pm

Impact	Service
Description	*Stop AtmIf/n Vcc/x.y PerformanceMonitoring* *Stop AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) deactivation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when PM is not running or the *controlMode* attribute for the PM measurements has a value of ***autoStart***.

GROUP Atmlf Vpc Pm **PmStatus (Status)**

Properties	Operational
Description	This group contains attributes indicating the status of each Performance Monitoring (PM) measurement.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc Pm **clrMeasurementStatus (clr)**

Access	Read only
Description	This attribute displays the Cell Loss Ratio (CLR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

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ATTRIBUTE Atmlf Vpc Pm **arMeasurementStatus (arStatus)**

Access	Read only
Description	This attribute indicates the Availability Ratio (AR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for the failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE Atmlf Vpc Pm **failureCause (cause)**

Access	Read only
Description	This attribute indicates the failure cause of Performance Monitoring (PM) measurements. The following are possible causes: The value ***noError*** indicates no error. The value ***unknownCause*** indicates unknown failure cause. The value ***softwareResourcesUnavailable*** indicates software resources reserved for a maximum of 255 active PMs on the local FP card have been used up. The value ***hardwareResourcesUnavailable*** indicates hardware resources reserved for a maximum of 512 active PMs CLR card have been used up on the Link Side local card. The value ***remoteEndNoResponse*** indicates no response from remote end during activation. The value ***activationCollision*** indicates activation collision was detected. Usually this is caused by both ends of the connection being provisioned to request PM. Only one end should be so provisioned. The value ***remoteEndRejectedActivation*** indicates the remote end has rejected an activation request. Usually this is due to the remote end reaching a resource limit. The value ***pcrUnsupported*** indicates the Tx or Rx PCR is out of range.

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The PCR value must be between 0 and 409601.

The value ***nextHopConnectionUnsupported*** indicates the next hop card type or connection type do not allow access to the necessary hardware to support PM measurements.

The value ***upcNotDisabled*** indicates UPC is not disabled on the local next hop card for this connection. PM measurements are not supported when UPC is either enforced or monitored.

Mib — AtmCore

Values
noError
unknownCause
softwareResourcesUnavailable
hardwareResourcesUnavailable
remoteEndNoResponse
activationCollision
remoteEndRejectedActivation
pcrUnsupported
nextHopConnectionUnsupported
upcNotDisabled

Default — noError

ATTRIBUTE Atmlf Vpc Pm **clrEnhancementStatus (enhanced)**

Access — Read only

Description — This attribute indicates an enhanced mode of operation for Cell Loss Ratio (CLR) measurements by including cell discards from the remote segment end point which are not covered by the performance measurement (PM) cell.

The value ***inactive*** indicates that CLR enhanced mode of operation has not been activated.

The value ***active*** indicates that discards at the remote segment end point are being included in CLR measurements.

The value ***remoteEndNotProvidingStatistics*** indicates that the remote end is not replying to proprietary requests for additional discard counts. This occurs when the remote end does not have the software necessary to recognize these requests.

Mib — AtmCore

Values
inactive
active
remoteEndNotProvidingStatistics

Default — inactive

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GROUP Atmlf Vpc Pm FwdClrMeasurements (FwdClr)

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the forward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc Pm fwdTotalClrInterval

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) has been calculated in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vpc Pm fwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm fwdTotalUserCellsTx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the local end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm fwdTotalUserCellsRx01

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Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm fwdTotalUserCellsTx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the local end over the total CLR measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm fwdPmCellDiscardCount

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm fwdClr0

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE Atmlf Vpc Pm fwdClr01

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Access	Read only
Description	This attribute indicates the CLR for CLP=0+1 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP Atmlf Vpc Pm BwdClrMeasurements (BwdClr)

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the backward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc Pm bwdTotalClrInterval

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) measurement has been calculated in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vpc Pm bwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm bwdTotalUserCellsTx0

Access	Read only

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Description	This attribute indicates the number of cells with CLP=0 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm bwdTotalUserCellsRx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm bwdTotalUserCellsTx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpc Pm bwdPmCellDiscardCount

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

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ATTRIBUTE Atmlf Vpc Pm **bwdClr0**

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE Atmlf Vpc Pm **bwdClr01**

Access	Read only
Description	This attribute displays the CLR for CLP=0+1 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP Atmlf Vpc Pm **ArMeasurements (Ar)**

Properties	Operational
Description	This group contains Availability Ratio (AR) measurements of the connection.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc Pm **currentAvailabilityStatus**

Access	Read only
Description	This attribute indicates the current status of the bidirectional connection for purposes of Availability Ratio (AR) computation. The value ***notApplicable*** means AR measurement was not requested on this connection. The value ***available*** means AR is running and considers the connection available (that is, the *arAvailableTime* attribute is being incremented). The value ***unavailable*** means AR measurement was requested but the connection is currently unavailable.
Mib	AtmCore
Values	notApplicable available unavailable
Default	No default

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ATTRIBUTE Atmlf Vpc Pm arTotalTime

Access	Read only
Description	This attribute indicates the total time used for calculating Availability Ratio (AR) of the bi-directional connection.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vpc Pm arAvailableTime

Access	Read only
Description	This attribute indicates the total time the connection was available.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vpc Pm arAvailabilityRatio

Access	Read only
Description	This attribute indicates the ratio of network availability representing the ratio of available time to the total time of the connection.
Mib	AtmCore
Values	Decimal (0.0000000..1.0000000)
Default	No default

COMPONENT Atmlf Vpc PathTraceRecord (PTRecord)

Groups	GROUP Atmlf Vpc PTRecord Operational (Oper)
Scope	Device
Description	*Atmlf/n Vcc/x.y PTRecord* *Atmlf/n Vpc/n PTRecord* *Atmlf/n Vpt/n Vcc/x.y PTRecord*

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	This component represents the path trace records for this connection. If the connection is deleted, this component is also deleted.
Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT AtmIf Vpc PTRecord Hop
Common Verbs	Help List Display

GROUP AtmIf Vpc PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally**:* The trace completed normally. ***Incomplete**:* Partial trace returned. ***Exceeded information element length limitations**:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations**:* The message length exceeded the maximum allowed size.
Mib	AtmNetworking
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmNetworking

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Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord **diagCode**

Access	Read: All Write: Illegal
Criticality	Component

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Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpc PTRecord Hop

Instance	Decimal (0..200)
Groups	GROUP AtmIf Vpc PTRecord Hop Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT AtmIf Vpc PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP AtmIf Vpc PTRecord Hop Operational (Oper)

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

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ATTRIBUTE Atmlf Vpc PTRecord Hop **ingressVpiVci (vpiVci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)

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Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (12, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **portId**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **portName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (55, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpc PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback

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	Received at Trace Destination Node" indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpc PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the "PNNI Crankback Gap" indicator is present. The "PNNI Crankback Gap" indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpc PTRecord Hop **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component

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Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE **AtmIf Vpc PTRecord Hop** **blockedNodeId (bNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpc PTRecord Hop** **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpc PTRecord Hop** **blockedLinkPortId (bPortId)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **blockedLinkSucceedingNodeId (sNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **dstVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)

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Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Vpc PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking

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Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	no yes
Default	no

COMPONENT AtmIf Vpc PTRecord Hop **VendorSpecificInfo (Vsi)**

Instance	Decimal (0..10)
Groups	GROUP AtmIf Vpc PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

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	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP **AtmIf Vpc PTRecord Hop Vsi** **Operational (Oper)**

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

ATTRIBUTE **AtmIf Vpc PTRecord Hop Vsi** **length**

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmNetworking
Values	Decimal (0..11)
Default	No default

ATTRIBUTE **AtmIf Vpc PTRecord Hop Vsi** **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmNetworking
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE **AtmIf Vpc PTRecord Hop Vsi** **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmNetworking
Values	String (1..8, Hex)
Default	No default

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COMPONENT Atmlf Vpc RerouteInfo (RerInfo)

Groups	GROUP AtmIf Vpc RerInfo Operational (Oper) GROUP AtmIf Vpc RerInfo EbrOperational (EOper) GROUP AtmIf Vpc RerInfo LocalOperational (LOper) GROUP AtmIf Vpc RerInfo GlobalOperational (GOper) GROUP AtmIf Vpc RerInfo EbrStatistics (EStats) GROUP AtmIf Vpc RerInfo LocalStatistics (LStats) GROUP AtmIf Vpc RerInfo GlobalStatistics (GStats)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci RerouteInfo* *AtmIf/n Vpc/vpi RerouteInfo* *AtmIf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo* This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP Atmlf Vpc RerInfo Operational (Oper)

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

ATTRIBUTE Atmlf Vpc RerInfo lastOptimizationMetric (lOptMet)

Access	Read only
Description	This attribute indicates which optimization metric was last used to select a path for the connection segment.
Mib	AtmNetworking
Values	cdv maxCtd aw specifiedPath
Default	No default

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GROUP Atmlf Vpc RerInfo **EbrOperational (EOper)**

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

ATTRIBUTE Atmlf Vpc RerInfo **ebrRecoverySubscribed (eRecSub)**

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

ATTRIBUTE Atmlf Vpc RerInfo **ebrOptimizationSubscribed (eOptSub)**

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

ATTRIBUTE Atmlf Vpc RerInfo **ebrOptimizationMetricValue (eOptVal)**

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

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

Mib — AtmNetworking

Values — Decimal (0..4294967292)
primary
alternate

Default — No default

ATTRIBUTE AtmIf Vpc RerInfo ebrOptimalMetricValue (eOptMetVal)

Access — Read only

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

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

Mib — AtmNetworking

Values — Decimal (0..4294967292)
primary
alternate

Default — No default

ATTRIBUTE AtmIf Vpc RerInfo ebrOptimizationState (eOptSt)

Access — Read only

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

One of the following values is indicated:
optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

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	This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo **ebrTimeOfLastRecovery (eTime)**

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

GROUP AtmIf Vpc RerInfo **LocalOperational (LOper)**

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

ATTRIBUTE AtmIf Vpc RerInfo **localRecoverySubscribed (lRecSub)**

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

ATTRIBUTE AtmIf Vpc RerInfo **localOptimizationSubscribed (lOptSub)**

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

ATTRIBUTE AtmIf Vpc RerInfo localOptimizationMetricValue (lOptVal)

Access	Read only
Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. A value of ***undefined*** indicates that the local optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo localOptimalMetricValue (lOptMetVal)

Access	Read only
Description	This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967294) undefined

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Default	No default

ATTRIBUTE AtmIf Vpc RerInfo **localOptimizationState (lOptSt)**

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

ATTRIBUTE AtmIf Vpc RerInfo **localTimeOfLastRecovery (lTime)**

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

GROUP AtmIf Vpc RerInfo **GlobalOperational (GOper)**

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

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

Mib — AtmNetworking

ATTRIBUTE AtmIf Vpc RerInfo globalRecoverySubscribed (gRecSub)

Access — Read only

Description — This attribute indicates whether the connection segment is subscribed to global connection recovery.

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

Mib — AtmNetworking

Values — no
yes

Default — No default

ATTRIBUTE AtmIf Vpc RerInfo globalOptimizationSubscribed (gOptSub)

Access — Read only

Description — This attribute indicates whether the connection segment is subscribed to global path optimization.

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

Mib — AtmNetworking

Values — no
yes

Default — No default

ATTRIBUTE AtmIf Vpc RerInfo globalOptimizationMetricValue (gOptVal)

Access — Read only

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

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

Mib — AtmNetworking

Values — Decimal (0..4294967292)
primary
alternate

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Default	No default

ATTRIBUTE AtmIf Vpc RerInfo **globalOptimalMetricValue (gOptMetVal)**

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

ATTRIBUTE AtmIf Vpc RerInfo **globalOptimizationState (gOptSt)**

Access	Read only
Description	This attribute indicates the current global optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	optimal recovered optimized

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Default	No default

ATTRIBUTE Atmlf Vpc RerInfo **globalTimeOfLastRecovery (gTime)**

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

GROUP Atmlf Vpc RerInfo **EbrStatistics (EStats)**

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

ATTRIBUTE Atmlf Vpc RerInfo **totalEbrConnectionRecoveries (eConnRec)**

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

ATTRIBUTE Atmlf Vpc RerInfo **totalEbrPathOptimizations (ePathOpt)**

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

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ATTRIBUTE AtmIf Vpc RerInfo **totalEbrOptimizationAttempts (eOptAtt)**

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

GROUP AtmIf Vpc RerInfo **LocalStatistics (LStats)**

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

ATTRIBUTE AtmIf Vpc RerInfo **totalLocalConnectionRecoveries (lConnRec)**

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

ATTRIBUTE AtmIf Vpc RerInfo **totalLocalPathOptimizations (lPathOpt)**

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

ATTRIBUTE AtmIf Vpc RerInfo **totalLocalOptimizationAttempts (lOptAtt)**

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

GROUP AtmIf Vpc RerInfo GlobalStatistics (GStats)

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

ATTRIBUTE AtmIf Vpc RerInfo totalGlobalConnectionRecoveries (gConnRec)

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

ATTRIBUTE AtmIf Vpc RerInfo totalGlobalPathOptimizations (gPathOpt)

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

ATTRIBUTE AtmIf Vpc RerInfo totalGlobalOptimizationAttempts (gOptAtt)

Access	Read only

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

COMPONENT AtmIf Vpc MplsConnection (MplsCon)

Groups	GROUP AtmIf Vpc MplsCon MplsConFec (Mcf) GROUP AtmIf Vpc MplsCon MplsConServLabel (Mcsl) GROUP AtmIf Vpc MplsCon Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpc/vpi MplsCon* This component is used to establish an emulated ATM Vpc cell relay service over an MPLS network. By linking together an *MplsCon* component with an *Lsp Fec Ipv4Epa* component using the *transportFec* attribute, the associated connections are configured to relay ATM cells to one another. The *MplsCon* component requires exclusive use of its parent *Vpc* and cannot co-exist with other ATM service components (such as *Nrp*, *Src, Mnrp* and *Loop*). The attributes *transportFec*, *incomingServiceLabel*, and *outgoingServiceLabel* must be provisioned. Also, the *incomingServiceLabel* attribute value must be unique for this node. If an *MplsCon* component is added under the *Vpc* component, then the *Vr Dsd* component must have an *AtmServiceMap* subcomponent.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpc MplsCon MplsConFec (Mcf)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *MplsCon* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc MplsCon transportFec (tFec)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the underlying transport LSP that carries the service traffic with which this *MplsCon* component is associated. A sample value is ***Vr/0 Mpls LspG Fec Ipv4Epa/47.138.152.83,32***. This attribute must be provisioned.
Mib	AtmCore
Values	The name of the component
Default	No default

ATTRIBUTE Atmlf Vpc MplsCon **remoteProviderEdge (rPE)**

Access	Read and write
Description	This attribute specifies the remote Provider Edge node information of the transport LSP. The operator can store either the name or the Primary IP Address of the remote PE node. This label is not a mandatory field that is required to set up this connection.
Mib	AtmCore
Values	String (0..82, ASCII)
Default	""

GROUP Atmlf Vpc MplsCon **MplsConServLabel (Mcsl)**

Properties	Provisioned
Description	This group contains the service labels used by an ATM Vpc connection to transmit and receive data for the *MplsCon* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpc MplsCon **incomingServiceLabel (isl)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the incoming service label carried by the transport LSP with which this *MplsCon* component is associated. The incoming service label on this node must match the outgoing service label on the remote Provider Edge node.
Mib	AtmCore
Values	Decimal (262144..264191) undefined
Default	undefined

ATTRIBUTE Atmlf Vpc MplsCon **outgoingServiceLabel (osl)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies the outgoing service label carried by the transport LSP with which this *MplsCon* component is associated. The outgoing service label must match the incoming service label on the remote Provider Edge node.
Mib	AtmCore
Values	Decimal (0..1048575) undefined
Default	undefined

GROUP **AtmIf Vpc MplsCon** **Operational (Oper)**

Properties	Operational
Description	This group provides the operational attributes of the *MplsCon* component.
Mib	AtmCore

ATTRIBUTE **AtmIf Vpc MplsCon** **operationalStatus (status)**

Access	Read only
Description	This attribute indicates the health of the Transport LSP connection. A brief description of the *operationalStatus* attribute values is listed in the following: ***noError***: The transport LSP is Up. ***tLspDown***: The transport LSP cannot be established.
Mib	AtmCore
Values	noError tLspDown
Default	tLspDown

ATTRIBUTE **AtmIf Vpc MplsCon** **clp0ToPhb (clp0)**

Access	Read only
Description	This attribute indicates the PerHopBehavior applied to this connection when Clp = 0.
Mib	AtmCore
Values	Decimal (0..63) notApplicable
Default	notApplicable

ATTRIBUTE **AtmIf Vpc MplsCon** **clp1ToPhb (clp1)**

Access	Read only

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Description	This attribute indicates the PerHopBehavior applied to this connection when Clp = 1.
Mib	AtmCore
Values	Decimal (0..63) notApplicable
Default	notApplicable

COMPONENT Atmlf VirtualChannelConnection (Vcc)

Instance	String (3..10, ASCII)
Groups	GROUP AtmIf Vcc OsiState (State) GROUP AtmIf Vcc Operational (Oper) GROUP AtmIf Vcc ConnectionInfo (ConnInfo) GROUP AtmIf Vcc Status GROUP AtmIf Vcc Statistics (Stats) GROUP AtmIf Vcc Performance (Perf)
Scope	Device
Description	*AtmIf/n VirtualChannelConnection/vpi.vci* This component represents a virtual channel connection (VCC). For *Vccs* directly beneath the *AtmIf*, the instance value defines the VPI and VCI values for this connection—for example, *Vcc/16.32* would define a connection with a VPI of 16 and a VCI of 32. The VPI can be in the range of 0 to 4095 and the VCI can be in the range

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of 0 to 65535. Note that a *Vcc* instance of 0.0 is invalid as defined in the ATM Forum.

Mib	AtmCore
Subcomponents	COMPONENT AtmIf Vcc VirtualChannelDescriptor (Vcd)
Opt. Subcomp.	COMPONENT AtmIf Vcc Loop (Loop) COMPONENT AtmIf Vcc NailedUpRelayPoint (Nrp) COMPONENT AtmIf Vcc NailedUpEndPoint (Nep) COMPONENT AtmIf Vcc Test (Test) COMPONENT AtmIf Vcc SourcePvc (Src) COMPONENT AtmIf Vcc MulticastNailedUpRelayPoint (Mnrp) COMPONENT AtmIf Vcc MulticastSourcePvc (Msrc)
Dyn. Subcomp.	COMPONENT AtmIf Vcc TrafficManagement (Tm) COMPONENT AtmIf Vcc EndPoint (Ep) COMPONENT AtmIf Vcc RelayPoint (Rp) COMPONENT AtmIf Vcc PerformanceMonitoring (Pm) COMPONENT AtmIf Vcc PathTraceRecord (PTRecord) COMPONENT AtmIf Vcc RerouteInfo (RerInfo)
Dyn. Subcomp.	COMPONENT AtmIf Vcc DestinationPvc (Dst)
Common Verbs	Help List Display Add DELete

VERB TRACE AtmIf Vcc

Impact	Service
Description	*TRACE AtmIf/n Vcc/vpi.vci* *TRACE -s -v -a -e AtmIf/n Vcc/vpi.vci* *TRACE -p AtmIf/n Vcc/vpi.vci* This command traces the path of an intra-network segment of a connection. It displays the names of interface and connection components along this segment of a connection. The Trace response for a *Vcc* does not show any hops of a VCC which are conveyed on a path connection (VPC). In this case the Trace command only shows the VCC hop points. Note however, that if the connection traverses a *Vcc* which resides beneath a *Vpt*, the *Vpt/vpi Vcc/vci* hierarchy is displayed in the trace results. The option for the OAM trace is as follows: *-p*: Selects the Nortel Networks proprietary OAM Connection Management Trace instead of the proprietary OAM Legacy Loopback Trace. If no options are provided, the default configuration uses the Legacy Loopback

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Trace.

The options for the signaling trace are as follows:

-s: Selects the PNNI signaling call trace instead of the Nortel Networks proprietary OAM-based trace. Option *-s* must be present if any one of options *-v, -a,* and *-e* are present, otherwise it defaults to the OAM-based trace.

-v: Request that the VPI.VCI values be collected along the trace. This option is only valid when the *-s* option is present.

-a: Request that the call reference/end point reference values be collected along the trace. This option is only valid when the *-s* option is present.

-e: Used on point-to-multipoint connections to specify the end point reference value indicating which party to trace. If no *-e* option is used for a point-to-multipoint connection, the default traces the path with the endpoint reference 0, which is the first party. This option is only valid when the *-s* option is present.

Only one connection trace is supported at a time. An error message is returned if a response from the network is not received within 30 seconds.

If the verb is issued with the *-s* option for the *vcc/vpi.vci* values that are not active or were not created by signaling (for example, control channels), the command is refused.

VERB CLEAR **Atmlf Vcc**

Impact	Service
Description	*CLEAR AtmIf/n Vcc/vpi.vci* This command is used to clear a switched connection.

GROUP **Atmlf Vcc** **OsiState (State)**

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

ATTRIBUTE **Atmlf Vcc** **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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

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

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

Mib — AtmCore

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

Default — unlocked

ATTRIBUTE Atmlf Vcc operationalState (osiOper)

Access — Read only

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

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

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

Mib — AtmCore

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Atmlf Vcc usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — AtmCore

Values
idle
active (activ)
busy

Default — idle

GROUP Atmlf Vcc Operational (Oper)

Properties — Operational

Description — This group contains operational information for a *Vcc, Vpc,* or *Vpt* component.

Mib — AtmCore

ATTRIBUTE Atmlf Vcc connectionPointType (cpt)

Access — Read only

Description — This attribute reflects the role of the connection component at this interface.

A value of ***connectionEndPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are processed by the connection component.

A value of ***segmentEndPoint*** indicates that user cells and end-to-end OAM cells are relayed by the connection component, while segment OAM cells are processed by the connection component.

A value of ***connectingPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are relayed by the connection component.

A value of ***unknown*** indicates that the connection component is inactive.

Mib — AtmCore

Values
connectionEndPoint
segmentEndPoint
connectingPoint
unknown

Default — No default

GROUP Atmlf Vcc ConnectionInfo (ConnInfo)

Properties — Operational

Description — This group contains operational connection characteristics information for a *Vcc* component.

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Mib	AtmCore

ATTRIBUTE Atmlf Vcc distributionType (distrbt)

Access	Read only
Description	This attribute indicates the way data is distributed in the connection. A value of ***pointToPoint*** indicates this connection point is part of a point-to-point connection. A value of ***pointToMultipoint*** indicates this connection point is part of a point-to-multipoint connection.
Mib	AtmCore
Values	pointToPoint pointToMultipoint
Default	pointToPoint

ATTRIBUTE Atmlf Vcc numLeaves (nlvs)

Access	Read only
Description	This attribute indicates the number of destination leaves of the connection. If the *distributionType* is ***pointToPoint*** the value of this attribute is 0.
Mib	AtmCore
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE Atmlf Vcc callDirection (cdir)

Access	Read only
Description	This attribute indicates the direction of the call setup request for an SVC. A value of ***fromLink*** means that the call setup originated from the link. A value of ***toLink*** means that the call setup was directed to the link. For PVC connections, the value of this attribute is ***notApplicable.*** For SPVC connections, the value of this attribute is ***notApplicable*** for *Vccs* with the *SourcePVC* and *DestinationPVC* subcomponents. For Signaling channels, the value of this attribute is ***notApplicable***.
Mib	AtmCore
Values	fromLink toLink notApplicable

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Default	notApplicable

GROUP Atmlf Vcc Status

Properties	Operational
Description	This group contains operational status information for a *Vcc, Vpc* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc operStatus (opStat)

Access	Read only
Description	This attribute indicates the present operational status of the *Vcc, Vpc* or *Vpt* component. Its value is dependent upon the current state of the *segLinkSideLoopbackState* and *endToEndLoopbackState* attributes. The value is ***end2endUp*** when the *endToEndLoopbackState* is ***good*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***end2endDown*** when the *endToEndLoopbackState* is ***bad*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***unknown*** and the *segLinkSideLoopbackState* is ***good***. The value is ***localDown*** when *segLinkSideLoopbackState* is ***bad***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***notApplicable*** and the *segLinkSideLoopbackState* is ***good***. The value is ***unknown*** when the *endToEndLoopbackState* is either ***unknown*** or ***notApplicable*** and the *segLinkSideLoopbackState* is ***unknown***.
Mib	AtmCore
Values	unknown end2endUp end2endDown localUpEnd2endUnknown localDown
Default	No default

ATTRIBUTE Atmlf Vcc localFailureCause

Access	Read only

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Description	This attribute indicates the failure cause of the *Vcc, Vpc* or *Vpt* component. A value of ***noFailure*** indicates that there is currently no bandwidth related failure for this connection. A value of ***portDown*** indicates that the interface corresponding to the parent *AtmIf* is down. A value of ***localBwLoss*** indicates that the *AtmIf* has lost some, but not all bandwidth, and as a result, this connection has been released. A value of ***notAdmitted*** indicates that this connection has failed to be admitted by the Connection Admission Control (CAC) algorithm. A value of ***appNotRegistered*** indicates that there is no application registered to use this connection. This may be the case, for example when there is a *Vcc Test* application, but the test has not been started. Check the status of the application to determine why it is not functional. A value of ***disabledByApp*** indicates that the application using this connection has requested that the connection be disabled. An example is a connection used by a trunk application where the trunk has timed out on an attempt to stage. Check the application to determine why it is not fully functional. A value of ***bwReduced*** indicates that this connection is operating in a reduced bandwidth state. It is a bandwidth elastic connection which currently has been allocated less than the requested (equivalent) bandwidth. A value of ***vpDown*** indicates that this connection has been notified of a fault detected at the associated VP-layer. A value of ***vpDown*** is applicable for *Vpt Vcc*s only.
Mib	AtmCore
Values	noFailure localBwLoss portDown notAdmitted appNotRegistered disabledByApp bwReduced vpDown
Default	No default

ATTRIBUTE AtmIf Vcc troubled

Access	Read only
Description	This attribute indicates whether or not the connection is in a troubled state. Connections become troubled because of OAM failures; when one of the attributes *segLinkSideLoopbackState*, *segSwitchSideLoopbackState*,

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endToEndLoopbackState, *aisState* (when receiving AIS cells only) or *rdiState* go bad, this attribute is set to ***yes***; otherwise it is set to ***no***.

Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE Atmlf Vcc **segLinkSideLoopbackState (segLkLbkState)**

Access	Read only
Description	This attribute contains the current state of the link-side segment loopback for this connection. Link-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the link (port). The value of this attribute is dependent upon the current setting of the *segLinkSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the segment link side loopback is working. The value is ***bad*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the link side segment loopback is not working. The value is ***unknown*** when the *segLinkSideLoopback* is ***off***. The value is ***unknown*** when the value of the *segLinkSideLoopback* attribute is ***on***, the *connectionPointType* attribute is set to ***segmentEndPoint*** or ***connectionEndPoint***, and the segment link side loopback has not yet been determined. The state of this attribute determines, in part, the value of the *operStatus* attribute.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

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ATTRIBUTE Atmlf Vcc **segSwitchSideLoopbackState (segSwLbkState)**

Access	Read only
Description	This attribute contains the current state of the switch-side segment loopback for this connection. Switch-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the bus. The value of this attribute is dependent upon the current setting of the *segSwitchSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is only applicable when the *connectionPointType* is a ***segmentEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or ***connectionEndPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback is working. The value is ***bad*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the switch side segment loopback is not working. The value is ***unknown*** when the *segSwitchSideLoopback* is ***off***. The value is ***unknown*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback has not been determined.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE Atmlf Vcc **endToEndLoopbackState (eeLbkState)**

Access	Read only
Description	This attribute contains the current state of the end-to-end loopback for this connection. Its value is dependent upon the current setting of the *endToEndLoopback* provisionable attribute and the connection point type as specified by the *connectionPointType* attribute.

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The value is only applicable when the *connectionPointType* is a ***connectionEndPoint***.

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or s***egmentEndPoint***.

The value is ***notApplicable*** when the *distributionType* is a ***pointToMultipoint***.

The value is ***good*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is working.

The value is ***bad*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is not working.

The value is ***unknown*** when the *endToEndLoopback* is ***off***.

The value is ***unknown*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback status has not been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute.

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE Atmlf Vcc rxOamCellCongestionState (rxOamCongState)

Access	Read only
Description	This attribute contains the current state of the receive side OAM cell congestion for this connection. Its value reflects whether the rate of received OAM cells for this connection is below a specified threshold. The connection maintains a count of the number of OAM cells which are terminated per second. Once that count exceeds the specified threshold, extraction of all OAM cells for this connection is disabled for a period of one minute. This is a congestion management mechanism to prevent the processor from being overloaded with handling OAM cells for a particular connection. This mechanism ensures that tasks, such as trunks obtain enough processor cycles to remain in service, and are not adversely affected by excessive rate of OAM cells on a particular connection. The value is ***good*** when the rate of received OAM cells is less than the allowed threshold.

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The value is ***bad*** when the arrival rate has exceeded the allowed threshold. It remains ***bad*** for one minute, before returning to ***good*** again. During this timeout, extraction of all OAM cells is disabled for this connection. As a result, other loopback failure conditions may occur.

The value is ***unknown*** when the application has not yet begun to use this connection. An example is the *Test* component before a test has been started.

Each type of OAM cell is counted separately. The threshold for AIS cells is three cells per second. If more than three AIS cells are received within a one second interval, this attribute is set to ***bad***. The threshold for RDI cells and each loopback type is also three, but the threshold for trace cells is 250 per second.

The state of this attribute has no direct effect on the value of the *operStatus* attribute or on the number of troubled connections.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

Default: No default

ATTRIBUTE Atmlf Vcc aisState

Access: Read only

Description: This attribute contains the current state of the Alarm Indication Signal for this connection.

A value of ***good*** indicates that the connection's application is active and no alarm has occurred.

A value of ***bad*** indicates that the connection's application is active and an alarm has occurred.

A value of ***unknown*** indicates that the connection's application is inactive.

A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

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Default	No default

ATTRIBUTE Atmlf Vcc rdiState

Access	Read only
Description	This attribute indicates the current state of the Remote Defect Indication for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

GROUP Atmlf Vcc Statistics (Stats)

Properties	Operational
Description	This group contains traffic statistics for a *Vcc*, *Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc txCell

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection. The counter wraps to zero if it exceeds its maximum value of (2**64)-1. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this attribute does not include locally generated AIS cells. Specifically AIS cells generated on the destination side of a SPVC or SPVP will not be included in this attribute, nor will AIS cells generated on the link side of a PVC or PVP.
Mib	AtmCore
Values	Long Integer

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Default	No default

ATTRIBUTE Atmlf Vcc txCellClp (txClp)

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection with the CLP=1. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc txCellDiscard (txcd)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection that have been discarded. Discarded cells are not counted in the *txCell* attribute. Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscard* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc txCellDiscardClp (txcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection with CLP=1 that have been discarded.

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For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count is included in the *txCellDiscard* attribute. Discarded cells are not counted in the *txCellClp* attribute.

Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscardClp* values for all connections associated with the *Vpt*.

When both ingress and egress of a port is down, txcells are silently discarded.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc txFrameDiscard (txfd)

Access	Read only
Description	This attribute counts the number of frames received from the backplane on this connection that have been discarded.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtmcards***, this attribute does not count frames discarded due to congestion at the main traffic management device toward the link.

This count is independent of the *txCell* or *txCellDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is

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applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscard* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscard* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc txFrameDiscardClp (txfdClp)

Access	Read only
Description	This attribute counts the number of discarded frames on this connection that were received from the backplane and composed of one or more CLP=1 cells. Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtmcards***, this attribute does not count frames discarded due to congestion at the main traffic management device toward the link. This count is included in the *txFrameDiscard* attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscardClp* values for all connections associated with the *Vpt*. Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscardClp* attribute.

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The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc rxCell

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells that have been discarded by the interface due to non-conformance with UPC. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down. For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when the PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down and is increased when either the SPVC or SPVP connection is down. For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted. For ***16pOC3PosAtm*** card, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

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ATTRIBUTE Atmlf Vcc rxCellClp (rxClp)

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection with the CLP=1. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc rxCellDiscard (rxcd)

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection that have been discarded. This count is included in the *rxCell* attribute. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells discarded due to non-conformance with UPC. For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscard* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscard* attribute. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic

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is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down, regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or only F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc rxCellDiscardClp (rxcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection with CLP=1 that have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is

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not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscardClp* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc rxFrameDiscard (rxfd)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have been discarded. This count is independent of the *rxCellDiscard* attribute. This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute does not count frames discarded due to UPC. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscard* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

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ATTRIBUTE Atmlf Vcc rxFrameDiscardClp (rxfdClp)

Access	Read only
Description	This attribute counts the number of discarded frames on this connection that were received from the interface and composed of one or more CLP1 cells. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscard* attribute. This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute does not count frames discarded due to UPC. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscardClp* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc rxUpcViolationOnEnforcer1 (rxEnforcer1)

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored on the connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed. When the value of the *rxTrafficDescType* attribute for this connection is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections) Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1. When the value of the *rxTrafficDescType* attribute for this connection is 9

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(for ABR connections), Enforcer 1 performs the Dynamic Generic Cell Rate Algorithm (DGCRA) used for the Available Bit Rate (ABR) service category.

If UPC is enforced all non-conforming cells are discarded by this enforcer. These discarded cells are included in the *rxCellDiscard* attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer1* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc rxUpcViolationOnEnforcer2 (rxEnforcer2)

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored on the connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed. This attribute is only applicable if the value of the *rxTrafficDescType* attribute for this connection is 4, 5, 6, 7, or 8. When the value of the *rxTrafficDescType* attribute is 4, or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0. When the value of the *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1. When the value of the *rxTrafficDescType* attribute is 7, or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0. If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* values of 4, 6, and 7. It tags non-conforming cells for *rxTrafficDescType* values of 5, and 8. Discarded cells are counted in the rxCellDiscard attribute. For basic *Vpt*s, this attribute provides an aggregated total of all

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rxUpcViolationOnEnforcer2 values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc rxAal5FrameError (rxfer)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have AAL5 length errors or AAL5 CRC errors. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed. AAL5 length or CRC errors typically occur because of cell discards due to congestion, UPC, or due to corruption of data between the AAL5 segmentation and reassembly end points. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameError* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc rxAal5FrameAbort (rxfa)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have the AAL5 length field set to zero. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

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An AAL5 length of zero is an indication by the far end segmentation point, to this reassembly point, that the frame is to be discarded without reassembly. This mechanism is typically used by a segmentation point if it detects an error in a frame after some of the cells belonging to that frame have already been transmitted.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameAbort* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

GROUP Atmlf Vcc Performance (Perf)

Properties	Operational
Description	This group contains operational attributes which keep performance statistics about the behavior of the connection.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc lastMinimumCtd (lastminctd)

Access	Read only
Description	This attribute indicates the minimum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working.

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	The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vcc **lastMaximumCtd (lastmaxctd)**

Access	Read only
Description	This attribute indicates the maximum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vcc **lastAverageCtd (lastavectd)**

Access	Read only
Description	This attribute indicates the average of all calculated cell transfer delay values for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the

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	measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf lisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE **AtmIf Vcc** **currentCtd (currctd)**

Access	Read only
Description	This attribute indicates the most recent cell transfer delay value calculated for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

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ATTRIBUTE Atmlf Vcc lastCtdSampleSize (lastsamplectd)

Access	Read only
Description	This attribute indicates the number of loopback cells sampled for cell transfer delay calculations during the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval of TODA is disabled.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

COMPONENT Atmlf Vcc VirtualChannelDescriptor (Vcd)

Groups	GROUP AtmIf Vcc Vcd Loopback (Lbk) GROUP AtmIf Vcc Vcd Accounting (Acct)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci VirtualChannelDescriptor,* *AtmIf/n Vpt/vpi Vcc/vci VirtualChannelDescriptor* The *Vcd* component contains provisioning information about its parent *Vcc* component.
Mib	AtmCore
Subcomponents	COMPONENT AtmIf Vcc Vcd TrafficManagement (Tm)
Opt. Subcomp.	COMPONENT AtmIf Vcc Vcd PerformanceMonitoring (Pm)
Common Verbs	Help List Display

GROUP Atmlf Vcc Vcd Loopback (Lbk)

Properties	Provisioned
Description	This group contains the provisionable loopback attributes for a *Vcc, Vpc,* or *Vpt* component. Note that certain loopback requests may not be possible on a given connection. In such cases, the corresponding operational loopback attribute in the *Status* group of the *Vcc, Vpc,* or *Vpt* component indicates ***notApplicable*** and the requested loopback is not performed. If loopbacks are provisioned to be on, and for any reason the segment or end-to-end OAM loopback cells are not relayed, the connection component becomes troubled, and user cell traffic may be discarded. If loopbacks are provisioned to be on, all of the nodes in the segment, and external networks which are in the end-to-end connection must relay the OAM loopback cells.

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Mib	AtmCore

ATTRIBUTE Atmlf Vcc Vcd segLinkSideLoopback (segLkLbk)

Access	Read and write
Description	This attribute specifies whether link-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the link-side segment loopback insertion for the connection is based on the *segLinkSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has link-side segment loopback insertion turned on, then link-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means link-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that link-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***. Link-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *segLinkSideLoopbackState* attribute indicates ***notApplicable*** and link-side segment loopback insertion is not performed. Link-side segment loopback insertion is always possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE Atmlf Vcc Vcd segSwitchSideLoopback (segSwLbk)

Access	Read and write
Description	This attribute specifies whether switch-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the switch-side segment loopback insertion for the connection is based on the *segSwitchSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has switch-side segment loopback insertion turned on, then switch-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means switch-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

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Note that switch-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint*** or ***connectionEndPoint***. Switch-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint*** In such cases, the operational *segSwitchSideLoopbackState* attribute indicates ***notApplicable*** and switch-side segment loopback insertion is not performed.

Switch-side segment loopback is never possible on a *Vpt*.

Mib — AtmCore

Values
on
off
sameAsInterface

Default — sameAsInterface

ATTRIBUTE Atmlf Vcc Vcd **endToEndLoopback (eeLbk)**

Access — Read and write

Description — This attribute specifies whether end-to-end loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the end-to-end loopback insertion for the connection is based on the *endToEndLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has end-to-end loopback insertion turned on, then end-to-end loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means end-to-end loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that end-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *endToEndLoopbackState* attribute indicates ***notApplicable*** and end-to-end loopback insertion is not performed.

End-to-end loopback insertion is always possible on a *Vpt*.

Mib — AtmCore

Values
on
off
sameAsInterface

Default — sameAsInterface

ATTRIBUTE Atmlf Vcc Vcd **mCastConnectionType (connType)**

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Access	Read and write
Criticality	Component
Description	This attribute specifies if this *Vcc* or *Vpc* is part of point-to-point or point-to-multiPoint connection. A value of ***pointToMultiPointRoot*** must be set when this *Vcc* has an *Msrc* or an *Mnrp* subcomponent, or this *Vpc* has an *Mnrp* subcomponent. A value of ***pointToMultiPointLeaf*** must be set when this *Vcc* or *Vpc* has a *Nrp* subcomponent and its *nextHop* attribute is linked to a *Mnrp* component. Otherwise a value of ***pointToPoint*** must be set.
Mib	AtmCore
Values	pointToPoint (ptp) pointToMultipointRoot (pmpRoot) pointToMultipointLeaf (pmpLeaf)
Default	pointToPoint

GROUP Atmlf Vcc Vcd **Accounting (Acct)**

Properties	Provisioned
Description	This group contains the provisionable ATM accounting attributes for a *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Vcd **correlationTag (tag)**

Access	Read and write
Description	This attribute specifies a unique identifier for each end of a PVC. It that may be used by downstream processing systems to correlate accounting records issued at different nodes in the network. The attribute can be up to 64 bytes long. If it is less than 64 bytes, it is zero filled on the right to create a 64 byte value. The resulting value is recorded in the attribute *callConnId* for this PVC's ATM accounting records. If the value is a null string then this PVC does not have any accounting records generated for it.
Mib	AtmCore
Values	String (0..64, ASCII)
Default	""

COMPONENT Atmlf Vcc Vcd **TrafficManagement (Tm)**

Groups	GROUP Atmlf Vcc Vcd Tm Provisioned (Prov)

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Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd TrafficManagement,* *AtmIf/n Vpc/vci Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci Vcd TrafficManagement* This component contains provisioned traffic management attributes of a connection. It is added automatically when a *Vcc*, *Vpc,* or *Vpt* is added in provisioning mode. It is a mandatory subcomponent of the *Vcd* or *Vpd* component.
Mib	AtmCore
Opt. Subcomp.	COMPONENT AtmIf Vcc Vcd Tm AvailableBitRate (Abr)
Common Verbs	Help List Display

GROUP Atmlf Vcc Vcd Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains traffic related provisionable attributes for the *Vcc, Vpc,* and *Vpt* components. Changing any of the attributes in this group causes a service interruption on the *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Vcd Tm txTrafficDescType (txTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	1

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ATTRIBUTE Atmlf Vcc Vcd Tm **fwdQosClass (fwdQos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmCore
Values	0 1 2 3 4
Default	0

ATTRIBUTE Atmlf Vcc Vcd Tm **txQueueLimit (txQlim)**

Access	Read and write
Criticality	Component
Description	This attribute specifies an override to the default transmit queue limit for this connection. A value of ***sameAsCa*** means that the default common or per-VC transmit queue limit, as defined by the CA service category, is used for this connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***sameAsCa*** must be specified. A value from 5 to 512,000 means that the connection transmit queue limit differs from the default common or per-VC transmit queue limit, as defined by the CA service category. A value other than ***sameAsCa*** is ignored for connections where common queuing is specified for the service category.

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For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the per-VC utilization limit of the service category common queue.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from 5 to 512000 inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

On all other cards, the valid range for this attribute is from 5 to 63488 inclusive.

The actual transmit queue limit for a connection is visible in the *Vcc Tm*, *Vpc Tm* or *Vpt txQueueThresholds* attribute.

This attribute is not applicable for basic *Vpt*s.

Mib	AtmCore
Values	Decimal (5..1011840) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE **Atmlf Vcc Vcd Tm** **holdingPriority (hpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. The default holding priority for a provisioned connection is higher then default holding priorities for dynamic (SVC) connections. The value of this attribute may be overridden by certain applications, for example *Vcc Test*, which use this connection. This attribute is not applicable for *Vpt Vcc*s.
Mib	AtmCore
Values	0 1 2

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	3 4
Default	2

ATTRIBUTE Atmlf Vcc Vcd Tm **rxTrafficDescType (rxTdt)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute. The value ***sameAsTx*** means the *rxTrafficDescType* as well as the *rxTrafficDescParm* attribute values are taken from the values of the *txTrafficDescType* and *txTrafficDescParm* attributes.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE Atmlf Vcc Vcd Tm **bwdQosClass (bwdQos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance

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requirements (Connectionless Data Transfer).

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

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

Mib	AtmCore
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE Atmlf Vcc Vcd Tm atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The value ***derivedFromBBC*** may only be used if the *Src* or *Dst* component is provisioned under this connection. Otherwise a specific ATM service category must be specified. A value of ***derivedFromBBC*** means the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. A value other than ***derivedFromBBC*** means the value of this attribute is used to override the provisioned BBC Information Element parameters. In this case, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. The ***rtVariableBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are

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delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real-time VBR service may support statistical multiplexing of real-time sources.

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

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

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

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) availableBitRate (abr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE **AtmIf Vcc Vcd Tm** **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. This attribute is ignored if the *atmServiceCategory* is ***availableBitRate***. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is ignored. A value of ***sameAsCa*** means traffic shaping for the connection is based

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on the value of the *trafficShaping* attribute of the connection's service category component under the *CA.* If the service category has *trafficShaping* set to ***enabled*** or ***inverseUpc***, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm, Vpc Tm,* or *Vpt Tm* components.

A value of ***disabled*** means traffic shaping for this connection is disabled regardless of the provisioning of the connection's service category component.

Mib — AtmCore

Values — disabled
sameAsCa

Default — sameAsCa

ATTRIBUTE Atmlf Vcc Vcd Tm unshapedTransmitQueueing (unshap)

Access — Read and write

Criticality — Component

Description — This attribute specifies the transmit queuing method for this connection if it is unshaped. The two possible methods are per-VC queuing and common queuing. This attribute does not apply if the connection is shaped.

A value of ***sameAsCa*** means the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *CA*.

A value of ***common*** means transmit traffic on this unshaped connection is destined for the common queue.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm***, and ***4pMRPosAtm*** cards, this attribute must have the value ***sameAsCa***.

This attribute is ignored in the following situations:
- if the connection has *trafficShaping* ***enabled*** or ***inverseUpc***, or
- if the *atmServiceCategory* is ***availableBitRate***, or
- if the *atmServiceCategory* is ***constantBitRate***, or
- for basic *Vpt*s and standard *Vpt Vcc*s.

Mib — AtmCore

Values — common
sameAsCa

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Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm **weight**

Access	Read and write
Criticality	Component
Description	This attribute specifies an override for the weight of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, and basic *Vpt*s. A value of ***sameAsCa*** means the weight is determined by the *weightPolicy* attribute under the *CA* service category component for all but standard *Vpt Vcc*s. For standard *Vpt Vcc*s, the weight is determined by the *Vcc*'s service category, when the value is set to ***sameAsCa***. A value from 1 to 4095 means that value is used for the fairness weight of this connection relative to other connections. For all but standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the *Vpt*. A value of ***upToQueueLimit*** means the fairness weight is limited only by the *txQueueLimit*. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value ***upToQueueLimit*** is not permitted.
Mib	AtmCore
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm **forceTagging (tagging)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR

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service category.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, and for *Vpt*s, this attribute is not applicable and is ignored.

A value of ***sameAsCa*** means the force tagging functionality is determined by the *forceTagging* attribute under the *CA* service category component.

A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection.

A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. In this case, cells which are tagged are counted in the *txCellClp* attribute.

Mib	AtmCore
Values	sameAsCa enabled disabled
Default	sameAsCa

ATTRIBUTE **Atmlf Vcc Vcd Tm** **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enables usage parameter control (UPC) when receiving traffic from the ATM interface. The value ***sameAsCa*** means UPC for the connection is based on the value of the *usageParameterControl* attribute of the service category component under the *AtmIf CA.* If the service category has UPC ***enforced*** or ***monitored***, then UPC is enabled on the connection. The value ***disabled*** means UPC for this connection is disabled regardless of the provisioning of the service category. The value ***enforced*** means UPC for this connection is enforced regardless of the provisioning of the service category. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. The value ***monitored*** means UPC for this connection is monitored regardless of the provisioning of the service category. When UPC is monitored, instead of the non-conforming cells being tagged or discarded,

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they are merely counted in the UPC violations counts and passed on unchanged.

Note that setting UPC to ***enforced*** or ***monitored*** may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc, Vpc,* and *Vpt* components.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported.

For ***1pOC48ChSmIrAtm*** cards, the values ***enforced***, and ***monitored***, are not supported.

Mib	AtmCore
Values	enforced disabled sameAsCa monitored
Default	sameAsCa

ATTRIBUTE **Atmlf Vcc Vcd Tm** **bearerClassBbc (bcBbc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the bearer capability. This attribute is only used for SPVC and SPVP connections. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

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

Class **vp** service is used to specify a transparent VP service. When the value of this attribute is vp, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except or VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP connections.

Mib: AtmCore

Values:
a
c
x
vp
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Vcc Vcd Tm **transferCapabilityBbc (tcBbc)**

Access: Read and write

Criticality: Component

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

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

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.
The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

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

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

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

Mib: AtmCore

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Vcc Vcd Tm **txWredThreshold**

Access: Read and write

Criticality: Component

Description

This attribute specifies the threshold for weighted random early detection (WRED). This threshold is calculated as a percentage of the early packet discard (EPD) threshold, which is 85% of the transmit queue length. When the value is ***25%***, WRED starts as soon as the queue is 25% of the way to the EPD threshold. When the value is ***50%***, WRED starts later, after the queue is 50% of the way to the EPD threshold. When the value is ***75%***, WRED starts only when the queue is 75% of the way to the EPD threshold.

This attribute is ignored if the value of the *txWredMode* or *txPacketWiseDiscard* attributes is ***disabled.***

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Mib: AtmCore

Values: Decimal (25; 50; 75)

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Units	%
Default	25

ATTRIBUTE Atmlf Vcc Vcd Tm **clippingBbc (cBbc)**

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

ATTRIBUTE Atmlf Vcc Vcd Tm **bestEffort**

Access	Read and write
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmCore
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vcc Vcd Tm **txPacketWiseDiscard (txpd)**

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Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s. Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD). EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the “goodput” of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell. PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted. For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the packet-wise discard functions are PPD and EPD. PPD is applicable at cell-transfer points. PPD is not applicable at frame-to-cell conversion points, and is not applicable for *Vpc*s. PPD is configured by this attribute. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. EPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Both PPD and EPD are controlled by this attribute. This attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards,

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packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

For ***16pOC3PosAtm***, ***4pMRPosAtm*** and ***1pOC48ChSmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points. This attribute may safely be set to ***enabled*** for VCCs since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE Atmlf Vcc Vcd Tm rxPacketWiseDiscard (rxpd)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s. Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD). PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The

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PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD is available at all VCC connection points where UPC may be activated. PPD is not applicable for *Vpcs*. Packet-wise discards should only be enabled for connections carrying AAL5 segmentation traffic. Setting the value to ***enabled*** for any other traffic type may result in traffic being discarded. PPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, this attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***1pOC48ChSmIrAtm*** cards, this attribute may safely be set to ***enabled*** for VCCs, since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. A value of ***enabled*** for the *rxPacketWiseDiscard* attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in enabling packet-wise discard functions on these cards. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup.

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The receive packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm rxPacketWiseDiscard* operational attribute.

Mib: AtmCore

Values:
disabled
enabled

Default: disabled

ATTRIBUTE Atmlf Vcc Vcd Tm txWredMode

Access: Read and write

Criticality: Component

Description: This attribute specifies the activation of weighted random early detection (WRED) functionality. WRED is considered a packet-wise discard function and as such applies only to AAL5 frame traffic.

WRED is applied in the transmit direction for this connection. WRED function should be enabled only for connections which are transferring TCP/IP traffic. WRED acts to prevent synchronization of multiple TCP/IP sources by randomly discarding a small percentage of frames when transmit queue congestion reaches the designated level. WRED may also be used to differentiate service on VCC's by preferentially discarding one VCC before another. Discards start at 0% of cells, when the queue is part-way to the Early Packet Discard (EPD) threshold, and rise to 100% of cells discarded at the EPD threshold. WRED discards all the cells in a frame.

A value of ***enabled*** means WRED is enabled for all applications linked to the given *Vcc*.

A value of ***perFlow*** means each TCP application has individual control over whether to enable or disable WRED.

If the value of the *txPacketWiseDiscard* attribute is ***disabled***, or if the value of this attribute is ***disabled***, WRED functionality is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, the value of this attribute must be ***disabled***.

If WRED is active, it is visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

This attribute is not applicable for *Vpt*s or *Vpt Vcc*s.

Mib: AtmCore

Values:
disabled
enabled
perFlow

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Default	disabled

ATTRIBUTE Atmlf Vcc Vcd Tm **abrConnectionType (abrType)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of ABR behavior which is to be enforced at this connection. This attribute is only applicable if the value of the *atmServiceCategory* attribute is ***availableBitRate***. If the value of the *atmServicecategory* attribute is not ***availableBitRate***, this attribute is ignored. The value ***sameAsCa*** is used to request the default behavior as specified in the *CA Abr* component for this *Vcc*. Otherwise, this attribute overrides the default behavior. The value ***virtualSourceDest*** is used to request that this connection point function as a virtual source/virtual destination. The value ***sourceDest*** requires that this connection point function as a S/D for RM cells. S/D mode is automatically invoked at this connection point either if this is a connection end point, or if the next hop connection point is configured as ***nonAbrInterworking***. The value ***nonAbrInterworking*** is used to request that this connection point function as an interworking between ABR and non-ABR service categories. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***. The value ***abrSwitch*** is used to request ABR switch behavior for this connection point. The ABR switch behavior is first, to conform to ***virtualSourceDest*** or ***nonAbrInterworking*** setting on the next hop, and otherwise to implement ABR ER switch behavior. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the only allowable values are ***sameAsCa***, ***nonAbrInterworking*** or ***abrSwitch***. If ***abrSwitch*** is selected, EFCI marking behavior is implemented. For ***1pOC12SmLrAtm*** cards, the only allowable values are ***sameAsCa*** or ***abrSwitch.*** If ***abrSwitch*** is selected, EFCI marking behavior is implemented. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the only allowable value is ***sameAsCa***. The actual ABR functionality which is in effect is visible in the *Vcc/Vpc/Vpt Tm abrConnectionType* operational attribute.
Mib	AtmCore

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Values	abrSwitch virtualSourceDest sourceDest nonAbrInterworking sameAsCa
Default	sameAsCa

ATTRIBUTE **AtmIf Vcc Vcd Tm** **txTrafficDescParm (txTdp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR, MCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *txTrafficDescType* is 1 or 2, all of the parameters must be set to zero. When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP

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

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

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

When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 4 and parameter 5 represent are not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may be optionally zero.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate. When the *atmServiceCategory* is ***availableBitRate*** (ABR), the shaping rate is dynamically chosen, based on the ABR flow control mechanism, as a value between the MCR and the PCR or the requested shaping rate if applicable.

For *txTrafficDescType* 3, 4 and 5, the transmit traffic is shaped at the next available shaping rate less than the PCR.

For *txTrafficDescType* 6, 7 and 8 if linear traffic shaping is selected, the transmit traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

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For *txTrafficDescType* 3 ,4,5,6,7 and 8, with ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, parameter 4 must be less than or equal to 643,000.

For *txTrafficDescType* 6, 7 and 8 if inverse-UPC traffic shaping is selected, the transmit traffic is shaped at a variable rate which conforms to the PCR, SCR and MBS of the connection traffic descriptor.

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

ATTRIBUTE **Atmlf Vcc Vcd Tm** **rxTrafficDescParm (rxTdp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. If the value of the *rxTrafficDescType* attribute is ***sameAsTx***, the values provisioned in this attribute are ignored. The traffic parameters for the receive direction are taken from the *txTrafficDescParm* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), and Minimum Cell Rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for usage parameter control (UPC). When *rxTrafficDescType* is 1 or 2, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to

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0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

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

If the value of CDVT either in parameter 2 or in parameter 4 is zero, the CDVT is taken from the *CA* defaults for the particular *atmServiceCategory* of this connection.

Parameter 5 of the *rxTrafficDescParm* is always unused.

When *rxTrafficDescriptorType* is 3 through 8, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware. The *check prov* command detects such cases and generates an error message. If this happens, adjust the parameters until they fall within the supported limits.
To calculate the limits, use the following formulae:
I1 = 1,000,000,000 / PCR
L1 = CDVT * 1000
I2 = 1,000,000,000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is 6 through 8.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, I1 and I2 must be less than or equal to 335,523,840. I1 + L1 must be less than or equal to 1,342,156,800. I2 + L2 must be less than or equal to 1,342,156,800. If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41,940,480 or
I2 > 41,940,480 or
I1 + L1 > 167,769,600 or

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	I2 + L2 > 167,769,600 then both I1 and I2 must be greater than 20,480. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, L2 must be less than or equal to 2,674,011,406. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, L2 must be less than or equal to 17,179,869,180.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **AtmIf Vcc Vcd Tm** **fwdQosParameters (fqp)**

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

ATTRIBUTE **AtmIf Vcc Vcd Tm** **bwdQosParameters (bqp)**

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Access	Read and write
Criticality	Component
Description	This attribute is a vector of two elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The *cdv* specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR, the CDV is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv clr
Default	(cdv: 16777215, clr: 255)

COMPONENT Atmlf Vcc Vcd Tm AvailableBitRate (Abr)

Groups	GROUP AtmIf Vcc Vcd Tm Abr Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd Tm AvailableBitRate,* *AtmIf/n Vpc/vci Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Vcd Tm AvailableBitRate* This component contains provisioned ABR-related attributes of a connection. It is an optional subcomponent of the *Vcd Tm* and *Vpd Tm* component. It is used to override DGCRA-related defaults in the *CA Abr* component. It contains the specific configuration for the ABR connection at this connection point. If this is the source of an SPVC connection, this component also contains the ABR parameters required for the SPVC call request.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vcc Vcd Tm Abr Provisioned (Prov)

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Properties	Provisioned
Description	This group contains provisioned attributes for the ABR ATM connections configured on an ATM interface.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **initialCellRate (icr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. The value ***sameAsCa*** means the initial cell rate is determined by the *AtmIf CA Abr*/0 *icr* attribute. The value ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection. The value ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection. If the value is less than the MCR of the connection, then the MCR is used as the ICR. If the value is more than PCR of the connection, then PCR is used as the ICR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16777215) sameAsCa useMcr usePcr
Units	cell/s
Default	sameAsCa

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **transientBufferExposure (tbe)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the source to send during start-up periods, before the first Resource Management (RM) cell returns. TBE divided by *fixedRoundTripTime* determines an upper bound for the

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operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period.

TBE divided by *maxCellsPerRmCell* specifies the operational value of *forwardRmCellLimit*, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* is set to ***erSwitch***.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	16777215

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **fixedRoundTripTime (frtt)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. The value of *transientBufferExposure* divided by the value of FRTT (in seconds) determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	5000000

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **rateDecreaseFactor (rdf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may

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decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib: AtmCore

Values: Decimal (0..15)
sameAsCa

Default: sameAsCa

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **rateIncreaseFactor (rif)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64.

RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib: AtmCore

Values: Decimal (0..15)
sameAsCa

Default: sameAsCa

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **maxCellPerRmCell (nrm)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell.

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A value of 2 is not recommended although it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly transmitted, and all data traffic is queued up indefinitely.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE **Atmlf Vcc Vcd Tm Abr** **maxTimeBetweenRmCells (trm)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the TRM parameter for this connection. TRM provides an lower bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least two other cells have been sent, then the next cell to be transmitted would be a forward RM cell. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***. The provisioned value of 781 is signaled as TRM = 0, in the ABR Additional Parameters Information Element. 1563 is signaled as TRM = 1. 3125 is signaled as TRM = 2. 6250 is signaled as TRM = 3. 12500 is signaled as TRM = 4 25000 is signaled as TRM = 5. 50000 is signaled as TRM = 6. 100000 is signaled as TRM = 7.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE **Atmlf Vcc Vcd Tm Abr** **cutoffDecreaseFactor (cdf)**

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Access	Read and write
Criticality	Component
Description	This attribute specifies the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is indicated by the *forwardRmCellLimit* attribute. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64) sameAsCa
Default	sameAsCa

ATTRIBUTE **AtmIf Vcc Vcd Tm Abr** **acrDecreaseTimeFactor (adtf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the maximum time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..1023) sameAsCa
Units	centiseconds

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Default	sameAsCa

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **dgcraMaximumDelay (dgcraMaxDelay)**

Access	Read and write
Criticality	Component
Description	This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward direction). This upper bound may be approximated as the sum of the round trip fixed and propagation delays and the maximum queuing delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When there is a reduction in the Allowed Cell Rate (ACR), the policer waits for a correspondingly longer period of time before it enforces at the new cell rate. The value of this attribute must not be less than the *dgcraMinimumDelay* attribute.
Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **dgcraMinimumDelay (dgcraMinDelay)**

Access	Read and write
Criticality	Component
Description	This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward connection). This lower bound may be approximated as the sum of the round trip fixed and propagation delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A smaller value for this attribute implies a more lenient policer. When there is a increase in the Allowed Cell Rate (ACR), the policer waits for a correspondingly shorter period of time before it enforces at the new cell rate.

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Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **farEndAcrDecreaseTimeFactor (feAdtf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) of the far end ABR source. The value specified should be the same as the ADTF parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the value of this attribute, the policer begins to limit enforce the incoming traffic at the initial cell rate (ICR) of the far end, as specified by the *farEndInitialCellRate* attribute.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	50

ATTRIBUTE Atmlf Vcc Vcd Tm Abr **farEndInitialCellRate (feIcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) of the far end ABR source. The value specified should be the same as the ICR parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the *farEndAcrDecreaseTimeFactor* attribute, the policer begins to enforce the incoming traffic at the value of this attribute. If this attribute is specified less than the MCR of the connection, then the MCR is used as the *feIcr*. If this attribute is more than the PCR of the connection, then PCR is used as the *feIcr*.

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Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	0

COMPONENT AtmIf Vcc Vcd PerformanceMonitoring (Pm)

Groups	GROUP AtmIf Vcc Vcd Pm Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/x.y Vcd PerformanceMonitoring* *AtmIf/n Vpt/x vcc/y Vcd PerformanceMonitoring* *AtmIf/n Vpc/x Vpd PerformanceMonitoring* This component represents the Performance Monitoring (Pm) function on a provisioned connection. No Performance Monitoring is done unless this component is present. The attribute values override corresponding values in the AtmIf Pm component. There can be a maximum of 255 Pms on one LP.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vcc Vcd Pm Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which specify Performance Monitoring (PM) measurements, namely, Availability Ratio (AR) and Cell Loss Ratio (CLR), and control modes for the connection. The values specified in this group override those specified by the *AtmIf Pm* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc Vcd Pm segSwitchSideMeasurement (segSwitchSide)

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the switch side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segSwitchSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no switch side PM measurements are done.

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Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

ATTRIBUTE Atmlf Vcc Vcd Pm **segLinkSideMeasurement (segLinkSide)**

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the link side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segLinkSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no link side PM measurements are done.
Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

ATTRIBUTE Atmlf Vcc Vcd Pm **controlMode (mode)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the control mode of Performance Monitoring (PM) measurements for the connection. A value of ***autoStart*** means that PM activation procedures will start when the provisioned data is activated. A value of ***onDemand*** means that PM activation procedures will start when the operator issues the *Start* command. The PM measurements in this mode will continue until the operator issues the *Stop* command. A value of ***sameAsInterface*** means that the behavior will be as specified by the *controlMode* attribute of the *AtmIf Pm* component.
Mib	AtmCore
Values	autoStart (auto) onDemand (onDemand) sameAsInterface (sameAsIf)
Default	sameAsInterface

ATTRIBUTE Atmlf Vcc Vcd Pm **switchSideClrType (clrType)**

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Access	Read and write
Description	This attribute specifies how the Cell Loss Ratio (CLR) Performance Monitoring (PM) is measured on a switch-side configuration for the connection. A value of ***complete*** indicates that egress discards at the segment end points are included in the CLR measurement as per ITU standards. A value of ***partial*** indicates that egress discards do not contribute to the CLR measurement. A value of ***sameAsInterface*** means that the behavior is as specified by the *switchSideClrType* attribute of the *AtmIf Pm* component.
Mib	AtmCore
Values	complete partial sameAsInterface (sameAsIf)
Default	sameAsInterface

COMPONENT Atmlf Vcc Loop (Loop)

Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Loop* The *Loop* component configures an ATM connection so that cells received from the ATM interface are retransmitted back to the interface through that connection. The *Loop* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Test*).
Mib	AtmCore
Common Verbs	Help List Display Add DELete

COMPONENT Atmlf Vcc NailedUpRelayPoint (Nrp)

Groups	GROUP Atmlf Vcc Nrp Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Nrp* This component is used to establish a single hop of a nailed-up ATM Bearer Service (ABS) connection. By linking together two *Nrp*s within a module, the associated connections are configured to relay ATM cells to one another. The *Nrp* component requires exclusive use of its parent *Vcc*

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	or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, and *Loop*).
Mib	AtmBearerService
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vcc Nrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Nrp* component.
Mib	AtmBearerService

ATTRIBUTE AtmIf Vcc Nrp nextHop (nextHop)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Nrp* component with which this *Nrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp.*
Mib	AtmBearerService
Values	Link (Service, nextHop)
Default	No default

ATTRIBUTE AtmIf Vcc Nrp oamSegmentBoundary (sb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Nrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.
Mib	AtmBearerService
Values	no yes sameAsInterface

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Default	sameAsInterface

ATTRIBUTE Atmlf Vcc Nrp **bandwidthElastic (bwElastic)**

Access	Read and write
Criticality	Component
Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Nrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid. A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority*.
Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE Atmlf Vcc Nrp **overrideHoldingPriority (ohpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3

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	4 noOverride
Default	noOverride

COMPONENT Atmlf Vcc NailedUpEndPoint (Nep)

Groups	GROUP Atmlf Vcc Nep Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Nep* The *NailedUpEndPoint* component is used to link a VCC to an application that sends and receives frames using the connection. The *Nep* component requires exclusive use of its parent *Vcc* and cannot co-exist with other ATM service components (such as *Nrp*, *Test*, and *Loop*).
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vcc Nep Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *Nep* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Nep applicationName (appName)

Access	Read only
Description	This attribute specifies the application that sends and receives frames using the VCC. This attribute is set, for example, by provisioning the *Trunk AtmAccess AtmConnection* attribute. If it is properly configured, this attribute will show a value such as “Trk/22 AtmAccess”.
Mib	AtmCore
Values	Link (Service, atmConnection)
Default	No default

COMPONENT Atmlf Vcc Test (Test)

Groups	GROUP Atmlf Vcc Test OsiState (State) GROUP Atmlf Vcc Test Setup (Setup) GROUP Atmlf Vcc Test Results (Results)
Scope	Device

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Description	*AtmIf/n Vcc/vpi.vci Test* The *Test* component allows test traffic to be sent over an ATM connection. It is used to verify the integrity of hardware carrying ATM traffic, and provides test capabilities similar to those provided by non-ATM port and line tests. The *Test* component requires exclusive use of its parent *Vcc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Loop*). An ATM connection test circulates traffic through a VCC having a *Test* component at one end and the other end configured to loop back ATM cells. The *Test* component generates test frames, transforms them into ATM cells using AAL5 segmentation, and transmits them through the VCC; the returned cells are received by the *Test* component, reassembled back into frames, and the frames are consumed. The test frames generated by the test are grouped into two independent streams. 1) The loading frame stream circulates a set of “loading frames” through the connection as rapidly as possible. The intent of this stream is to verify the operation of the connection under a controlled load. 2) The verification stream transmits a series of “verification frames” through the connection; as each frame is returned, the *Test* component verifies its contents and the next verification frame in the series is transmitted. The intent of this stream is to verify that frames are not being corrupted. The test can be configured to send frames from either or both streams. The size and content of the test frames can also be controlled.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

VERB START **AtmIf Vcc Test**

Impact	Service
Description	*START AtmIf/n Vcc/vpi.vci Test* This verb invokes an ATM connection test. It has no effect when the test is already running.

VERB STOP **AtmIf Vcc Test**

Impact	Service
Description	*STOP AtmIf/n Vcc/vpi.vci Test* This verb stops an ATM connection test. It has no effect when the test is not running.

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GROUP Atmlf Vcc Test **OsiState (State)**

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

ATTRIBUTE Atmlf Vcc Test **adminState (osiAdmin)**

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

ATTRIBUTE Atmlf Vcc Test **operationalState (osiOper)**

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

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Mib	AtmCore
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Atmlf Vcc Test usageState (osiUsage)

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

GROUP Atmlf Vcc Test Setup (Setup)

Properties	Operational
Description	This group contains attributes that govern the operation of an ATM connection test. These attributes cannot be changed while the test is running.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Test frmTypes (types)

Access	Read and write
Description	This attribute specifies the types of the test frames to be transmitted during the ATM connection test. It must contain at least one of the following: ***loading***: A set of “loading frames” is circulated over the link as rapidly as possible. This frame type should be selected when the test is intended to verify the operation of the connection under a specified load. These frames are not checked for bit errors. ***verification***: A single “verification frame” is transmitted over the link; when the frame is returned, its contents are verified and the next verification frame in the series is transmitted. This frame type should be selected when the test is intended to verify that frames are not being corrupted as they pass over the connection.

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Mib	AtmCore
Set of	loading verification
Default	(loading, verification)

ATTRIBUTE Atmlf Vcc Test **frmSize (size)**

Access	Read and write
Description	This attribute defines the size of the test frames used in an ATM connection test.
Mib	AtmCore
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Atmlf Vcc Test **frmPatternType (fpt)**

Access	Read and write
Description	This attribute specifies the bit sequence used to fill the frames used in the ATM connection test. It must contain one of the following values: ***ccitt32kBitPattern***: a pseudo-random sequence of 32 Kbit is used ***ccitt8MBitPattern***: a pseudo-random sequence of 8Mbit is used ***customizedPattern***: the pattern defined in the *customizedPattern* attribute is used
Mib	AtmCore
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Atmlf Vcc Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute specifies a 32 bit sequence to be used to fill frames when the *framePatternType* attribute is set to ***customizedPattern***. The default value gives a pattern of alternating 0 and 1 bits.
Mib	AtmCore
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Atmlf Vcc Test **duration**

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Access	Read and write
Description	This attribute specifies the maximum number of minutes that the ATM connection test is allowed to run. The maximum allowed value permits the test to be run for up to 21 days.
Mib	AtmCore
Values	Decimal (1..30240)
Units	minutes
Default	1

ATTRIBUTE Atmlf Vcc Test bandwidthElastic (bwElastic)

Access	Read and write
Description	This attribute specifies whether the connection (*VCC*) should be configured with elastic bandwidth or not. Elastic bandwidth is of importance in conjunction with IMA links, where some links fail and the resulting bandwidth is less than the requested bandwidth for all connections. In that case, some connections may be reduced in bandwidth based on the setting of the *bwElastic* attribute. If this attribute is set to ***yes***, the Test application signals to the connection that the bandwidth for this connection is elastic, and may be reduced in the case of IMA link failures. If the bandwidth is reduced, the rate of test cells which can be handled by the connection will also be reduced. If this attribute is set to ***no***, the Test application signals to the connection that the bandwidth for this connection must be maintained at the requested level. If the connection cannot maintain the full bandwidth, the connection may be released (cleared) based on the holding priority of the connection.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE Atmlf Vcc Test overrideHoldingPriority (ohpri)

Access	Read and write
Description	This attribute specifies the override holding priority which should be signaled to the *VCC* connection at the start of the test. Holding priority is of importance in conjunction with IMA links, where some links fail and the resulting bandwidth is less than the requested bandwidth for all connections. In that case, some connections may be released based on the connection's holding priority. ***Zero*** (0) is the highest holding priority, and ***four*** (4) is the lowest priority. A

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setting of ***zero*** to ***four*** overrides whatever holding priority that has been configured at the connection (*VCC*). A setting of ***noOverride*** means that the connection should use its internally configured holding priority.

Mib	AtmCore
Values	0 1 2 3 4 noOverride
Default	noOverride

GROUP Atmlf Vcc Test **Results (Results)**

Properties	Operational
Description	This group contains attributes that show the result of an ATM connection test; if no test is running, the attribute group contains the results of the most recently completed test. The attributes of the *Results* group are reset to their initial values whenever a test is started or any attribute of the *Setup* group is set.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Test **elapsedTime**

Access	Read only
Description	This attribute displays the number of minutes that the test has been running.
Mib	AtmCore
Values	Decimal (0..30240)
Units	minutes
Default	0

ATTRIBUTE Atmlf Vcc Test **timeRemaining**

Access	Read only
Description	This attribute displays the number of minutes that the test will continue to run before stopping automatically.
Mib	AtmCore
Values	Decimal (0..30240)
Units	minutes
Default	0

ATTRIBUTE Atmlf Vcc Test **causeOfTermination**

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Access	Read only
Description	This attribute displays the reason the test ended. It contains one of the following values. ***testTimeExpired***: the test ran for the specified duration ***stoppedByOperator***: a *STOP* command was issued ***neverStarted***: the test has not been started ***testRunning***: the test is currently running
Mib	AtmCore
Values	testTimeExpired stoppedByOperator neverStarted testRunning
Default	neverStarted

ATTRIBUTE Atmlf Vcc Test bytesTx

Access	Read only
Description	This attribute displays the number of bytes sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc Test bytesRx

Access	Read only
Description	This attribute displays the number of bytes received during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc Test loadingFrmTx

Access	Read only
Description	This attribute displays the number of loading frames sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc Test loadingFrmRx

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Access	Read only
Description	This attribute displays the number of loading frames received during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc Test **loadingFrmLost**

Access	Read only
Description	This attribute displays the number of loading frames that were lost during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc Test **verificationFrmTx**

Access	Read only
Description	This attribute displays the number of verification frames sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc Test **verificationFrmRx**

Access	Read only
Description	This attribute displays the number of verification frames received during the test (including errored verification frames). The counter wraps to zero if it exceeds its maximum value of (2**64)-1. Note that the number of verification frames lost during the test can be computed by the expression *verificationFrmTx* - *verificationFrmRx*.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc Test **verificationFrmBad**

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Access	Read only
Description	This attribute displays the number of errored verification frames received during the test. A verification frame is considered to be errored if it contains a recognizable verification frame header, but does not match the transmitted frame bit for bit. (Thus, a verification frame that returns after the succeeding verification frame has been transmitted is considered to be errored.) The counter wraps to zero if it exceeds its maximum value of (2**64)-1. Note that the number of correct verification frames received during the test can be computed by the expression *verificationFrmRx* - *verificationFrmBad*.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vcc Test **unrecognizableFrmRx**

Access	Read only
Description	This attribute displays the number of frames received during the test which do not contain a valid loading frame header or verification frame header. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

COMPONENT Atmlf Vcc **TrafficManagement (Tm)**

Groups	GROUP AtmIf Vcc Tm Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpc/vpi TrafficManagement,* *AtmIf/n Vcc/vpi.vci TrafficManagement,* *AtmIf/n Vpt/vpi TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci TrafficManagement* The *Tm* subcomponent contains the operational traffic management attributes of a connection. It is created dynamically for each activated *Vcc*, *Vpc,* or *Vpt* component.
Mib	AtmCore
Dyn. Subcomp.	COMPONENT AtmIf Vcc Tm AvailableBitRate (Abr)
Common Verbs	Help List Display

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GROUP Atmlf Vcc Tm Operational (Oper)

Properties	Operational
Description	This group contains attributes for the *Tm* component to reflect operational traffic attributes.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Tm txTrafficDescType (txTdt)

Access	Read only
Description	T his attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE Atmlf Vcc Tm txQosClass (txQos)

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.

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A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable

Default: No default

ATTRIBUTE Atmlf Vcc Tm txQueueLength (txQLen)

Access: Read only

Description: This attribute indicates the current number of cells in the transmit queue for this connection.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the length of the common queue which is used for this ATM service category.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***fifo***, this attribute indicates the number of cells for this connection which are enqueued in a first-in-first-out queuing method for this ATM service category. This will only occur for connections on ATM IP cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the length of the per-VC queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current number of cells in the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib: AtmCore

Values: Decimal (0..1011840)

Units: cells

Default: No default

ATTRIBUTE Atmlf Vcc Tm txQueueCongestionState (txQCong)

Access: Read only

Description: This attribute indicates the congestion state of the transmit queue for this connection.

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If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the congestion state of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the congestion state of the per-VC queue.

The congestion state of a queue is indicated by a numeric value ranging from 0 to 3. When a queue is in a congested state x, only traffic with discard priority (DP) 0 to x are enqueued. Traffic with DP > x is discarded.

For example, if the congestion state is 3, there is no congestion and all traffic is enqueued. Likewise, when the congestion state is 0, there is maximum congestion and only traffic with DP=0 is enqueued on that queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current congestion state of the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Values	Decimal (0..3)
Default	No default

ATTRIBUTE **Atmlf Vcc Tm** **holdingPriority (hpri)**

Access	Read only
Description	This attribute indicates the actual holding priority in effect for this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. Some applications, for example *Vcc Test*, may override the provisioned holding priority. A value of ***notApplicable*** is displayed when this is an elastic connection. Holding priority does not apply to bandwidth elastic connections. Holding priority has no effect if the equivalent cell rate (ECR) for a connection is zero. This attribute does not apply to *Vpt Vcc*s.
Mib	AtmCore
Values	0 1 2 3

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	4 notApplicable
Default	No default

ATTRIBUTE Atmlf Vcc Tm rxTrafficDescType (rxTdt)

Access	Read only
Description	This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE Atmlf Vcc Tm rxQosClass (rxQos)

Access	Read only
Description	This attribute indicates the quality of service for the called to calling direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

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Mib	AtmCore
Values	0 1 2 3 4 notApplicable sameAsFwd
Default	No default

ATTRIBUTE Atmlf Vcc Tm atmServiceCategory (service)

Access	Read only
Description	This attribute indicates the ATM service category used for traffic in both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications; that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications. The ***unspecifiedBitRate*** service is intended for non-real time applications,

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that is those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib — AtmCore

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtVbr)
nrtVariableBitRate (nrtVbr)
availableBitRate (abr)

Default — No default

ATTRIBUTE Atmlf Vcc Tm **trafficShaping (trShaping)**

Access — Read only

Description — This attribute indicates the traffic shaping state of the connection.

A value of ***notApplicable*** indicates that traffic shaping is not applicable or not supported for this connection. This is the case:
- when the *txTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.
- for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, when the *atmServiceCategory* is ***constantBitRate***.

In these cases, the value of ***notApplicable*** is indicated regardless of whether traffic shaping is enabled or disabled in the provisioning data.

A value of ***disabled*** indicates that traffic shaping is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***linear*** or ***inverseUpc*** indicates that traffic shaping is applicable and supported for the type of connection and has been turned on in the provisioning data. This is the only case that indicates that traffic shaping is performed on the connection. In this case, the actual shaping rate is reflected in the *txTrafficDescParm* attribute, parameter number 4. A value of ***linear*** indicates that traffic is being shaped at the constant rate indicated in *txTrafficDescParm* 4. A value of ***inverseUpc*** indicates that the shaper strictly conforms to the requirements of a dual leaky bucket UPC enforcer. This value is indicated if traffic shaping is enabled, and the *txTrafficDescType* for this connection is 6, 7 or 8.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is always ***disabled***.

Traffic shaping for connections with *atmServiceCategory* as

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availableBitRate (*txTrafficDescType* 9) depends upon the *abrConnectionType* attribute. If *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, the value of this attribute is ***linear***. If *abrConnectionType* is ***erSwitch*** or ***efciSwitch***, this attribute is ***notApplicable***.

Mib — AtmCore

Values
disabled
linear
inverseUpc
notApplicable

Default — No default

ATTRIBUTE Atmlf Vcc Tm bearerClassBbc (bcBbc)

Access — Read only

Description — This attribute indicates the bearer capability for this connection.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

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

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

Class vp service is used to indicate a transparent VP service when the user is requesting an ATM only service from the network. In this case, the network does not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except for VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP and SVP connections.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib — AtmCore

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Values	a c x vp notApplicable
Default	No default

ATTRIBUTE Atmlf Vcc Tm transferCapabilityBbc (tcBbc)

Access	Read only
Description	This attribute indicates the transfer capability for this connection. Uni 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> 0: NoIndication, NoIndication 1: NoIndication, yes 2: NoIndication, no 5: CBR, yes 8: VBR, NoIndication 9: VBR, yes 10: VBR, no A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance, or in the case that the transfer capability in the call request was set to NoIndication. The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data. The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing. The value yes for end-to-end timing indicates that end-to-end timing is required for the connection. The value no for end-to-end timing indicates that end-to-end timing is not required for the connection.
Mib	AtmCore
Values	0 1 2 5 8 9 10 notApplicable

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Default	No default

ATTRIBUTE Atmlf Vcc Tm **clippingBbc (cBbc)**

Access	Read only
Description	This attribute indicates the value of the clipping susceptibility parameter in the broadband bearer capability (BBC) Information Element. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	no yes notApplicable
Default	No default

ATTRIBUTE Atmlf Vcc Tm **unshapedTransmitQueueing (unshap)**

Access	Read only
Description	This attribute indicates the unshaped transmit queuing state of the connection. A value of ***common*** indicates that transmit traffic is being enqueued onto the common transmit queue for this service category. The *txQueueLength* attribute indicates the current length of the common transmit queue. A value of ***fifo*** indicates that transmit traffic is being queued in a first-in-first-out basis for this service category. This is similar to ***common*** queuing, but the *txQueueLength* attribute indicates the number of cells in this connection queue. A value of ***fifo*** will only be indicated for connections on ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***. A value of ***perVc*** indicates that transmit traffic is being enqueued onto a per-VC queue for this connection. A value of ***notApplicable*** indicates that transmit traffic is being shaped for this connection, or that unshaped transmit queuing is not applicable for this type of connection. Transmit traffic for a shaped connection is enqueued onto a per-VC queue, but this attribute is only applicable for unshaped connections. Unshaped transmit queuing is not applicable for basic *Vpt*s.

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Mib	AtmCore
Values	perVc common notApplicable fifo
Default	No default

ATTRIBUTE Atmlf Vcc Tm bestEffort

Access	Read only
Description	This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	indicated notIndicated notApplicable
Default	No default

ATTRIBUTE Atmlf Vcc Tm forceTagging (tagging)

Access	Read only
Description	This attribute indicates the state of force tagging option for this connection. Force tagging refers to setting the CLP bit for all cells on a connection. A value of ***enabled*** indicates that the CLP bit is being set to 1 for all cells in the transmit direction on this connection. A value of ***disabled*** indicates that the CLP bit is unchanged for cells in the transmit direction on this connection. The value ***disabled*** is always displayed for *Vpt*s since forced tagging is applied on a per *Vpt Vcc* basis.
Mib	AtmCore
Values	disabled enabled
Default	No default

ATTRIBUTE Atmlf Vcc Tm weight

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Access	Read only
Description	This attribute indicates the relative weight of this unshaped connection. Connections with a larger weight get a larger proportion of the link bandwidth or in the case of standard *Vpt Vcc*s, the *Vpt* bandwidth. For all but standard *Vpt Vcc*s, the default connection weight is determined by the weight policy for a service category and the traffic descriptor for a connection. For standard *Vpt Vcc*s, the default connection weight is determined by the *Vcc*'s service category. A value from 1 to 4095 indicates an actual weight. The value ***upToQueueLimit*** indicates that the weight of a connection is up to the transmit queue limit for this connection and is used for connections which have the value of the *unshapedTransmitQueueing* attribute displayed as ***fifo***. This attribute has a displayed value of ***notApplicable*** in the following cases: - This connection has the value of the *trafficShaping* attribute displayed as either ***linear*** or ***inverseUpc***. - This connection has the value of the *trafficShaping* attribute displayed as ***disabled***, but the connection's service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc***. - This connection has the value of the *unshapedTransmitQueueing* attribute displayed as ***common***. - This is a basic *Vpt* connection. - For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, since per-connection weight is not supported.
Mib	AtmCore
Values	Decimal (1..4095) upToQueueLimit notApplicable
Default	No default

ATTRIBUTE Atmlf Vcc Tm usageParameterControl (upc)

Access	Read only
Description	This attribute indicates the UPC state of the connection. A value of ***notApplicable*** indicates that UPC is not applicable or not supported for the connection. This is the case: - when the connection's *rxTrafficDescType* is 1 or 2. - for standard *Vpt Vcc*s and basic *Vpt*s. A value of ***notApplicable*** is set regardless of whether UPC is disabled or enabled in provisioning data.

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A value of ***disabled*** indicates that UPC is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***enforced*** indicates that UPC is actively checking conformance for the connection and is discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. On some ATM cards, the counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

A value of ***monitored*** indicates that UPC is actively checking conformance for the connection and counting the violations, but is not discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. The counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt. rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

If the *atmServiceCategory* for this connection is ***availableBitRate***, a value of ***enforced*** indicates that Dynamic Generic Cell Rate Algorithm (DGCRA) is active for the connection. The traffic descriptor parameters used for DGCRA enforcement are reflected in the *rxTrafficDescParm* of the connection.

Mib — AtmCore

Values
enforced
disabled
monitored
notApplicable

Default — No default

ATTRIBUTE Atmlf Vcc Tm txPacketWiseDiscard (txpd)

Access — Read only

Description — This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point.

This attribute is not applicable for *Vpt*s.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

A value of ***wred*** indicates that Weighted Random Early Detection is in

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effect at this connection point. W-RED can be enabled by provisioning for PVCs and SPVCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Packet-wise functions are not applicable to virtual path connections (VPCs) on these cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points.

For ***16pOC3PosAtm***, ***4pMRPosAtm*** and ***1pOC48ChSmIrAtm*** cards, packet-wise discard functions apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points.

Mib	AtmCore
Set of	ppd epd wred
Default	No default

ATTRIBUTE Atmlf Vcc Tm **rxPacketWiseDiscard (rxpd)**

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point. This attribute is not applicable for *Vpt*s. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements. A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

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For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, packet-wise functions are not applicable to virtual path connections (VPCs).

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch, 4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs.

For ***1pOC48ChSmIrAtm*** card, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Note that a provisioned value of ***enabled*** for the *Vcc/Vpc Vcd/Vpd Tm rxPacketWiseDiscard* provisionable attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in actually enabling packet-wise discard functions in the receive data direction of a connection locally on these cards, thus does not affect the operational value displayed.

Mib	AtmCore
Set of	ppd epd
Default	No default

ATTRIBUTE **AtmIf Vcc Tm** **bandwidthElastic (bwElastic)**

Access	Read only
Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application (for example, *Trunk*) running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced is displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection is not released. A value of ***no*** indicates that the bandwidth for this connection is not reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

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Bandwidth elasticity has no effect for connections which have an equivalent cell rate (ECR) of zero.

This attribute is not applicable for *Vpt*s and *Vpt Vcc*s.

Mib	AtmCore
Values	no yes
Default	No default

ATTRIBUTE Atmlf Vcc Tm **bandwidthReduction (bwReduction)**

Access	Read only
Description	This attribute shows the amount by which the bandwidth has been reduced for this connection. This value is non-zero only for connections which have *bandwidthElastic* displayed as ***yes***, and which are also operating in a reduced bandwidth mode. This is typically the case for selected connections running over an IMA link. This attribute takes a value from 0 (no reduction) up to the ECR. For all connections which are running at their full allocated bandwidth, *bwReduction* has the value 0. Connections which have been reduced in allocated bandwidth have a positive number for this attribute. The *bwReduction* may be subtracted from the ECR (which is displayed as *txTrafficDescParm* 5) to determine the actual bandwidth allocated to this connection.
Mib	AtmCore
Values	Decimal (0..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Atmlf Vcc Tm **abrConnectionType (abrType)**

Access	Read only
Description	This attribute indicates the type of ABR behavior which is in effect at this connection. This attribute is only applicable if the *atmServiceCategory* attribute is ***availableBitRate***. If the *atmServiceCategory* attribute is not ***availableBitRate***, this attribute value is set to ***notApplicable***. For ATM cards which do not support ABR connections, the possible values for this attribute are ***notApplicable***, ***efciSwitch***, or ***nonAbrInterworking***. In EFCI marking mode, the Explicit Forward Congestion Indication (EFCI) field in the data cell headers is used to indicate transmit queue congestion. For ATM cards which do support ABR connections, if the *connectionPointType* is ***connectionEndPoint***, the value of this attribute is ***sourceDest***. In this mode, the ABR Source and Destination behavior is in effect at this connection. This attribute is also ***sourceDest*** in the case

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where the next hop connection is specified as ***nonAbrInterworking***. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

If the *connectionPointType* is not ***connectionEndPoint***, the value of this attribute depends upon the *abrConnectionType* provisioning and the card type to which the traffic is forwarded on the backplane. The default *abrConnectionType* is provisioned at the *CA Abr abrConnectionType* attribute, and may be overridden for a provisioned connection in the *Vcd Tm abrConnectionType* or *Vpd Tm abrConnectionType* attribute. If the *CA Abr abrConnectionType* attribute is ***virtualSourceDest*** at either one of the two connection points, and if both the connection points are defined on ATM cards which support ABR connections, virtual source and destination behavior is applied to the connection. In this instance, the attribute displays the value ***virtualSourceDest***.

This attribute has the value ***erSwitch*** if ABR explicit rate functionality is in effect at this connection. In this mode, the switch may modify the Explicit Rate (ER) field of backward Resource Management (RM) cells to indicate the status of congestion at this connection point.

This attribute has the value ***nonAbrInterworking*** in the case where this connection point is functioning as an SPVC origin for an ABR connection where the link side of this connection is configured as a non-ABR ATM service category. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

Mib	AtmCore
Values	erSwitch efciSwitch virtualSourceDest sourceDest nonAbrInterworking notApplicable
Default	No default

ATTRIBUTE **Atmlf Vcc Tm** **txTrafficDescParm (txTdp)**

Access	Read only
Description	This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR), actual cell rate (ACR), explicit rate (ER), equivalent cell rate (ECR), and actual shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. When *txTrafficDescType* is 1 or 2, parameters 1 through 5 are unused.

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In this description, PCR is the greater of either the PCR or the requested shaping rate (parameter 1 or parameter 5) specified in the *txTrafficDescParm* attribute under the *Vcd Tm* or *Vpd Tm* component.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, parameter 4 reflects the actual shaping rate in cell/s for this connection. For CQC-based ATM cards, the set of available shaping rates is based on the number of interfaces doing shaping (attribute *perVcQueueInterfaces*), and the *shapingScalingFactor* attribute of the *Arc Cqc Override* component. A rate of zero (0) indicates that shaping is not performed, or that the interface is down.

When *txTrafficDescType* is 9**,** parameter 1 represents the PCR; parameter 2 represents the Cell Delay Variation Toleration (CDVT); parameter 3 represents the Minimum Cell Rate (MCR); the meaning of parameter 4 depends upon the value of the *abrConnectionType* attribute. if *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, parameter 4 represents the Allowed Cell Rate (ACR); If *abrConnectionType* is ***erSwitch***, parameter 4 represents the Explicit Rate (ER); and if *abrConnectionType* is ***efciSwitch***, parameter 4 reflects the actual shaping rate in cell/s for this connection.

When *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9, parameter 5 reflects the equivalent cell rate in cell/s for this connection as determined by the

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Connection Admission Control (CAC) algorithm. The equivalent cell rate is useful in determining the admission characteristics of this connection.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vcc Tm txQueueThresholds (txQThresh)

Access	Read only
Description	This attribute indicates the queue limit and the discard thresholds for the transmit queue of this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the thresholds of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the thresholds of the per-VC queue. The first element indicates the queue limit. The provisioned value of the transmit queue limit is derived from the *txQueueLimit* attribute under the service category subcomponents of the *CA* component for the service category of this connection. The second element is the threshold that marks the transition from congestion state 1 to congestion state 0. This is the threshold at which traffic with discard priority (DP) = 1 is discarded. This threshold is set at approximately 90 percent of the first parameter, the operational queue limit. The third element is the threshold that marks the transition from congestion state 2 to congestion state 1. This is the threshold at which traffic with DP = 2 is discarded. This threshold is set at approximately 75 percent of the first parameter, the operational queue limit. The fourth element is the threshold that marks the transition from congestion state 3 to congestion state 2. This is the threshold at which traffic with DP = 3 is discarded. This threshold is set at approximately 35 percent of the first parameter, the operational queue limit. For ***1pOC48ChSmIrAtm*** cards, this attribute displays the thresholds of the link class queue used by this connection to buffer it traffic. This attribute does not apply to basic *Vpt*s.
Mib	AtmCore
Vector of	Decimal (0..1011840)

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Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Atmlf Vcc Tm **rxTrafficDescParm (rxTdp)**

Access	Read only
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. Cell delay variation tolerance (CDVT) is expressed in microseconds. When *rxTrafficDescType* is 1 or 2, none of the parameters are used. When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; parameter 4 represents the CDVT. When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; parameter 4 represents the CDVT. When *rxTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents CDVT; parameter 3 represents the MCR; parameter 4 is not used. If *upc* is ***disabled*** for this connection, the values of PCR, SCR, MBS and CDVT are the provisioned parameters. If *upc* is ***enabled***, the values of PCR, SCR, MBS, and CDVT are exactly

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	the values used by the usage parameter control hardware in policing the arriving traffic. These may vary slightly from the provisioned values due to granularity of the hardware. In the case where the PCR is equal to the SCR, the effective MBS is zero.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Atmlf Vcc Tm txQosParameters (tqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE Atmlf Vcc Tm rxQosParameters (rqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR,

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rt-VBR, and nrt-VBR connections.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

COMPONENT Atmlf Vcc Tm AvailableBitRate (Abr)

Groups	GROUP Atmlf Vcc Tm Abr Operational (Oper)
Scope	Device
Description	*Atmlf/n Vpc/vpi Tm AvailableBitRate,* *Atmlf/n Vcc/vpi.vci Tm AvailableBitRate,* *Atmlf/n Vpt/vpi Tm AvailableBitRate,* *Atmlf/n Vpt/vpi Vcc/vci Tm AvailableBitRate* This component contains ABR-related operational attributes of a connection. It is dynamically created for connections where the value of the *atmServiceCategory* attribute is ***availableBitRate***, and where the value of the *abrConnectionType* attribute is ***sourceDest***, or ***virtualSourceDest***.
Mib	AtmCore
Common Verbs	Help List Display

GROUP Atmlf Vcc Tm Abr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for connections using ABR service category.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Tm Abr initialCellRate (icr)

Access	Read only
Description	This attribute indicates the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. For nailed-up connections, this attribute is determined by the provisioned value of the *initialCellRate* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

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The ICR for a connection is a value between the MCR and the PCR. Furthermore, ICR has an upper bound determined by the *transientBufferExposure* divided by *fixedRoundTripTime*.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **transientBufferExposure (tbe)**

Access	Read only
Description	This attribute indicates the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the resource to send during start-up periods, before the first Resource Management (RM) cell returns. For nailed-up connections, this attribute is determined by the provisioned value of the *transientBufferExposure* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **fixedRoundTripTime (frtt)**

Access	Read only
Description	This attribute indicates the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. For nailed-up connections, this attribute is determined by the provisioned value of the *fixedRoundTripTime* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **rateDecreaseFactor (rdf)**

Access	Read only

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Description	This attribute indicates the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **rateIncreaseFactor (rif)**

Access	Read only
Description	This attribute indicates the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateIncreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **maxCellPerRmCell (nrm)**

Access	Read only
Description	This attribute indicates the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of

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	the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxCellsPerRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **maxTimeBetweenRmCell (trm)**

Access	Read only
Description	This attribute indicates the TRM parameter for this connection. TRM provides an upper bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxTimeBetweenRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **cutoffDecreaseFactor (cdf)**

Access	Read only
Description	This attribute indicates the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the *forwardRmCellLimit* attribute, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

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For nailed-up connections, this attribute is determined by the provisioned value of the *cutoffDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64)
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **acrDecreaseTimeFactor (adtf)**

Access	Read only
Description	This attribute indicates the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. For nailed-up connections, this attribute is determined by the provisioned value of the *acrDecreaseTimeFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **forwardRmCellLimit (crm)**

Access	Read only
Description	This attribute indicates the CRM parameter for this connection. CRM is the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is obtained as *transientBufferExposure* divided by *maxCellsPerRmCell*.
Mib	AtmCore
Values	Decimal (1; 3; 7; 15; 31; 63; 127; 255; 511; 1023; 2047; 4095)

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Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **txRateChangeInfo (txrci)**

Access	Read only
Description	This attribute indicates the rate change information put into the last forward Resource Management (RM) cell turned around as a backward-RM cell. For connections configured as an ABR Source or Destination, the turned around backward-RM cell is sent over the interface. For connections configured as an ABR Virtual Source or Virtual Destination, the turned around backward-RM cell is sent over the backplane.
Mib	AtmCore
Values	congestionIndicated noIncreaseIndicated explicitRateIndicated
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **acrRateChangeInfo (arci)**

Access	Read only
Description	This attribute indicates the type of change in the Allowed Cell Rate (ACR) as a result of the information in the last backward Resource Management (B-RM) cell received from the interface. This attribute value is only applicable when the *Vcc Tm* or *Vpc Tm* *abrConnectionType* attribute is ***sourceDest*** or ***VirtualSourceDest***. In all other cases, this attribute value is ***notApplicable***. A value of ***noChange*** indicates that the rate did not change as a result of the last backward RM cell received. A value of ***decreasedByRdf*** or ***increasedByRif*** indicates that the ACR was increased or decreased by the corresponding factor. This change is as a result of the CI or NI bit setting in the last backward RM cell, or an ADTF timeout. A value of ***setToExplicitRate*** indicates that the ACR was set to the ER value in the last backward RM cell.
Mib	AtmCore
Values	noChange decreasedByRdf increasedByRif setToExplicitRate notApplicable
Default	No default

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ATTRIBUTE Atmlf Vcc Tm Abr **txFwdRmCells**

Access	Read only
Description	This attribute counts the number of forward Resource Management (RM) cells sent over the interface since the last backward RM-cell was received from the interface. If the value of this attribute is greater than or equal to the value of *forwardRmCellLimit*, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. This counter is reset to zero each time a backward-RM cell is received. This counter does not wrap to zero if it reaches its maximum value of 4095 in order to indicate that no backward RM cell has been received.
Mib	AtmCore
Values	Decimal (0..4095)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Tm Abr **rxEfci**

Access	Read only
Description	This attribute indicates the value of the Explicit Forward Congestion Indication (EFCI) bit of the last data cell received from the interface. When a forward Resource Management (RM) cell is turned around as a backward-RM cell, the Congestion Indication (CI) field of the backward-RM cell is set to 1, if the value of this attribute is ***indicated***. This attribute is set to ***notIndicated*** each time a backward-RM cell is transmitted.
Mib	AtmCore
Values	notIndicated indicated
Default	No default

COMPONENT Atmlf Vcc **SourcePvc (Src)**

Groups	GROUP AtmIf Vcc Src Provisioned (Prov) GROUP AtmIf Vcc Src Operational (Oper) GROUP AtmIf Vcc Src OsiState (State) GROUP AtmIf Vcc Src CallRedirectionOper (RedirectOp)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc*

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This component represents the source end of a soft PVC.

Mib	AtmNetworking
Opt. Subcomp.	COMPONENT AtmIf Vcc Src CallRedirection (Redirect) COMPONENT AtmIf Vcc Src ManualDtl (Mdtl) COMPONENT AtmIf Vcc Src RerouteOverride (RerOv)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Atmlf Vcc Src Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SourcePvc* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Src callingAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the calling address of the soft PVC. If it is a null string, then the calling address is the address of the current interface (that is, where the soft PVC originates).
Mib	AtmNetworking
Values	String (0..20, Hex)
Default	""

ATTRIBUTE Atmlf Vcc Src calledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the called (remote) address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

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ATTRIBUTE Atmlf Vcc Src **calledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the remote VPI and VCI of the soft PVC.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

ATTRIBUTE Atmlf Vcc Src **adminControl**

Access	Read: All Write: All
Description	This attribute specifies the initial state of the connection. If this attribute is set to ***permLocked***, the connection initially remains down following activation. Setting this attribute to ***unlocked*** causes the connection to be established when it is activated.
Mib	AtmNetworking
Values	permLocked unlocked
Default	unlocked

ATTRIBUTE Atmlf Vcc Src **aisGeneration (ais)**

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC when the SPVC is not up. The only exception is that when the source SPVC attribute *adminControl* is set to ***permLocked***, OAM-AIS cells are not generated for the source SPVC. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

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GROUP Atmlf Vcc Src Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvp* or *SrcPvc* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Src retryCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed attempts to set up the soft PVP or soft PVC since the last time the connection failed.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vcc Src lastFailureCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages. The default value for this attribute is set to 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vcc Src lastFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

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GROUP Atmlf Vcc Src **OsiState (State)**

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

ATTRIBUTE Atmlf Vcc Src **adminState (osiAdmin)**

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

ATTRIBUTE Atmlf Vcc Src **operationalState (osiOper)**

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

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Mib	AtmNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Atmlf Vcc Src usageState (osiUsage)

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

GROUP Atmlf Vcc Src CallRedirectionOper (RedirectOp)

Properties	Operational
Description	This group contains the operational attributes associated with the *CallRedirection* subcomponent.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Src currentDestination

Access	Read: All Write: Illegal
Description	This attribute indicates the current destination of the soft PVC or soft PVP. A ***notConnected*** status indicates that the connection is not established. A ***primary*** status indicates that the connection is established to the remote destination specified by *calledAddress* and *calledVpiVci/calledVpi* attributes under *Atmif Vcc Src* or *Atmif Vpc Src* or *Atmif Vpt Vcc Src* Component. A ***secondary*** status indicates that the connection is established to the remote destination specified by *secondaryCalledAddress* and *secondaryCalledVpiVci/secondaryCalledVpi* attributes under *Atmif Vcc Src CallRedirection* or *Atmif Vpc Src CallRedirection* or *Atmif Vpt Vcc Src CallRedirection* Component.
Mib	AtmNetworking

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Values	notConnected primary secondary
Default	No default

ATTRIBUTE Atmlf Vcc Src **primaryAdminState**

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the primary destination. The value ***locked*** indicates that the primary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the primary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked
Default	No default

ATTRIBUTE Atmlf Vcc Src **secondaryAdminState**

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the secondary destination. The value ***locked*** indicates that the secondary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the secondary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked
Default	No default

ATTRIBUTE Atmlf Vcc Src **lastSecondaryFailureCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code value of the last signalling message to the secondary destination which contained the CAUSE information element. If there has been no previous failure, the value for this attribute is 0.
Mib	AtmNetworking
Values	Decimal (0..255)

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Default	No default

ATTRIBUTE Atmlf Vcc Src lastSecondaryFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute indicates the diagnostic code associated with the *lastSecondaryFailureCauseCode* attribute. If the diagnostic code was not provided with that CAUSE information element or if there has been no previous failure, this attribute is empty.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT Atmlf Vcc Src CallRedirection (Redirect)

Groups	GROUP Atmlf Vcc Src Redirect Provisioned (Prov)
Scope	Device
Description	*Atmif/n Vcc/vpi.vci SrcPvc CallRedirection* *Atmif/n Vpt/vpi Vcc/vci SrcPvc CallRedirection* This component represents the secondary destination information for the source end of a soft PVC. The addition of this subcomponent is not critical to the parent SPVC. Deletion of this subcomponent or changes to its attributes will impact service of the SPVC if it is established to the secondary destination.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

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VERB LOCK **AtmIf Vcc Src Redirect**

Impact: Service

Description:

Lock Atmif Vcc Src CallRedirection
Lock -primary Atmif Vcc Src CallRedirection
Lock -secondary Atmif Vcc Src CallRedirection

Lock Atmif Vpt Vcc Src CallRedirection
Lock -primary Atmif Vpt Vcc Src CallRedirection
Lock -secondary Atmif Vpt Vcc Src CallRedirection

This verb selectively precludes a provisioned destination address from consideration during call setup attempts for a Src PVC.

If [*-primary*] option is present, then the primary destination address is precluded from call setup attempts. If the connection is established to the primary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the secondary destination address.

If [*-secondary*] option is present, then the secondary destination address is precluded from call setup attempts. If the connection is established to the secondary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the primary destination address.

If no option is present, the secondary destination is locked. This command will have the same effect as providing the *secondary* option.

Only one of the primary or the secondary addresses may be locked at any given time.

VERB UNLOCK **AtmIf Vcc Src Redirect**

Impact: Service

Description:

Unlock Atmif Vcc Src CallRedirection
Unlock -primary Atmif Vcc Src CallRedirection
Unlock -secondary Atmif Vcc Src CallRedirection
Unlock -primary -secondary Atmif Vcc Src CallRedirection

Unlock Atmif Vpt Vcc Src CallRedirection
Unlock -primary Atmif Vpt Vcc Src CallRedirection
Unlock -secondary Atmif Vpt Vcc Src CallRedirection
Unlock -primary -secondary Atmif Vpt Vcc Src CallRedirection

This verb selectively unlocks a destination address. The indicated address will be considered in subsequent call setup attempts.

If [*-primary*] option is present, then the primary destination address is

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unlocked and it is considered for subsequent call setup attempts. This action does not have any impact on established connections.

If [*-secondary*] option is present, then the secondary destination address is unlocked and it is considered in subsequent call setup attempts. This action does not have any impact on established connections.

If no option is present the secondary destination address is unlocked. This command will have the same effect as providing the *secondary* option.

If both options are provided, either of the primary or the secondary address which may have been locked will be unlocked.

GROUP Atmlf Vcc Src Redirect **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the Source PVC *CallRedirection* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Src Redirect **secondaryCalledAddress**

Access	Read: All Write: All
Description	This attribute specifies the secondary called address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vcc Src Redirect **secondaryCalledVpiVci**

Access	Read: All Write: All
Description	This attribute specifies the secondary called VPI and VCI of the soft PVC.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

COMPONENT Atmlf Vcc Src **ManualDtl (Mdtl)**

Groups	GROUP AtmIf Vcc Src Mdtl Provisioned (Prov) GROUP AtmIf Vcc Src Mdtl Operational (Oper)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc ManualDtl* *AtmIf/n Vpc/vpi SrcPvp ManualDtl* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc ManualDtl*

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This component represents the ability to specify the PNNI path on a per connection basis for provisioned SPVC and SPVP connections.

The addition or deletion of this component is critical to the parent SPVC or SPVP. Changes to the attributes contained under this component are not critical.

Mib AtmNetworking

Common Verbs
Help
List
Display
Add
DELete

VERB REConnect **AtmIf Vcc Src Mdtl**

Impact Service

Description *REConnect AtmIf/n Vcc/vpi.vci Src Mdtl*
REConnect -primary AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -alternate AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -automatic AtmIf/n Vcc/vp.vci Src Mdtl

This command is used to trigger a connection to attempt to connect using the requested path. The behavior of this command differs for connections which do and do not subscribe to Path Optimization capabilities provided by rerouting services. To summarize:

1. Non-reroute Subscribed connections
A reconnect comand will result in the connection being taken down and re-establishment attempts being made. By default (if no option is specified), the primary path is attempted first otherwise the path specified by the option is first attempted. In the event of reconnect failure, subsequent re-establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths.

2. Reroute Subscribed connections
A reconnect comand will utilize make-before-break functionality. If an option is specified then only that path will be attempted. If a connection can be established, then datapath switching will be used to replace the existing connection minimizing cell loss. If no option is specified, the connection establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths only until such time that a successfully established connection would be deemed more optimal than the incumbent. For instance, if a reconnect command is issued for a connection which is on it's alternate path and establishment on the primary path fails then the reconnect operation is considered complete and the connection will remain on the alternate path.

GROUP **AtmIf Vcc Src Mdtl** **Provisioned (Prov)**

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Properties	Provisioned
Description	This group contains the provisionable attributes for the Manual DTL selection paths for provisioned connections. The normal sequence for connection retry is: First try to establish the connection using the *primaryPath*. If the connection is not successful and if the *alternatePath* has been provisioned, try to connect using the *alternatePath*. If the connection is still unsuccessful, use the PNNI routing protocol to generate the path.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Src Mdtl **primaryPath (priPath)**

Access	Read and write
Description	This attribute specifies the name of the primary MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni*.
Mib	AtmNetworking
Values	String (1..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vcc Src Mdtl **alternatePath (altPath)**

Access	Read and write
Description	This attribute specifies the name of the alternate MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni.* An empty string disables the alternate path.
Mib	AtmNetworking
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vcc Src Mdtl **automaticFallback (auto)**

Access	Read and write
Description	This attribute specifies whether PNNI routing is to be used to establish a connection if connection attempts using the primary and alternate paths fail. If the value is ***enable***, PNNI routing will be attempted; if the value is ***disable***, it will not.
Mib	AtmNetworking
Values	disable enable
Default	enable

ATTRIBUTE Atmlf Vcc Src Mdtl **mdtlVersion (vers)**

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Access	Read and write
Description	This attribute indicates a version number for Specified Paths and will ensure that the reroute behaviors (not subscribed) are maintained following a software migration to a software version where global rerouting is supported for Specified Path connections. This is an internal attribute intended for the above purpose only and should not be altered.
Mib	AtmNetworking
Values	notRerouteCapable rerouteCapable
Default	notRerouteCapable

GROUP Atmlf Vcc Src Mdtl **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *atmSrcMdtl* component
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Src Mdtl **currentPath (curPath)**

Access	Read: All Write: Illegal
Description	This attribute indicates the current connection status of the Specified Path connection. A ***not connected*** status indicates that the connection is not established. The retry sequence did not succeed. The network operator can issue the *Reconnect* command to restart the retry sequence. A ***primary*** status indicates that the connection is using the path specified by the *primaryPath* attribute. An ***alternate*** status indicates that the connection is using the path specified by the *alternatePath* attribute. An ***automatic*** status indicates that the connection is using the path generated by the PNNI routing protocol. An ***unknown*** status indicates that the provisioning data for the path upon which the connection is established has been altered. A ***waiting connection*** status indicates that the connection is in a retry phase.
Mib	AtmNetworking
Values	not connected primary alternate automatic unknown waiting connection
Default	"not connected"

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ATTRIBUTE Atmlf Vcc Src Mdtl primaryPathFailCause (priPathFail)

Access	Read: All Write: Illegal
Description	This attribute identifies the last cause code failure for the primary path. The value is reset to zero when the *primaryPath* attribute is set to a new value.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vcc Src Mdtl alternatePathFailCause (altPathFail)

Access	Read: All Write: Illegal
Description	This attribute identifies the last cause code failure for the alternate path. The value is set to zero when the *alternatePath* attribute is set to a new value.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

COMPONENT Atmlf Vcc Src RerouteOverride (RerOv)

Groups	GROUP Atmlf Vcc Src RerOv Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc RerouteOverride* *AtmIf/n Vpc/vpi SrcPvp RerouteOverride* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc RerouteOverride* *FrAtm/n Dlci/x Siwf RerouteOverride* This component represents the ability to override rerouting capability subscription options on a per connection basis for provisioned SPVC and SPVP connections. The addition of this component and changes to the attributes contained in this component are critical to the parent SPVC or SPVP. However, the deletion of this component is not a critical change for the connection. If this component is deleted, the connection remains active with the last

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provisioned subscription options. Subscription is lost when the connection goes down and re-establishes.

Mib — AtmNetworking

Common Verbs
Help
List
Display
Add
DELete

VERB OPTIMIZE **AtmIf Vcc Src RerOv**

Impact — Service

Description

OPTimize AtmIf/n Vcc/<vpi.vci> Src RerOv
OPTimize AtmIf/n Vpc/<vpi> Src RerOv
OPTimize AtmIf/n Vpt/<vpi> Vcc/<vci> Src RerOv
OPTimize FrAtm/n Dlci/x Siwf RerOv

This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is cancelled.

Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP **AtmIf Vcc Src RerOv** **Provisioned (Prov)**

Properties — Provisioned

Description — This group contains the provisionable attributes related to rerouting subscription options for provisioned connections.

Mib — AtmNetworking

ATTRIBUTE **AtmIf Vcc Src RerOv** **protocol**

Access — Read and write

Description

This attribute specifies the rerouting protocols that are requested by the connection segment. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning.

One of the following values can be specified:
sameAsInterface: The requested rerouting protocols are specified by the *protocol* attribute under the *Reroute Ov* component for the interface.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum

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	"Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmNetworking
Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE Atmlf Vcc Src RerOv localConnectionRecoverySubscr (lRecSub)

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription. If the connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted. One of the following values can be specified: ***sameAsInterface***: The subscription rule is determined by the *localConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local connection recovery, otherwise the connection segment does not request subscription. ***yes:*** The connection segment requests subscription to local connection recovery. ***no***: The connection segment does not request subscription to local connection recovery.
Mib	AtmNetworking

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Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE Atmlf Vcc Src RerOv **localPathOptimizationSubscr (lOptSub)**

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription. If the connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted. One of the following values can be specified: ***sameAsInterface***: The subscription rule is determined by the *localPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local path optimization, otherwise the connection segment does not request subscription. ***yes:*** The connection segment requests subscription to local path optimization. ***no***: The connection segment does not request subscription to local path optimization.
Mib	AtmNetworking
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE Atmlf Vcc Src RerOv **globalConnectionRecoverySubscr (gRecSub)**

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

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If the connection segment requests ***localEbr***, this attribute controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR connection recovery.
no: The connection segment does not request subscription to global or EBR connection recovery.

Mib — AtmNetworking

Values
no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE Atmlf Vcc Src RerOv **globalPathOptimizationSubscr (gOptSub)**

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR path optimization.
no: The connection segment does not request subscription to global or EBR path optimization.

Mib — AtmNetworking

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Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

COMPONENT Atmlf Vcc EndPoint (Ep)

Groups	GROUP AtmIf Vcc Ep Operational (Oper)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Ep* *AtmIf/n Vpt/vpi Vcc/vci Ep* The *EndPoint* component of the application associated with the VCC is used to link a switched VCC to an application that sends and receives frames using the connection.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP Atmlf Vcc Ep Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the AtmEndPoint component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Ep applicationName

Access	Read only
Description	This attribute indicates the component name associated with the application associated with the switched VCC.
Mib	AtmNetworking
Values	The name of the component
Default	No default

COMPONENT Atmlf Vcc RelayPoint (Rp)

Scope	Device
Description	*AtmIf/n Vpc/vpi Rp* *AtmIf/n Vcc/vpi.vci Rp* *AtmIf/n Vpt/vpi Vcc/vci Rp* The *RelayPoint* component is used to establish a single hop of a Switched

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connection. When linked together, two *Rp*s within a module, the associated connections are configured to relay ATM cells to one another.

Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT AtmIf Vcc Rp NextHop
Common Verbs	Help List Display

COMPONENT AtmIf Vcc Rp NextHop

Instance	Decimal (1..300)
Groups	GROUP AtmIf Vcc Rp NextHop Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpc/vpi Rp nextHop/n* *AtmIf/n Vcc/vpi.vci Rp nextHop/n* *AtmIf/n Vpt/vpi Vcc/vci Rp nextHop/n* The *RelayPointNextHop* component indicates the hops associated with this Rp component. There can be more than one component listed if the Vcc "*distributionType"* is ***"pointToMultipoint"*** and the "*callDirection"* is ***"fromLink"***.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vcc Rp NextHop Operational (Oper)

Properties	Operational
Description	This attribute group contains an operational attribute for the AtmRelayPointNextHop component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Rp NextHop nextHopValue

Access	Read only
Description	This attribute indicates the component name of the Rp component with which this Rp component is associated.
Mib	AtmNetworking
Values	The name of the component
Default	No default

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COMPONENT Atmlf Vcc DestinationPvc (Dst)

Groups	GROUP AtmIf Vcc Dst Operational (Oper) GROUP AtmIf Vcc Dst OsiState (State)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci DstPvc* *AtmIf/n Vpt/vpi Vcc/vci DstPvc* This component represents the destination end of a soft PVC. This component can be dynamically created or provisioned. When this component is dynamically created, it implicitly indicates that a connection has been established. This dynamically created component does not exist when there is no connection. When this component is provisioned, it does not imply that a connection has been established. The existence of a provisioned *destinationPVC* component allows the possibility of generating OAM-AIS cells when the SPVC is down. The attribute *aisGeneration* under component *Configuration* is used to specify AIS generation at the destination end of a soft PVC.
Mib	AtmNetworking
Subcomponents	COMPONENT AtmIf Vcc Dst Configuration (Config)
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vcc Dst Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *DestinationPvc* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Dst calledAddress

Access	Read: All Write: Illegal
Description	This attribute represents the called address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)

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Default	No default

ATTRIBUTE Atmlf Vcc Dst **callingAddress**

Access	Read: All Write: Illegal
Description	This attribute represents the remote address of the soft PVC. If the address in not known, then the value of this address is ***Unknown***.
Mib	AtmNetworking
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Atmlf Vcc Dst **callingVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute represents the remote VPI and VCI of the soft PVC. If the VPI and VCI values are not known, this attribute is set to ***Unknown***.
Mib	AtmNetworking
Values	String (7..9, ASCII)
Default	No default

GROUP Atmlf Vcc Dst **OsiState (State)**

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

ATTRIBUTE Atmlf Vcc Dst **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively

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

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

Mib — AtmNetworking

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

Default — unlocked

ATTRIBUTE Atmlf Vcc Dst operationalState (osiOper)

Access — Read only

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

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

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

Mib — AtmNetworking

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Atmlf Vcc Dst usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — AtmNetworking

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Values	idle active (activ) busy
Default	idle

COMPONENT Atmlf Vcc Dst Configuration (Config)

Groups	GROUP AtmIf Vcc Dst Config DstProv
Scope	Device
Description	*Atmif/n Vcc/x.y Dst Override* This *Override* component contains provisioned attributes for this destination SPVC. If this component does not exist, the destination SPVC behaves as if this component had been provisioned with default values for all its attributes.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP Atmlf Vcc Dst Config DstProv

Properties	Provisioned
Description	This group contains provisionable attributes for destination SPVC/Ps.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Dst Config aisGeneration (ais)

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC or SPVP is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC or SPVP when the SPVC or SPVP is not up. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

COMPONENT Atmlf Vcc MulticastNailedUpRelayPoint (Mnrp)

Groups	GROUP AtmIf Vcc Mnrp Provisioned (Prov)

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Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Mnrp* This component is used to establish a root of a multicast nailed-up ATM Bearer Service (ABS) connection. By linking a *Mnrp* to a *Nrp*, the associated connections are configured to relay ATM cells from *Mnrp* to *Nrp*. The *Mnrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, *Nrp* and *Loop*). This component is supported only on 4pOC3SmIrAtm and 4pOC3MmAtm cards.This component is not supported under *Vpt Vcc* and *Vpt Vpc*.
Mib	AtmBearerService
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vcc Mnrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Mnrp* component.
Mib	AtmBearerService

ATTRIBUTE Atmlf Vcc Mnrp oamSegmentBoundary (sb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Mnrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.
Mib	AtmBearerService
Values	no yes sameAsInterface
Default	sameAsInterface

ATTRIBUTE Atmlf Vcc Mnrp bandwidthElastic (bwElastic)

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Access	Read and write
Criticality	Component
Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Mnrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid. A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority*.
Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE Atmlf Vcc Mnrp **overrideHoldingPriority (ohpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3 4 noOverride
Default	noOverride

ATTRIBUTE Atmlf Vcc Mnrp **nextHop (nextHop)**

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Access	Read and write
Description	This attribute specifies the list of *Nrp* components with which this *Mnrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp.* This attribute must be provisioned with at least one Nrp component under a compatible connection type.
Mib	AtmBearerService
List of	Link (Service, nextHop)
Default	No default

COMPONENT Atmlf Vcc PerformanceMonitoring (Pm)

Instance	linkSide switchSide
Groups	GROUP AtmIf Vcc Pm PmStatus (Status) GROUP AtmIf Vcc Pm FwdClrMeasurements (FwdClr) GROUP AtmIf Vcc Pm BwdClrMeasurements (BwdClr) GROUP AtmIf Vcc Pm ArMeasurements (Ar)
Scope	Device
Description	*AtmIf/n Vcc/x.y PerformanceMonitoring* *AtmIf/n Vpt/x Vcc/y PerformanceMonitoring* *AtmIf/n Vpc/x PerformanceMonitoring* This component contains operational attributes for Performance Monitoring (PM) measurements on the connection. It also allows starting and stopping PM measurements when the *controlMode* attribute in the *AtmIf Pm* or *AtmIf Vcc Vcd Pm* or *AtmIf Vpc Vpd Pm* component is set to ***onDemand***.
Mib	AtmCore
Common Verbs	Help List Display

VERB START Atmlf Vcc Pm

Impact	Service
Description	*Start AtmIf/n Vcc/x.y PerformanceMonitoring* *Start AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) activation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when the connection is idle, PM has already been started or the *controlMode* attribute for the PM measurements has a value of ***autoStart***. The measurements will continue until the *Stop* verb is issued.

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VERB STOP Atmlf Vcc Pm

Impact	Service
Description	*Stop AtmIf/n Vcc/x.y PerformanceMonitoring* *Stop AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) deactivation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when PM is not running or the *controlMode* attribute for the PM measurements has a value of ***autoStart***.

GROUP Atmlf Vcc Pm **PmStatus (Status)**

Properties	Operational
Description	This group contains attributes indicating the status of each Performance Monitoring (PM) measurement.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Pm **clrMeasurementStatus (clr)**

Access	Read only
Description	This attribute displays the Cell Loss Ratio (CLR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE Atmlf Vcc Pm **arMeasurementStatus (arStatus)**

Access	Read only
Description	This attribute indicates the Availability Ratio (AR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for the failure cause.

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Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE Atmlf Vcc Pm failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause of Performance Monitoring (PM) measurements. The following are possible causes: The value ***noError*** indicates no error. The value ***unknownCause*** indicates unknown failure cause. The value ***softwareResourcesUnavailable*** indicates software resources reserved for a maximum of 255 active PMs on the local FP card have been used up. The value ***hardwareResourcesUnavailable*** indicates hardware resources reserved for a maximum of 512 active PMs CLR card have been used up on the Link Side local card. The value ***remoteEndNoResponse*** indicates no response from remote end during activation. The value ***activationCollision*** indicates activation collision was detected. Usually this is caused by both ends of the connection being provisioned to request PM. Only one end should be so provisioned. The value ***remoteEndRejectedActivation*** indicates the remote end has rejected an activation request. Usually this is due to the remote end reaching a resource limit. The value ***pcrUnsupported*** indicates the Tx or Rx PCR is out of range. The PCR value must be between 0 and 409601. The value ***nextHopConnectionUnsupported*** indicates the next hop card type or connection type do not allow access to the necessary hardware to support PM measurements. The value ***upcNotDisabled*** indicates UPC is not disabled on the local next hop card for this connection. PM measurements are not supported when UPC is either enforced or monitored.
Mib	AtmCore

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Values	noError unknownCause softwareResourcesUnavailable hardwareResourcesUnavailable remoteEndNoResponse activationCollision remoteEndRejectedActivation pcrUnsupported nextHopConnectionUnsupported upcNotDisabled
Default	noError

ATTRIBUTE Atmlf Vcc Pm clrEnhancementStatus (enhanced)

Access	Read only
Description	This attribute indicates an enhanced mode of operation for Cell Loss Ratio (CLR) measurements by including cell discards from the remote segment end point which are not covered by the performance measurement (PM) cell. The value ***inactive*** indicates that CLR enhanced mode of operation has not been activated. The value ***active*** indicates that discards at the remote segment end point are being included in CLR measurements. The value ***remoteEndNotProvidingStatistics*** indicates that the remote end is not replying to proprietary requests for additional discard counts. This occurs when the remote end does not have the software necessary to recognize these requests.
Mib	AtmCore
Values	inactive active remoteEndNotProvidingStatistics
Default	inactive

GROUP Atmlf Vcc Pm FwdClrMeasurements (FwdClr)

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the forward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Pm fwdTotalClrInterval

Access	Read only

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Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) has been calculated in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vcc Pm fwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm fwdTotalUserCellsTx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the local end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm fwdTotalUserCellsRx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

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ATTRIBUTE Atmlf Vcc Pm **fwdTotalUserCellsTx01**

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the local end over the total CLR measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm **fwdPmCellDiscardCount**

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm **fwdClr0**

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE Atmlf Vcc Pm **fwdClr01**

Access	Read only
Description	This attribute indicates the CLR for CLP=0+1 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP Atmlf Vcc Pm **BwdClrMeasurements (BwdClr)**

Properties	Operational

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Description	This group contains Cell Loss Ratio (CLR) measurements for the backward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Pm bwdTotalClrInterval

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) measurement has been calculated in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vcc Pm bwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm bwdTotalUserCellsTx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm bwdTotalUserCellsRx01

Access	Read only

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Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm bwdTotalUserCellsTx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm bwdPmCellDiscardCount

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vcc Pm bwdClr0

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE Atmlf Vcc Pm bwdClr01

Access	Read only

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Description	This attribute displays the CLR for CLP=0+1 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP Atmlf Vcc Pm **ArMeasurements (Ar)**

Properties	Operational
Description	This group contains Availability Ratio (AR) measurements of the connection.
Mib	AtmCore

ATTRIBUTE Atmlf Vcc Pm **currentAvailabilityStatus**

Access	Read only
Description	This attribute indicates the current status of the bidirectional connection for purposes of Availability Ratio (AR) computation. The value ***notApplicable*** means AR measurement was not requested on this connection. The value ***available*** means AR is running and considers the connection available (that is, the *arAvailableTime* attribute is being incremented). The value ***unavailable*** means AR measurement was requested but the connection is currently unavailable.
Mib	AtmCore
Values	notApplicable available unavailable
Default	No default

ATTRIBUTE Atmlf Vcc Pm **arTotalTime**

Access	Read only
Description	This attribute indicates the total time used for calculating Availability Ratio (AR) of the bi-directional connection.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vcc Pm **arAvailableTime**

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Access	Read only
Description	This attribute indicates the total time the connection was available.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vcc Pm **arAvailabilityRatio**

Access	Read only
Description	This attribute indicates the ratio of network availability representing the ratio of available time to the total time of the connection.
Mib	AtmCore
Values	Decimal (0.0000000..1.0000000)
Default	No default

COMPONENT Atmlf Vcc **PathTraceRecord (PTRecord)**

Groups	GROUP AtmIf Vcc PTRecord Operational (Oper)
Scope	Device
Description	*AtmIf/n Vcc/x.y PTRecord* *AtmIf/n Vpc/n PTRecord* *AtmIf/n Vpt/n Vcc/x.y PTRecord* This component represents the path trace records for this connection. If the connection is deleted, this component is also deleted.
Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT AtmIf Vcc PTRecord Hop
Common Verbs	Help List Display

GROUP Atmlf Vcc PTRecord **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc PTRecord **status**

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Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmNetworking
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord **timeStamp**

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord **srcPortName**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord **diagCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vcc PTRecord **Hop**

Instance	Decimal (0..200)
Groups	GROUP AtmIf Vcc PTRecord Hop Operational (Oper)

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Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT AtmIf Vcc PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP AtmIf Vcc PTRecord Hop Operational (Oper)

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

ATTRIBUTE AtmIf Vcc PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

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ATTRIBUTE Atmlf Vcc PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)

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Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (12, ASCII)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **portId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **portName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel

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	Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vcc PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vcc PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.

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Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vcc PTRecord Hop **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **blockedNodeId (bNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked.

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This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***

Mib AtmNetworking

Values String (22, Hex)

Default No default

ATTRIBUTE **AtmIf Vcc PTRecord Hop** **blockedLinkPrecedingNodeId (pNodeId)**

Access Read: All
Write: Illegal

Criticality Component

Description This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.

Mib AtmNetworking

Values String (22, Hex)

Default No default

ATTRIBUTE **AtmIf Vcc PTRecord Hop** **blockedLinkPortId (bPortId)**

Access Read: All
Write: Illegal

Criticality Component

Description This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Mib AtmNetworking

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE **AtmIf Vcc PTRecord Hop** **blockedLinkSucceedingNodeId (sNodeId)**

Access Read: All
Write: Illegal

Criticality Component

Description This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the

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	logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vcc PTRecord Hop** **dstVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE **AtmIf Vcc PTRecord Hop** **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Vcc PTRecord Hop** **dstCallReference (dcr)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	no yes
Default	no

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COMPONENT Atmlf Vcc PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	GROUP Atmlf Vcc PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information. All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP Atmlf Vcc PTRecord Hop Vsi Operational (Oper)

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

ATTRIBUTE Atmlf Vcc PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmNetworking
Values	Decimal (0..11)
Default	No default

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ATTRIBUTE Atmlf Vcc PTRecord Hop Vsi **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmNetworking
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Vcc PTRecord Hop Vsi **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmNetworking
Values	String (1..8, Hex)
Default	No default

COMPONENT Atmlf Vcc **RerouteInfo (RerInfo)**

Groups	GROUP Atmlf Vcc RerInfo Operational (Oper) GROUP Atmlf Vcc RerInfo EbrOperational (EOper) GROUP Atmlf Vcc RerInfo LocalOperational (LOper) GROUP Atmlf Vcc RerInfo GlobalOperational (GOper) GROUP Atmlf Vcc RerInfo EbrStatistics (EStats) GROUP Atmlf Vcc RerInfo LocalStatistics (LStats) GROUP Atmlf Vcc RerInfo GlobalStatistics (GStats)
Scope	Device
Description	*Atmlf/n Vcc/vpi.vci RerouteInfo* *Atmlf/n Vpc/vpi RerouteInfo* *Atmlf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo* This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each local domain rerouting

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

Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vcc RerInfo Operational (Oper)

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

ATTRIBUTE AtmIf Vcc RerInfo lastOptimizationMetric (lOptMet)

Access	Read only
Description	This attribute indicates which optimization metric was last used to select a path for the connection segment.
Mib	AtmNetworking
Values	cdv maxCtd aw specifiedPath
Default	No default

GROUP AtmIf Vcc RerInfo EbrOperational (EOper)

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

ATTRIBUTE AtmIf Vcc RerInfo ebrRecoverySubscribed (eRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.

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Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE Atmlf Vcc RerInfo **ebrOptimizationSubscribed (eOptSub)**

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

ATTRIBUTE Atmlf Vcc RerInfo **ebrOptimizationMetricValue (eOptVal)**

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

ATTRIBUTE Atmlf Vcc RerInfo **ebrOptimalMetricValue (eOptMetVal)**

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

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for Specified Path connections.

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

Mib — AtmNetworking

Values — Decimal (0..4294967292)
primary
alternate

Default — No default

ATTRIBUTE AtmIf Vcc RerInfo ebrOptimizationState (eOptSt)

Access — Read only

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

One of the following values is indicated:
optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

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

Mib — AtmNetworking

Values — optimal
recovered
optimized

Default — No default

ATTRIBUTE AtmIf Vcc RerInfo ebrTimeOfLastRecovery (eTime)

Access — Read only

Description — This attribute indicates the date and time of the last EBR connection recovery.

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

Mib — AtmNetworking

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Values	Time (DHMS)
Default	No default

GROUP **AtmIf Vcc RerInfo** **LocalOperational (LOper)**

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

ATTRIBUTE **AtmIf Vcc RerInfo** **localRecoverySubscribed (lRecSub)**

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

ATTRIBUTE **AtmIf Vcc RerInfo** **localOptimizationSubscribed (lOptSub)**

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

ATTRIBUTE **AtmIf Vcc RerInfo** **localOptimizationMetricValue (lOptVal)**

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

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

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

Mib — AtmNetworking

Values — Decimal (0..4294967294)
undefined

Default — No default

ATTRIBUTE AtmIf Vcc RerInfo localOptimalMetricValue (lOptMetVal)

Access — Read only

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

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

Mib — AtmNetworking

Values — Decimal (0..4294967294)
undefined

Default — No default

ATTRIBUTE AtmIf Vcc RerInfo localOptimizationState (lOptSt)

Access — Read only

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

One of the following values is indicated:
optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

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

Mib: AtmNetworking

Values:
optimal
recovered
optimized

Default: No default

ATTRIBUTE AtmIf Vcc RerInfo localTimeOfLastRecovery (lTime)

Access: Read only

Description: This attribute indicates the date and time of the last local connection recovery.

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

Mib: AtmNetworking

Values: Time (DHMS)

Default: No default

GROUP AtmIf Vcc RerInfo GlobalOperational (GOper)

Properties: Operational

Description: This group contains attributes that indicate the global rerouting characteristics of a connection.

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

Mib: AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo globalRecoverySubscribed (gRecSub)

Access: Read only

Description: This attribute indicates whether the connection segment is subscribed to global connection recovery.

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

Mib: AtmNetworking

Values:
no
yes

Default: No default

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ATTRIBUTE AtmIf Vcc RerInfo globalOptimizationSubscribed (gOptSub)

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

ATTRIBUTE AtmIf Vcc RerInfo globalOptimizationMetricValue (gOptVal)

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

ATTRIBUTE AtmIf Vcc RerInfo globalOptimalMetricValue (gOptMetVal)

Access	Read only
Description	This attribute indicates the global optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***globalOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.The ***primary*** and ***alternate*** values are used to denote the optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking

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Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo globalOptimizationState (gOptSt)

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

ATTRIBUTE AtmIf Vcc RerInfo globalTimeOfLastRecovery (gTime)

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

GROUP AtmIf Vcc RerInfo EbrStatistics (EStats)

Properties	Operational

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Description	This group contains statistics related to Ebr rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc RerInfo **totalEbrConnectionRecoveries (eConnRec)**

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

ATTRIBUTE Atmlf Vcc RerInfo **totalEbrPathOptimizations (ePathOpt)**

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

ATTRIBUTE Atmlf Vcc RerInfo **totalEbrOptimizationAttempts (eOptAtt)**

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

GROUP Atmlf Vcc RerInfo **LocalStatistics (LStats)**

Properties	Operational

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Description	This group contains statistics related to local rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc RerInfo **totalLocalConnectionRecoveries (IConnRec)**

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

ATTRIBUTE Atmlf Vcc RerInfo **totalLocalPathOptimizations (IPathOpt)**

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

ATTRIBUTE Atmlf Vcc RerInfo **totalLocalOptimizationAttempts (IOptAtt)**

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

GROUP Atmlf Vcc RerInfo **GlobalStatistics (GStats)**

Properties	Operational

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Description	This group contains statistics related to global rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo totalGlobalConnectionRecoveries (gConnRec)

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

ATTRIBUTE AtmIf Vcc RerInfo totalGlobalPathOptimizations (gPathOpt)

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

ATTRIBUTE AtmIf Vcc RerInfo totalGlobalOptimizationAttempts (gOptAtt)

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

COMPONENT AtmIf Vcc MulticastSourcePvc (Msrc)

Groups	GROUP AtmIf Vcc Msrc Provisioned (Prov) GROUP AtmIf Vcc Msrc Operational (Oper) GROUP AtmIf Vcc Msrc OsiState (State)

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Scope	Device
Description	*AtmIf/n Vcc/vpi.vci MulticastSourcePvc* This component represents the source end of a multicast soft PVC.
Mib	AtmNetworking
Opt. Subcomp.	COMPONENT AtmIf Vcc Msrc MulticastSpvcParty (Party)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vcc Msrc Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *MulticastSourcePvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Msrc callingAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the calling address of the multicast soft PVC. If it is a null string, then the calling address is the address of the current interface (that is, where the multicast soft PVC originates).
Mib	AtmNetworking
Values	String (0..20, Hex)
Default	""

GROUP AtmIf Vcc Msrc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *MulticastSourcePvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Msrc totalParties

Access	Read: All Write: Illegal

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Description	This attribute indicates the total number of parties provisioned on the *MulticastSourcePvc* component.
Mib	AtmNetworking
Values	Decimal (1..300)
Default	No default

ATTRIBUTE Atmlf Vcc Msrc **establishedParties**

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of parties provisioned on the *MulticastSourcePvc* component which are currently up.
Mib	AtmNetworking
Values	Decimal (1..300)
Default	No default

ATTRIBUTE Atmlf Vcc Msrc **expectedParties**

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of parties provisioned on the *MulticastSourcePvc* component which are expected to be up (not locked).
Mib	AtmNetworking
Values	Decimal (1..300)
Default	No default

GROUP Atmlf Vcc Msrc **OsiState (State)**

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

ATTRIBUTE Atmlf Vcc Msrc **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock*

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command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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

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

Mib — AtmNetworking

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

Default — unlocked

ATTRIBUTE Atmlf Vcc Msrc **operationalState (osiOper)**

Access — Read only

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

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

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

Mib — AtmNetworking

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Atmlf Vcc Msrc **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	AtmNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT Atmlf Vcc Msrc **MulticastSpvcParty (Party)**

Instance	Decimal (1..300)
Groups	GROUP Atmlf Vcc Msrc Party Provisioned (Prov) GROUP Atmlf Vcc Msrc Party Operational (Oper) GROUP Atmlf Vcc Msrc Party OsiState (State)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci MulticastSourcePvc MulticastSourcePvcParty/n* This component represents a party of a multicast soft PVC.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vcc Msrc Party **Provisioned (Prov)**

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *AtmMsrcPvcParty* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Msrc Party **calledAddress**

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the called (remote) address of the multicast soft PVC party.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vcc Msrc Party **calledVpiVci**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the called (remote) VPI and VCI of the multicast soft PVC party.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

GROUP Atmlf Vcc Msrc Party **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *AtmMsrcPvcParty* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vcc Msrc Party **retryCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed attempts to set up the multicast soft PVC party since the last time the connection failed.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vcc Msrc Party **lastFailureCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code value of the last signalling message which contained the CAUSE information element. If there has been no previous failure, the value for this attribute is 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vcc Msrc Party **lastFailureDiagCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the diagnostic code associated with the *lastFailureCauseCode* attribute. If the diagnostic code was not provided

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	with that CAUSE information element, or if there has been no previous failure, this attribute is empty.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

GROUP Atmlf Vcc Msrc Party **OsiState (State)**

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

ATTRIBUTE Atmlf Vcc Msrc Party **adminState (osiAdmin)**

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

ATTRIBUTE Atmlf Vcc Msrc Party **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

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

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

Mib: AtmNetworking

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Atmlf Vcc Msrc Party **usageState (osiUsage)**

Access: Read only

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

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmNetworking

Values: idle
active (activ)
busy

Default: idle

COMPONENT Atmlf **UserNetworkInterface (Uni)**

Groups: GROUP Atmlf Uni Provisioned (Prov)
GROUP Atmlf Uni Operational (Oper)
GROUP Atmlf Uni AccountingOptions (AcctOpt)

Scope: Device

Description: *Atmlf/n Uni*
This component represents an ATM UNI interface. If this component is provisioned the *Aini*, *Iisp,* or *Pnni* component can not be provisioned under

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	that *AtmIf* component. If this component is deleted, then all associated *Vcc* components are deleted.
Mib	AtmUni
Subcomponents	COMPONENT AtmIf Uni Ilmi COMPONENT AtmIf Uni Signalling (Sig)
Opt. Subcomp.	COMPONENT AtmIf Uni CallingAddressScreening (CallingAScr) COMPONENT AtmIf Uni CalledAddressScreening (CalledAScr) COMPONENT AtmIf Uni PathTraceFilter (Ptf) COMPONENT AtmIf Uni ServiceTrace (SrvTrace) COMPONENT AtmIf Uni Reroute
Dyn. Subcomp.	COMPONENT AtmIf Uni PathTraceTestConnection (Ptt)
Dyn. Subcomp.	COMPONENT AtmIf Uni Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Uni* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni version

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies which specification the UNI complies with. The options are ATM FORUM 3.0, ATM FORUM 3.1 or ATM FORUM 4.0. If this attribute is changed then all switched *Vcc* components in this interface are cleared due to the fact that the two versions are incompatible.
Mib	AtmUni
Values	atmForum30 atmForum31 atmForum40
Default	atmForum40

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ATTRIBUTE AtmIf Uni **side**

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmUni
Values	network user
Default	network

ATTRIBUTE AtmIf Uni **softPvpAndPvcRetryPeriod**

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmUni
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Uni **softPvpAndPvcHoldOffTime (sHoldOffTime)**

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmUni
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE AtmIf Uni **loopPrevention**

Access	Read: All Write: Configuration

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Description	This attribute specifies whether loop prevention is in effect on this interface. When the value is ***enabled***, incoming calls on this interface cannot be routed back out the same interface. When the value is ***disabled***, routing of incoming calls back out the same interface is permitted. The recommended value is ***enabled***. The value ***disabled*** should only be used if routing of incoming calls back out over this interface is actually required. As an example, the value ***disabled*** might be needed if the interface is connected to an end-user multiplexing device which has no routing capability. Note that setting the value to ***enabled*** prevents only routing loops which involve two network nodes.
Mib	AtmUni
Values	disabled enabled
Default	enabled

ATTRIBUTE AtmIf Uni interfaceType

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the *Type* of the interface, ***private*** or ***public***.
Mib	AtmUni
Values	public private
Default	private

GROUP AtmIf Uni Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Uni* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni macAddress

Access	Read only
Description	This attribute indicates the MAC address of the port, which is used for address registration of the user side as the default ESI.
Mib	AtmUni

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Values	String (12, ASCII)
Default	No default

GROUP Atmlf Uni AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmUni

ATTRIBUTE Atmlf Uni accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit*** or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	AtmUni
Set of	bill test study audit force
Default	No default

ATTRIBUTE Atmlf Uni accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be

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marked as ***terminating***.

If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.

Mib	AtmUni
Values	origTerm intermediate
Default	origTerm

ATTRIBUTE AtmIf Uni accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmUni
Values	Decimal (0..255)
Default	0

ATTRIBUTE AtmIf Uni serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmUni
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf Uni Ilmi

Groups	GROUP AtmIf Uni Ilmi OsiState (State) GROUP AtmIf Uni Ilmi Provisioned (Prov) GROUP AtmIf Uni Ilmi Statistics (Stats)
Scope	Device

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Description	*AtmIf/n Uni Ilmi* This component represents the Interim Local Management Interface (ILMI) protocol on the interface.
Mib	AtmUni
Opt. Subcomp.	COMPONENT AtmIf Uni Ilmi Esi
Common Verbs	Help List Display

GROUP AtmIf Uni Ilmi OsiState (State)

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

ATTRIBUTE AtmIf Uni Ilmi adminState (osiAdmin)

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

ATTRIBUTE AtmIf Uni Ilmi operationalState (osiOper)

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

ATTRIBUTE Atmlf Uni Ilmi **usageState (osiUsage)**

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

GROUP Atmlf Uni Ilmi **Provisioned (Prov)**

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Ilmi* component.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Ilmi **vci**

Access	Read: All Write: All
Criticality	Component

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Description	This attribute identifies the ILMI channel number.
Mib	AtmUni
Values	Decimal (0..65535)
Default	16

ATTRIBUTE AtmIf Uni Ilmi operatingMode

Access	Read: All Write: All
Criticality	Component
Description	This attribute is used to enable/disable the ILMI protocol. ***addressRegEnabled*** indicates that the ILMI address registration protocol is enabled. ***addressRegDisabled*** indicates that the ILMI address registration protocol is disabled. ***ilmiDisabled*** indicates that all of ILMI is disabled.
Mib	AtmUni
Values	addressRegEnabled addressRegDisabled ilmiDisabled
Default	addressRegEnabled

ATTRIBUTE AtmIf Uni Ilmi prefixToRegister

Access	Read: All Write: All
Description	This attribute is a list of zero or more addresses. If the *side* attribute in the *Uni* component is set to ***user***, then this attribute must be empty; if the *side* attribute is set to ***network***, then this attribute is a list of prefixes.This attribute represents a list of prefix addresses (26 digits) that are sent to the user side. If no prefixes are entered, then the *nodeAddr*ess attribute in the *AtmCallRouter* component is used for address registration.
Mib	AtmUni
List of	String (26, ASCII)
List Size	10
Default	No default

GROUP AtmIf Uni Ilmi Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics for the *AtmIlmi* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ilmi txPdus

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Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted ILMI PDUs. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ilmi **rxPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of received ILMI PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ilmi **rxBadPdusDiscarded**

Access	Read: All Write: Illegal
Description	This attribute counts the number of received ILMI PDUs that were discarded due to invalid SNMP format. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Uni Ilmi **Esi**

Instance	String (6, Hex)
Groups	GROUP AtmIf Uni Ilmi Esi Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Ilmi Esi* This attribute represents the End System Identifier (ESI) associated with this UNI. If the *side* attribute of the *Uni* component is set to ***network*** then there should be no *Esi* components provisioned. If the *side* attribute is set to ***user***, then the instance of the *Esi* component is a 12 hex-digit user-part

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address, used to compose full ATM addresses that are registered with the network side.

Mib AtmUni

Common Verbs
Help
List
Display
Add
DELete

GROUP Atmlf Uni Ilmi Esi **Provisioned (Prov)**

Properties Provisioned

Description This attribute group contains the provisionable attributes for the *Esi* component.

Mib AtmUni

ATTRIBUTE Atmlf Uni Ilmi Esi **uniScope**

Access
Read: All
Write: All

Criticality Component

Description This attribute defines the UNI address membership scope for all addresses created using this ESI. It specifies the inclusive routing hierarchy in which the address is to be known. This scope is used during ILMI dynamic address registration procedures.

The ***useDefaultScope*** value maps to ***localNetwork*** for ATM group addresses, and to ***global*** for individual addresses.

The value of this attribute is ignored for UNI 3.x interfaces.

Mib AtmUni

Values
useDefaultScope (def)
localNetwork (ln)
localPlusOne (lpo)
localPlusTwo (lpt)
siteMinusOne (smo)
intraSite (is)
intraSitePlusOne (ispo)
organizationMinusOne (omo)
intraOrganization (io)
organizationPlusOne (opo)
communityMinusOne (cmo)
intraCommunity (ic)
communityPlusOne (cpo)
regional (r)

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	interRegional (ir) global (g)
Default	useDefaultScope

COMPONENT Atmlf Uni Signalling (Sig)

Groups	GROUP AtmIf Uni Sig Provisioned (Prov) GROUP AtmIf Uni Sig OsiState (State) GROUP AtmIf Uni Sig Operational (Oper) GROUP AtmIf Uni Sig Statistics (Stats)
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmUni
Opt. Subcomp.	COMPONENT AtmIf Uni Sig VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP Atmlf Uni Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmUni
Values	Decimal (0..65535)
Default	5

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ATTRIBUTE AtmIf Uni Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmUni
Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Uni Sig operatingMode

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmUni
Values	normal provisionedOnly
Default	normal

GROUP AtmIf Uni Sig OsiState (State)

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

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ATTRIBUTE Atmlf Uni Sig **adminState (osiAdmin)**

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

ATTRIBUTE Atmlf Uni Sig **operationalState (osiOper)**

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

ATTRIBUTE Atmlf Uni Sig **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	AtmUni
Values	idle active (activ) busy
Default	idle

GROUP Atmlf Uni Sig **Operational (Oper)**

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Sig **lastTxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Uni Sig **lastTxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmUni
Values	Hex (H.0..H.ff)
Default	No default

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ATTRIBUTE Atmlf Uni Sig **lastRxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Uni Sig **lastRxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmUni
Values	Hex (H.0..H.ff)
Default	No default

GROUP Atmlf Uni Sig **Statistics (Stats)**

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Sig **peakConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Sig **successfulConnections**

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Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Sig **failedConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Sig **txPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Sig **rxPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Sig **currentPmpConnections**

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Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig **peakPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig **successfulPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig **failedPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig **currentConnections**

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Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to-point connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Uni Sig VirtualChannelDescriptor (Vcd)

Groups	GROUP AtmIf Uni Sig Vcd Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmUni
Common Verbs	Help List Display Add DELete

GROUP Atmlf Uni Sig Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component

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Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmUni
Values	3 6 7 8
Default	6
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Uni Sig Vcd** **atmServiceCategory (service)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high

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degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmUni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Uni Sig Vcd weight

Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmUni

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Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Uni Sig Vcd **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmUni
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Uni Sig Vcd **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping

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enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib	AtmUni
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Uni Sig Vcd **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*. When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmUni
Values	common sameAsCa
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Uni Sig Vcd **usageParameterControl (upc)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmUni
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Uni Sig Vcd trafficDescParm (tdp)

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any

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value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

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

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

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

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

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COMPONENT Atmlf Uni Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate registered default]
Groups	GROUP Atmlf Uni Addr Operational (Oper)
Scope	Device
Description	*Atmlf/n Uni Address/address,type* *Atmlf/n Vpt/m Uni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wild-card ('?'), and a type. The type identifies whether the Address component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address. The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses. Virtual interfaces do not have addresses of type ***default***. The wild-card is only valid for provisioned addresses. If the address is a single wild-card, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wild-card static address, then the choice is made using a round robin algorithm. The round robin algorithm first tries the primary routes. If none of the primary routes succeed, then the alternate routes are tried. Note that the ***UniInfo*** and ***PnniInfo*** sub-components are mutually exclusive. Only one of these may be added under the ***Atmlf Uni Addr*** component.
Mib	AtmUni
Opt. Subcomp.	COMPONENT Atmlf Uni Addr TerminateSPvpAndSPvc (TermSP) COMPONENT Atmlf Uni Addr PnniInfo COMPONENT Atmlf Uni Addr UniInfo
Common Verbs	Help List Display Add DELete

GROUP Atmlf Uni Addr Operational (Oper)

Properties	Operational

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Description	This attribute group contains the operational attributes for the *AtmIf/n Uni Address* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Addr reachability (reach)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni
Values	internal exterior
Default	No default

ATTRIBUTE AtmIf Uni Addr pnniScope

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. This attribute will have the value of -1 if this node does not participate in a PNNI hierarchy, or if this address was provisioned with a UNI membership scope, rather than a PNNI routing level.
Mib	AtmUni
Values	Signed (-1..104)
Default	No default

ATTRIBUTE AtmIf Uni Addr uniScope

Access	Read: All Write: Illegal
Description	This attribute indicates the UNI membership scope of the ATM address. It specifies the inclusive routing hierarchy in which the address is known. This attribute will have the value 0 if the address was provisioned with a PNNI routing level rather than a UNI membership scope.
Mib	AtmUni

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Values	scopeNotAvailable localNetwork localPlusOne localPlusTwo siteMinusOne intraSite intraSitePlusOne organizationMinusOne intraOrganization organizationPlusOne communityMinusOne intraCommunity communityPlusOne regional interRegional global
Default	No default

COMPONENT AtmIf Uni Addr TerminateSPvpAndSPvc (TermSP)

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc* The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Uni Addr PnniInfo

Groups	GROUP AtmIf Uni Addr PnniInfo Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Aini Addr/address,type PnniInfo* *AtmIf/n Iisp Addr/address,type PnniInfo* *AtmIf/n Uni Addr/address,type PnniInfo*

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AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.

Mib AtmUni

Common Verbs
Help
List
Display
Add
DELete

GROUP **AtmIf Uni Addr PnniInfo** **Provisioned (Prov)**

Properties Provisioned

Description This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.

Mib AtmUni

ATTRIBUTE **AtmIf Uni Addr PnniInfo** **scope**

Access Read: All
Write: All

Criticality Component

Description This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.

Mib AtmUni

Values Signed (-1..104)

Default -1

ATTRIBUTE **AtmIf Uni Addr PnniInfo** **reachability (reach)**

Access Read: All
Write: All

Criticality Component

Description This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is

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directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib	AtmUni
Values	internal exterior
Default	internal

COMPONENT AtmIf Uni Addr UniInfo

Groups	GROUP AtmIf Uni Addr UniInfo Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Addr/address,type UniInfo* *AtmIf/n Vpt/m Uni Addr/address,type UniInfo* This component contains the provisioned information associated with the ATM address and related to the UNI. This component appears only under provisioned *Uni Address* components. This component may not appear together with the *Atmif Uni Addr PnniInfo* component, they are mutually exclusive.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni Addr UniInfo Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to a UNI address for a *UniInfo* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Addr UniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the address UNI membership scope. It specifies the inclusive routing hierarchy in which the address will be known. The ***useDefaultScope*** value maps to ***localNetwork*** for ATM group

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addresses, and to ***global*** for individual addresses.

Note that this value is ignored for UNI 3.x interfaces.

Mib	AtmUni
Values	useDefaultScope (def) localNetwork (ln) localPlusOne (lpo) localPlusTwo (lpt) siteMinusOne (smo) intraSite (is) intraSitePlusOne (ispo) organizationMinusOne (omo) intraOrganization (io) organizationPlusOne (opo) communityMinusOne (cmo) intraCommunity (ic) communityPlusOne (cpo) regional (r) interRegional (ir) global (g)
Default	useDefaultScope

ATTRIBUTE **AtmIf Uni Addr UniInfo** **pnniReachability (reach)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni
Values	internal exterior
Default	internal

COMPONENT **AtmIf Uni** **CallingAddressScreening (CallingAScr)**

Groups	GROUP AtmIf Uni CallingAScr Provisioned (Prov) GROUP AtmIf Uni CallingAScr Statistics (Stat)
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n Iisp CallingAddressScreening*

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This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not provisioned, all call requests are accepted and no calling address screening takes place.

Mib: AtmUni

Opt. Subcomp.: COMPONENT AtmIf Uni CallingAScr Address (Addr)

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Uni CallingAScr Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes for the *CallingAScr* component.

Mib: AtmUni

ATTRIBUTE AtmIf Uni CallingAScr adminStatus

Access:
Read: All
Write: All

Description: This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***.

If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected

If the value is ***disabled***, no calling address screening is performed.

Mib: AtmUni

Values:
enabled
disabled

Default: disabled

ATTRIBUTE AtmIf Uni CallingAScr defaultInsertionAddress (defInsAddr)

Access:
Read: All
Write: All

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Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	AtmUni
Values	String (0..20, Hex)
Default	""

GROUP **AtmIf Uni CallingAScr** **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmUni

ATTRIBUTE **AtmIf Uni CallingAScr** **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf Uni CallingAScr** **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf Uni CallingAScr** **unmatchedCalls**

Access	Read: All Write: Illegal

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Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Uni CallingAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Uni CalledAddressScreening (CalledAScr)

Groups	GROUP AtmIf Uni CalledAScr Provisioned (Prov) GROUP AtmIf Uni CalledAScr Statistics (Stat)
Scope	Device

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Description	*AtmIf/n Aini CalledAddressScreening* *AtmIf/n Uni CalledAddressScreening* *AtmIf/n Iisp CalledAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.
Mib	AtmUni
Opt. Subcomp.	COMPONENT AtmIf Uni CalledAScr Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni CalledAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CalledAScr* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni CalledAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***. If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected. If the value is ***disabled***, no called address screening is performed.
Mib	AtmUni
Values	enabled disabled
Default	disabled

GROUP AtmIf Uni CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.

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Mib	AtmUni

ATTRIBUTE Atmlf Uni CalledAScr **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Uni CalledAScr **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Uni CalledAScr **unmatchedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT Atmlf Uni CalledAScr **Address (Addr)**

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device

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Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

COMPONENT Atmlf Uni PathTraceFilter (Ptf)

Groups	GROUP AtmIf Uni Ptf Criteria GROUP AtmIf Uni Ptf Operational (Oper) GROUP AtmIf Uni Ptf RecordControl (Record)
Scope	Device
Description	*AtmIf/n Aini PathTraceFilter* *AtmIf/n Iisp PathTraceFilter* *AtmIf/n Uni PathTraceFilter* *AtmIf/n Pnni PathTraceFilter* *AtmIf/n Vpt/vpi Aini PathTraceFilter* *AtmIf/n Vpt/vpi Iisp PathTraceFilter* *AtmIf/n Vpt/vpi Uni PathTraceFilter* *AtmIf/n Vpt/vpi Pnni PathTraceFilter* This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced. When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop,* and *Clear* verbs. When the *Start*

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verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib: AtmUni

Dyn. Subcomp.: COMPONENT AtmIf Uni Ptf PathTraceRecord (PTRecord)

Common Verbs:
Help
List
Display
Add
DELete

VERB START **AtmIf Uni Ptf**

Impact: Service

Description:

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

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VERB STOP Atmlf Uni Ptf

Impact	Service
Description	*STOP AtmIf/n Aini PathTraceFilter* *STOP AtmIf/n Iisp PathTraceFilter* *STOP AtmIf/n Uni PathTraceFilter* *STOP AtmIf/n Pnni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Aini PathTraceFilter* *STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter* *STOP AtmIf/n Vpt/vpi Uni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command causes the filter to stop, but keeps the trace records.

VERB CLEAR Atmlf Uni Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP Atmlf Uni Ptf **Criteria**

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Ptf **traceInfo (tInfo)**

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included.

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callRef: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included.

Basic trace information, such as node and port identifiers, are always included.

Mib: AtmUni

Set of: crankBack, connId, callRef

Default: (crankBack, connId, callRef)

ATTRIBUTE AtmIf Uni Ptf calledPartyPrefix (cldPref)

Access: Read: All, Write: All

Description: This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced.

An empty string matches any address.

Mib: AtmUni

Values: String (0..20, Hex)

Default: No default

ATTRIBUTE AtmIf Uni Ptf callingPartyPrefix (clgPref)

Access: Read: All, Write: All

Description: This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced.

An empty string matches any address.

Mib: AtmUni

Values: String (0..20, Hex)

Default: No default

ATTRIBUTE AtmIf Uni Ptf connectionType (type)

Access: Read: All, Write: All

Description: This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in

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the filter match successfully, the call is traced.

Mib	AtmUni
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE Atmlf Uni Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE Atmlf Uni Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP Atmlf Uni Ptf Operational (Oper)

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

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ATTRIBUTE Atmlf Uni Ptf **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmUni
Values	active inactive
Default	inactive

ATTRIBUTE Atmlf Uni Ptf **recordCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	AtmUni
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Atmlf Uni Ptf **matchedConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmUni
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Atmlf Uni Ptf **elapsedTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.

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Mib	AtmUni
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE Atmlf Uni Ptf **timeRemaining**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmUni
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP Atmlf Uni Ptf **RecordControl (Record)**

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Ptf **traceTimeout**

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmUni
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE Atmlf Uni Ptf **maxTraceRecords (mRecords)**

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.

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Mib	AtmUni
Values	Decimal (1..200)
Default	2

COMPONENT Atmlf Uni Ptf PathTraceRecord (PTRecord)

Groups	GROUP AtmIf Uni Ptf PTRecord Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord* This component represents the path trace record for the last failed connection against this filter.
Mib	AtmUni
Dyn. Subcomp.	COMPONENT AtmIf Uni Ptf PTRecord Hop
Common Verbs	Help List Display

GROUP Atmlf Uni Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops.

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***Exceeded message length limitations**:* The message length exceeded the maximum allowed size.

Mib	AtmUni
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord **timeStamp**

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmUni
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmUni
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmUni
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord **causeCode**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord **diagCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmUni
Values	String (0..8, ASCII)
Default	No default

COMPONENT Atmlf Uni Ptf PTRecord **Hop**

Instance	Decimal (0..200)
Groups	GROUP AtmIf Uni Ptf PTRecord Hop Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record.

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Depending on the hops, different attributes are present.

Mib	AtmUni
Dyn. Subcomp.	COMPONENT AtmIf Uni Ptf PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP AtmIf Uni Ptf PTRecord Hop Operational (Oper)

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

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmUni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmUni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **nodeName**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	String (12, ASCII)
Default	No default

ATTRIBUTE **AtmIf Uni Ptf PTRecord Hop** **portId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Uni Ptf PTRecord Hop** **portName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	String (55, ASCII)
Default	No default

ATTRIBUTE **AtmIf Uni Ptf PTRecord Hop** **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.

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Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information.

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This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.

Mib — AtmUni

Values — Decimal (0..1000)

Default — No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **blockedTransitType (type)**

Access — Read: All
Write: Illegal

Criticality — Component

Description — This attribute indicates the blocked transit type.

This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.

Mib — AtmUni

Values — Succeeding end blocked
Blocked node
Blocked link

Default — No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **blockedNodeId (bNodeId)**

Access — Read: All
Write: Illegal

Criticality — Component

Description — This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***

Mib — AtmUni

Values — String (22, Hex)

Default — No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **blockedLinkPrecedingNodeId (pNodeId)**

Access — Read: All
Write: Illegal

Criticality — Component

Description — This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

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This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.

Mib AtmUni

Values String (22, Hex)

Default No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **blockedLinkPortId (bPortId)**

Access Read: All
Write: Illegal

Criticality Component

Description This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Mib AtmUni

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **blockedLinkSucceedingNodeId (sNodeId)**

Access Read: All
Write: Illegal

Criticality Component

Description This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Mib AtmUni

Values String (22, Hex)

Default No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **dstVpiVci**

Access Read: All
Write: Illegal

Criticality Component

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Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmUni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **dstEndPointReference (depr)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmUni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	no yes
Default	no

COMPONENT Atmlf Uni Ptf PTRecord Hop **VendorSpecificInfo (Vsi)**

Instance	Decimal (0..10)
Groups	GROUP AtmIf Uni Ptf PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other

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than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.

Mib	AtmUni
Common Verbs	Help List Display

GROUP Atmlf Uni Ptf PTRecord Hop Vsi Operational (Oper)

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

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmUni
Values	Decimal (0..11)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmUni
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Uni Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.

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Mib	AtmUni
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Uni PathTraceTestConnection (Ptt)

Groups	GROUP AtmIf Uni Ptt Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection* *AtmIf/n Vpt/vpi Aini PathTraceTestConnection* *AtmIf/n Vpt/vpi Iisp PathTraceTestConnection* *AtmIf/n Vpt/vpi Uni PathTraceTestConnection* *AtmIf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.
Mib	AtmUni
Common Verbs	Help List Display

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VERB TRACE Atmlf Uni Ptt

Impact	Passive
Description	*TRACE AtmIf/n Aini AtmPathTraceTest* *TRACE AtmIf/n Iisp AtmPathTraceTest* *TRACE AtmIf/n Uni AtmPathTraceTest* *TRACE AtmIf/n Pnni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest* This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node. Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf Uni Ptt **Operational (Oper)**

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

ATTRIBUTE Atmlf Uni Ptt **traceCrankback**

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmUni
Values	no yes
Default	no

ATTRIBUTE Atmlf Uni Ptt **txTrafficDescType (txTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.

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Mib	AtmUni
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE Atmlf Uni Ptt **rxTrafficDescType (rxTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	AtmUni
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE Atmlf Uni Ptt **atmServiceCategory (service)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

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

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

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

ATTRIBUTE **Atmlf Uni Ptt** **fwdQosClass (fwdQos)**

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

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Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

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

Mib: AtmUni

Values:
0
1
2
3
4

Default: 0

ATTRIBUTE Atmlf Uni Ptt bwdQosClass (bwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the backward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

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

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

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

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

Mib: AtmUni

Values:
0
1
2
3

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	4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE Atmlf Uni Ptt **bearerClassBbc (bcBbc)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.
Mib	AtmUni
Values	a c x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Uni Ptt **transferCapabilityBbc (tcBbc)**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. UNI 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> ***0***: NoIndication, NoIndication ***1***: NoIndication, yes ***2***: NoIndication, no ***5***: CBR, yes ***8***: VBR, NoIndication ***9***: VBR, yes ***10***: VBR, no ***NotApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data. The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing. The value ***yes*** for end-to-end timing indicates that end-to-end timing is required. The value ***no*** for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmUni
Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory

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Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Uni Ptt **clippingBbc (cBbc)**

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

ATTRIBUTE Atmlf Uni Ptt **bestEffort**

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

ATTRIBUTE Atmlf Uni Ptt **testCalledAddress**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmUni
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Uni Ptt **testCalledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Uni Ptt **testSpecifiedPath**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmUni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Uni Ptt **bwdQosParameters (bqp)**

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element.

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The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element.

The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE Atmlf Uni Ptt **fwdQosParameters (fqp)**

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

ATTRIBUTE Atmlf Uni Ptt **txTrafficDescParm (txTdp)**

Access	Read: All Write: All

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Description

This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled.

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

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

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

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

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

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the

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requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

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

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

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

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

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

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

ATTRIBUTE Atmlf Uni Ptt rxTrafficDescParm (rxTdp)

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate

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(PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC).

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

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

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

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

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

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

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

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

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the

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ConnectionAdministrator defaults for the particular *atmServiceCategory* of this connection.

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

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

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

Parameter 5 of the *rxTrafficDescParm* is always unused.

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

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

COMPONENT AtmIf Uni ServiceTrace (SrvTrace)

Groups	GROUP AtmIf Uni SrvTrace Operational
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and

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atmTraceRcvr features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a "Receiver Not Supported" message.

Mib — AtmUniTrace

Common Verbs — Help, List, Display, Add, DELete

VERB Start **AtmIf Uni SrvTrace**

Impact — Service

Description — *Start AtmIf/n [Vpt/m] Uni ServiceTrace*
Start AtmIf/n [Vpt/m] Iisp ServiceTrace
Start AtmIf/n [Vpt/m] Pnni ServiceTrace
Start AtmIf/n [Vpt/m] Aini ServiceTrace
This command starts a service trace session.

VERB Stop **AtmIf Uni SrvTrace**

Impact — Service

Description — *Stop AtmIf/n [Vpt/m] Uni ServiceTrace*
Stop AtmIf/n [Vpt/m] Iisp ServiceTrace
Stop AtmIf/n [Vpt/m] Pnni ServiceTrace
Stop AtmIf/n [Vpt/m] Aini ServiceTrace
This command stops a service trace session.

GROUP **AtmIf Uni SrvTrace** **Operational**

Properties — Operational

Description — This group provides the operational attributes for the *SrvTrace* component.

Mib — AtmUniTrace

ATTRIBUTE **AtmIf Uni SrvTrace** **receiverName (rcvr)**

Access — Read and write

Description — This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.

Mib — AtmUniTrace

Values — String (0..8, ASCII)

Default — No default

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ATTRIBUTE AtmIf Uni SrvTrace **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmUniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Uni SrvTrace **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmUniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Uni SrvTrace **session**

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmUniTrace
Values	The name of the component
Default	No default

COMPONENT AtmIf Uni **Reroute**

Groups	GROUP AtmIf Uni Reroute LocalOperational (LOper) GROUP AtmIf Uni Reroute GlobalOperational (GOper) GROUP AtmIf Uni Reroute Statistics (Stats)
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute*

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AtmIf/n Uni Reroute
AtmIf/n Vpt/vpi Iisp Reroute
AtmIf/n Vpt/vpi Aini Reroute
AtmIf/n Vpt/vpi Uni Reroute

This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.

Mib — AtmUni

Subcomponents — COMPONENT AtmIf Uni Reroute Ov

Common Verbs — Help, List, Display, Add, DELete

VERB OPTIMIZE **AtmIf Uni Reroute**

Impact — Service

Description

Optimize [-all] AtmIf/n Uni Reroute
Optimize [-all] AtmIf/n Aini Reroute
Optimize [-all] AtmIf/n Iisp Reroute
Optimize [-all] AtmIf/n Vpt/vpi Uni Reroute
Optimize [-all] AtmIf/n Vpt/vpi Aini Reroute
Optimize [-all] AtmIf/n Vpt/vpi Iisp Reroute

This command triggers path optimization for the connection segments managed by the Reroute component.

By default, only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection.

The -all option causes all connection segments subscribed to path optimization to be considered.

Using the Optimize command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP **AtmIf Uni Reroute** **LocalOperational (LOper)**

Properties — Operational

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Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Reroute **localSubscribedConnections (lsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Reroute **localEligibleRecoveredCon (lerc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Reroute **localIneligibleRecoveredCon (lirc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Reroute **localLastRrCauseCode (lrrcc)**

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

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ATTRIBUTE AtmIf Uni Reroute **localPathsOptimized (lPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Uni Reroute **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Reroute **globalSubscribedConnections (gsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute **globalEligibleRecoveredCon (gerc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute **globalIneligibleRecoveredCon (girc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmUni

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Reroute **globalLastRrCauseCode (grrcc)**

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

ATTRIBUTE Atmlf Uni Reroute **globalPathsOptimized (gPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Uni Reroute **Statistics (Stats)**

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Reroute **totalLocalConnectionRecoveries (tLConRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Uni Reroute **totalLocalFailedRecoveries (lFailedRec)**

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can

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not be established. The counter wraps to zero when the maximum value is exceeded.

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

ATTRIBUTE AtmIf Uni Reroute **totalLocalPathOptimizations (tLPathOpt)**

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute **totalGlobalConnectionRecoveries (tGConRec)**

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute **totalGlobalFailedRecoveries (gFailedRec)**

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute **totalGlobalPathOptimizations (tGPathOpt)**

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a

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	better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Uni Reroute Ov

Groups	GROUP AtmIf Uni Reroute Ov Provisioned (Prov) GROUP AtmIf Uni Reroute Ov LocalProvisioned (LProv) GROUP AtmIf Uni Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmUni
Common Verbs	Help List Display

GROUP AtmIf Uni Reroute Ov Provisioned (Prov)

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

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ATTRIBUTE AtmIf Uni Reroute Ov **protocol**

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

ATTRIBUTE AtmIf Uni Reroute Ov **numOptAttempts**

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are

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eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib — AtmUni

Values — Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default — sameAs

ATTRIBUTE Atmlf Uni Reroute Ov **moduleOptimizationConnections**

Access — Read and write

Description — This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component.

One of the following values can be specified:
sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib — AtmUni

Values — none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default — sameAsARtgPnniReroute

ATTRIBUTE Atmlf Uni Reroute Ov **switchoverMechanism**

Access — Read and write

Description — This attribute specifies the mechanism used for switchover of a rerouted connection segment.

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One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum "Domain based Rerouting" specification is used for switchover. This value ensures interoperability with other vendors' equipment running ATM Forum "Domain based Rerouting".
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmUni

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP Atmlf Uni Reroute Ov **LocalProvisioned (LProv)**

Properties: Provisioned

Description: This group contains the provisionable attributes for EBR and local rerouting protocols.

Mib: AtmUni

ATTRIBUTE Atmlf Uni Reroute Ov **localConnectionRecoverySubscr (lConRec)**

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.

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transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib — AtmUni

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Uni Reroute Ov **localPathOptimizationSubscr (lPathOpt)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib — AtmUni

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

GROUP Atmlf Uni Reroute Ov **GlobalProvisioned (GProv)**

Properties — Provisioned

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Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	AtmUni

ATTRIBUTE Atmlf Uni Reroute Ov **globalConnectionRecoverySubscr (gConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute***: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values. ***svcSvp***: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery. ***sourceSpvcSpvp***: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery. ***transitSpvcSpvp***: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
Mib	AtmUni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Uni Reroute Ov **globalPathOptimizationSubscr (gPathOpt)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only

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affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib	AtmUni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT Atmlf lisp

Groups	GROUP AtmIf lisp Provisioned (Prov) GROUP AtmIf lisp AccountingOptions (AcctOpt)
Scope	Device
Description	*AtmIf/n lisp* This component represents an ATM Interim Inter-switch Signaling Protocol (IISP) interface. If this component is provisioned, the *Uni*, *Aini,* or *Pnni* component can not be provisioned under the same *AtmIf* component. If

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	this component is deleted, then all associated *Vcc* components are deleted.
Mib	Atmlisp
Subcomponents	COMPONENT AtmIf lisp Signalling (Sig)
Opt. Subcomp.	COMPONENT AtmIf lisp CallingAddressScreening (CallingAScr) COMPONENT AtmIf lisp CalledAddressScreening (CalledAScr) COMPONENT AtmIf lisp PathTraceFilter (Ptf) COMPONENT AtmIf lisp ServiceTrace (SrvTrace) COMPONENT AtmIf lisp Reroute
Dyn. Subcomp.	COMPONENT AtmIf lisp PathTraceTestConnection (Ptt)
Dyn. Subcomp.	COMPONENT AtmIf lisp Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP Atmlf lisp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *lisp* component.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp version

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which specification the IISP interface complies with. The options are ***iisp10Sig30*** which refers to IISP version 1.0 with 3.0 signaling and ***iisp10Sig31*** which refers to IISP version 1.0 with 3.1 signaling. If this attribute is changed, all switched *Vcc* components in this interface are cleared due to the fact that the two versions are incompatible.
Mib	Atmlisp
Values	iisp10Sig30 iisp10Sig31
Default	iisp10Sig31

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ATTRIBUTE Atmlf lisp side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	Atmlisp
Values	networkSide userSide
Default	networkSide

ATTRIBUTE Atmlf lisp softPvpAndPvcRetryPeriod (sRetryPeriod)

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	Atmlisp
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE Atmlf lisp softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	Atmlisp
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE Atmlf lisp interDomainCrankback

Access	Read: All Write: All

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Description	This attribute specifies whether the ATM Routing System inserts a Crankback information element (IE) when hop-by-hop routing crankback fails in a neighboring domain and this node is the DTL terminating node of the call. By default, the ATM Routing System, when behaving as a DTL terminating node of a call, only inserts a Crankback IE if the routing system fails to find a static routing port that matches the called address. If this attribute is set to enabled, then a Crankback IE is also inserted when hop-by-hop crankback fails. This attribute may be provisioned on IISP links that connect two PNNI domains. Note that the cause codes that trigger the insertion of the Crankback IE are the same as those that apply to PNNI crankback normally. Not all of these cause codes apply to hop-by-hop routing. The insertion of a Crankback IE can cause extra call setup attempts in certain configurations such as PNNI domains interconnected by IISP links.
Mib	AtmIisp
Values	disabled enabled
Default	disabled

GROUP **Atmlf lisp** **AccountingOptions (AcctOpt)**

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmIisp

ATTRIBUTE **Atmlf lisp** **accountCollection (aco)**

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed.

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The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.

Mib: Atmlisp

Set of:
bill
test
study
audit
force

Default: No default

ATTRIBUTE Atmlf lisp accountConnectionType (act)

Access:
Read: All
Write: All

Description: This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records.

If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***.

If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.

Mib: Atmlisp

Values:
origTerm
intermediate

Default: intermediate

ATTRIBUTE Atmlf lisp accountClass (acl)

Access:
Read: All
Write: All

Description: This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator.

Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.

Mib: Atmlisp

Values: Decimal (0..255)

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Default	0

ATTRIBUTE Atmlf lisp serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	Atmlisp
Values	Decimal (0..255)
Default	0

COMPONENT Atmlf lisp Signalling (Sig)

Groups	GROUP Atmlf lisp Sig Provisioned (Prov) GROUP Atmlf lisp Sig OsiState (State) GROUP Atmlf lisp Sig Operational (Oper) GROUP Atmlf lisp Sig Statistics (Stats)
Scope	Device
Description	*Atmlf/n Aini Signalling* *Atmlf/n lisp Signalling* *Atmlf/n Uni Signalling* *Atmlf/n Pnni Signalling* *Atmlf/n Vpt/m Aini Signalling* *Atmlf/n Vpt/m lisp Signalling* *Atmlf/n Vpt/m Uni Signalling* *Atmlf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	Atmlisp
Opt. Subcomp.	COMPONENT Atmlf lisp Sig VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP Atmlf lisp Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	Atmlisp

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ATTRIBUTE Atmlf lisp Sig **vci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	Atmlisp
Values	Decimal (0..65535)
Default	5

ATTRIBUTE Atmlf lisp Sig **addressConversion**

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	Atmlisp
Values	none nativeE164 nsap
Default	none

ATTRIBUTE Atmlf lisp Sig **operatingMode**

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	Atmlisp
Values	normal provisionedOnly

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Default	normal

GROUP Atmlf lisp Sig **OsiState (State)**

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

ATTRIBUTE Atmlf lisp Sig **adminState (osiAdmin)**

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

ATTRIBUTE Atmlf lisp Sig **operationalState (osiOper)**

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

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	with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Atmlisp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Atmlf lisp Sig **usageState (osiUsage)**

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

GROUP Atmlf lisp Sig **Operational (Oper)**

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp Sig **lastTxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	Atmlisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf lisp Sig **lastTxDiagCode**

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Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	Atmlisp
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE Atmlf lisp Sig **lastRxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	Atmlisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf lisp Sig **lastRxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	Atmlisp
Values	Hex (H.0..H.ff)
Default	No default

GROUP Atmlf lisp Sig **Statistics (Stats)**

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	Atmlisp

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ATTRIBUTE Atmlf lisp Sig **peakConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Sig **successfulConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Sig **failedConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Sig **txPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Sig **rxPdus**

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Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Sig currentPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Sig failedPmpConnections

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Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Iisp Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to-point connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Iisp Sig VirtualChannelDescriptor (Vcd)

Groups	GROUP AtmIf Iisp Sig Vcd Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmIisp
Common Verbs	Help List Display Add DELete

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GROUP Atmlf lisp Sig Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	Atmlisp
Values	3 6 7 8
Default	6
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf lisp Sig Vcd atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of

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

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

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

Mib	AtmIisp
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Iisp Sig Vcd** **weight**

Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but

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	standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	Atmlisp
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf lisp Sig Vcd** **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	Atmlisp
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

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ATTRIBUTE Atmlf lisp Sig Vcd **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components. When ***disabled*** is selected, traffic shaping for this connection is disabled.
Mib	Atmlisp
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf lisp Sig Vcd **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*. When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	Atmlisp

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Values	common sameAsCa
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf lisp Sig Vcd **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	Atmlisp
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf lisp Sig Vcd **trafficDescParm (tdp)**

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

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

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

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

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

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

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

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Mib	Atmlisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

COMPONENT Atmlf lisp Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate default]
Groups	GROUP Atmlf lisp Addr Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Address/address,type* *Atmlf/n lisp Address/address,type* *Atmlf/n Uni Address/address,type* *Atmlf/n Pnni Address/address,type* *Atmlf/n Vpt/m Aini Address/address,type* *Atmlf/n Vpt/m lisp Address/address,type* *Atmlf/n Vpt/m Uni Address/address,type* *Atmlf/n Vpt/m Pnni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard ('?'), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address. The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of type ***default***. The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm. The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed. If this node participates in a PNNI hierarchy, then a *PnniInfo*

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subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib	Atmlisp
Opt. Subcomp.	COMPONENT AtmIf lisp Addr TerminateSPvpAndSPvc (TermSP) COMPONENT AtmIf lisp Addr PnniInfo
Common Verbs	Help List Display Add DELete

GROUP AtmIf lisp Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	Atmlisp

ATTRIBUTE AtmIf lisp Addr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.
Mib	Atmlisp
Values	Signed (-1..104)
Default	No default

ATTRIBUTE AtmIf lisp Addr reachability (reach)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	Atmlisp
Values	internal exterior

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Default	No default

COMPONENT Atmlf lisp Addr TerminateSPvpAndSPvc (TermSP)

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc* The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.
Mib	AtmIisp
Common Verbs	Help List Display Add DELete

COMPONENT Atmlf lisp Addr PnniInfo

Groups	GROUP AtmIf Iisp Addr PnniInfo Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Aini Addr/address,type PnniInfo* *AtmIf/n Iisp Addr/address,type PnniInfo* *AtmIf/n Uni Addr/address,type PnniInfo* *AtmIf/n Pnni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Aini Addr/address,type PnniInfo* *AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo* *AtmIf/n Vpt/m Uni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo* This component contains provisioned information associated with the ATM

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address related to PNNI. This component appears only under provisioned *Address* components.

Mib AtmIisp

Common Verbs
Help
List
Display
Add
DELete

GROUP **AtmIf lisp Addr PnniInfo** **Provisioned (Prov)**

Properties Provisioned

Description This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.

Mib AtmIisp

ATTRIBUTE **AtmIf lisp Addr PnniInfo** **scope**

Access
Read: All
Write: All

Criticality Component

Description This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.

Mib AtmIisp

Values Signed (-1..104)

Default -1

ATTRIBUTE **AtmIf lisp Addr PnniInfo** **reachability (reach)**

Access
Read: All
Write: All

Criticality Component

Description This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib AtmIisp

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Values	internal exterior
Default	internal

COMPONENT Atmlf lisp CallingAddressScreening (CallingAScr)

Groups	GROUP Atmlf lisp CallingAScr Provisioned (Prov) GROUP Atmlf lisp CallingAScr Statistics (Stat)
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n lisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not provisioned, all call requests are accepted and no calling address screening takes place.
Mib	Atmlisp
Opt. Subcomp.	COMPONENT Atmlf lisp CallingAScr Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP Atmlf lisp CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp CallingAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***. If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected

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If the value is ***disabled***, no calling address screening is performed.

Mib	Atmlisp
Values	enabled disabled
Default	disabled

ATTRIBUTE Atmlf lisp CallingAScr **defaultInsertionAddress (defInsAddr)**

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	Atmlisp
Values	String (0..20, Hex)
Default	""

GROUP Atmlf lisp CallingAScr **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp CallingAScr **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf lisp CallingAScr **rejectedCalls**

Access	Read: All Write: Illegal

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Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf lisp CallingAScr **unmatchedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

COMPONENT Atmlf lisp CallingAScr **Address (Addr)**

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.

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For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: Atmlisp

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

COMPONENT Atmlf lisp CalledAddressScreening (CalledAScr)

Groups: GROUP Atmlf lisp CalledAScr Provisioned (Prov)
GROUP Atmlf lisp CalledAScr Statistics (Stat)

Scope: Device

Description: *Atmlf/n Aini CalledAddressScreening*
Atmlf/n Uni CalledAddressScreening
Atmlf/n lisp CalledAddressScreening
This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.

Mib: Atmlisp

Opt. Subcomp.: COMPONENT Atmlf lisp CalledAScr Address (Addr)

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

GROUP Atmlf lisp CalledAScr Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes for the *CalledAScr* component.

Mib: Atmlisp

ATTRIBUTE Atmlf lisp CalledAScr adminStatus

Access: Read: All
Write: All

Description: This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***.
If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called

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address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected.
If the value is ***disabled***, no called address screening is performed.

Mib	Atmlisp
Values	enabled disabled
Default	disabled

GROUP **AtmIf lisp CalledAScr** **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	Atmlisp

ATTRIBUTE **AtmIf lisp CalledAScr** **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf lisp CalledAScr** **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf lisp CalledAScr** **unmatchedCalls**

Access	Read: All Write: Illegal

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Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

COMPONENT Atmlf lisp CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n lisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n lisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	Atmlisp
Common Verbs	Help List Display Add DELete

COMPONENT Atmlf lisp PathTraceFilter (Ptf)

Groups	GROUP Atmlf lisp Ptf Criteria GROUP Atmlf lisp Ptf Operational (Oper) GROUP Atmlf lisp Ptf RecordControl (Record)
Scope	Device

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Description	*AtmIf/n Aini PathTraceFilter* *AtmIf/n Iisp PathTraceFilter* *AtmIf/n Uni PathTraceFilter* *AtmIf/n Pnni PathTraceFilter* *AtmIf/n Vpt/vpi Aini PathTraceFilter* *AtmIf/n Vpt/vpi Iisp PathTraceFilter* *AtmIf/n Vpt/vpi Uni PathTraceFilter* *AtmIf/n Vpt/vpi Pnni PathTraceFilter* This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced. When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop,* and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared. Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted. The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.
Mib	Atmlisp
Dyn. Subcomp.	COMPONENT AtmIf Iisp Ptf PathTraceRecord (PTRecord)
Common Verbs	Help List Display Add DELete

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VERB START **AtmIf lisp Ptf**

Impact: Service

Description:

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP **AtmIf lisp Ptf**

Impact: Service

Description:

STOP AtmIf/n Aini PathTraceFilter
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

VERB CLEAR **AtmIf lisp Ptf**

Impact: Service

Description:

CLEAR AtmIf/n Aini PathTraceFilter
CLEAR AtmIf/n Iisp PathTraceFilter
CLEAR AtmIf/n Uni PathTraceFilter
CLEAR AtmIf/n Pnni PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP **AtmIf lisp Ptf** **Criteria**

Properties: Operational

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Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	Atmlisp
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE Atmlf lisp Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	Atmlisp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf lisp Ptf callingPartyPrefix (clgPref)

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Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	Atmlisp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf lisp Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	Atmlisp
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE Atmlf lisp Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	Atmlisp
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE Atmlf lisp Ptf serviceCategory (svcCat)

Access	Read: All Write: All

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Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	Atmlisp
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP Atmlf lisp Ptf **Operational (Oper)**

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

ATTRIBUTE Atmlf lisp Ptf **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	Atmlisp
Values	active inactive
Default	inactive

ATTRIBUTE Atmlf lisp Ptf **recordCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	Atmlisp
Values	Decimal (0..200)

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Default	No default

ATTRIBUTE Atmlf lisp Ptf **matchedConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	Atmlisp
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Atmlf lisp Ptf **elapsedTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	Atmlisp
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE Atmlf lisp Ptf **timeRemaining**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	Atmlisp
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP Atmlf lisp Ptf **RecordControl (Record)**

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp Ptf **traceTimeout**

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Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	Atmlisp
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE Atmlf lisp Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	Atmlisp
Values	Decimal (1..200)
Default	2

COMPONENT Atmlf lisp Ptf PathTraceRecord (PTRecord)

Groups	GROUP Atmlf lisp Ptf PTRecord Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord* *Atmlf/n lisp Ptf PTRecord* *Atmlf/n Uni Ptf PTRecord* *Atmlf/n Pnni Ptf PTRecord* *Atmlf/n Vpt/n Aini Ptf PTRecord* *Atmlf/n Vpt/n lisp Ptf PTRecord* *Atmlf/n Vpt/n Uni Ptf PTRecord* *Atmlf/n Vpt/n Pnni Ptf PTRecord* This component represents the path trace record for the last failed connection against this filter.
Mib	Atmlisp
Dyn. Subcomp.	COMPONENT Atmlf lisp Ptf PTRecord Hop
Common Verbs	Help List Display

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GROUP Atmlf lisp Ptf PTRecord **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp Ptf PTRecord **status**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	Atmlisp
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord **timeStamp**

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	Atmlisp
Values	Time (DHMS)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.

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Mib	Atmlisp
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	Atmlisp
Values	String (40, ASCII)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	Atmlisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord **diagCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	Atmlisp
Values	String (0..8, ASCII)
Default	No default

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COMPONENT Atmlf lisp Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	GROUP Atmlf lisp Ptf PTRecord Hop Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord Hop/n* *Atmlf/n lisp Ptf PTRecord Hop/n* *Atmlf/n Uni Ptf PTRecord Hop/n* *Atmlf/n Pnni Ptf PTRecord Hop/n* *Atmlf/n Vpt/n Aini Ptf PTRecord Hop/n* *Atmlf/n Vpt/n lisp Ptf PTRecord Hop/n* *Atmlf/n Vpt/n Uni Ptf PTRecord Hop/n* *Atmlf/n Vpt/n Pnni Ptf PTRecord Hop/n* *Atmlf/n Vcc/x.y PTRecord Hop/n* *Atmlf/n Vpc/n PTRecord Hop/n* *Atmlf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	Atmlisp
Dyn. Subcomp.	COMPONENT Atmlf lisp Ptf PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP Atmlf lisp Ptf PTRecord Hop Operational (Oper)

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

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.

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Mib	Atmlisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	Atmlisp
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages.

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	The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	Atmlisp
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE **AtmIf lisp Ptf PTRecord Hop** **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	Atmlisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf lisp Ptf PTRecord Hop** **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	Atmlisp
Values	String (12, ASCII)
Default	No default

ATTRIBUTE **AtmIf lisp Ptf PTRecord Hop** **portId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf lisp Ptf PTRecord Hop** **portName**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	Atmlisp
Values	String (55, ASCII)
Default	No default

ATTRIBUTE **Atmlf lisp Ptf PTRecord Hop** **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	Atmlisp
Values	absent present
Default	absent

ATTRIBUTE **Atmlf lisp Ptf PTRecord Hop** **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	Atmlisp
Values	absent present
Default	absent

ATTRIBUTE **Atmlf lisp Ptf PTRecord Hop** **pnniCrankbackGapIndPresent (gap)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	Atmlisp
Values	absent present
Default	absent

ATTRIBUTE **Atmlf lisp Ptf PTRecord Hop** **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	Atmlisp
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE **Atmlf lisp Ptf PTRecord Hop** **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	Atmlisp
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE **Atmlf lisp Ptf PTRecord Hop** **blockedNodeId (bNodeId)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	Atmlisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf lisp Ptf PTRecord Hop** **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	Atmlisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf lisp Ptf PTRecord Hop** **blockedLinkPortId (bPortId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **blockedLinkSucceedingNodeId (sNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	Atmlisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **dstVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	Atmlisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	Atmlisp

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	Atmlisp
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	Atmlisp
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Atmlf lisp Ptf PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	Atmlisp
Values	no yes

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Default	no

COMPONENT **AtmIf Iisp Ptf PTRecord Hop** **VendorSpecificInfo (Vsi)**

Instance	Decimal (0..10)
Groups	GROUP AtmIf Iisp Ptf PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information. All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmIisp
Common Verbs	Help List Display

GROUP **AtmIf Iisp Ptf PTRecord Hop Vsi** **Operational (Oper)**

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

ATTRIBUTE **AtmIf Iisp Ptf PTRecord Hop Vsi** **length**

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmIisp
Values	Decimal (0..11)

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Default	No default

ATTRIBUTE Atmlf Iisp Ptf PTRecord Hop Vsi **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	Atmlisp
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Iisp Ptf PTRecord Hop Vsi **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	Atmlisp
Values	String (1..8, Hex)
Default	No default

COMPONENT Atmlf Iisp **PathTraceTestConnection (Ptt)**

Groups	GROUP Atmlf Iisp Ptt Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini PathTraceTestConnection* *Atmlf/n Iisp PathTraceTestConnection* *Atmlf/n Uni PathTraceTestConnection* *Atmlf/n Pnni PathTraceTestConnection* *Atmlf/n Vpt/vpi Aini PathTraceTestConnection* *Atmlf/n Vpt/vpi Iisp PathTraceTestConnection* *Atmlf/n Vpt/vpi Uni PathTraceTestConnection* *Atmlf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test

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connection responds with the trace results collected during a complete or partial trace.

Mib: AtmIisp

Common Verbs: Help, List, Display

VERB TRACE Atmlf lisp Ptt

Impact: Passive

Description:

TRACE AtmIf/n Aini AtmPathTraceTest
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf lisp Ptt Operational (Oper)

Properties: Operational

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

Mib: AtmIisp

ATTRIBUTE Atmlf lisp Ptt traceCrankback

Access: Read: All
Write: All

Description: This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.

Mib: AtmIisp

Values: no
yes

Default: no

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ATTRIBUTE Atmlf lisp Ptt **txTrafficDescType (txTdt)**

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

ATTRIBUTE Atmlf lisp Ptt **rxTrafficDescType (rxTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	Atmlisp
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE Atmlf lisp Ptt **atmServiceCategory (service)**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications. The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS. The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.
Mib	AtmIisp
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE Atmlf lisp Ptt fwdQosClass (fwdQos)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmIisp
Values	0 1 2 3 4
Default	0

ATTRIBUTE **Atmlf Iisp Ptt** **bwdQosClass (bwdQos)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

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

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

Mib	AtmIisp
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE Atmlf lisp Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting

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an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib	AtmIisp
Values	a c x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf lisp Ptt transferCapabilityBbc (tcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. UNI 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> ***0***: NoIndication, NoIndication ***1***: NoIndication, yes ***2***: NoIndication, no ***5***: CBR, yes ***8***: VBR, NoIndication ***9***: VBR, yes ***10***: VBR, no ***NotApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data. The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing. The value ***yes*** for end-to-end timing indicates that end-to-end timing is required. The value ***no*** for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to

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derivedFromServiceCategory or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmIisp

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf lisp Ptt **clippingBbc (cBbc)**

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

Mib: AtmIisp

Values:
no
yes

Default: no

ATTRIBUTE Atmlf lisp Ptt **bestEffort**

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

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	The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmIisp
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf lisp Ptt **testCalledAddress**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmIisp
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf lisp Ptt **testCalledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmIisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf lisp Ptt **testSpecifiedPath**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmIisp

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Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf lisp Ptt bwdQosParameters (bqp)

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

ATTRIBUTE Atmlf lisp Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and

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nrt-VBR connections. It is signaled through the extended QoS information element.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE **Atmlf Iisp Ptt txTrafficDescParm (txTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR.

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Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

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

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

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

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

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

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

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if

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there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

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

ATTRIBUTE **AtmIf IispPtt** **rxTrafficDescParm (rxTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2. When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be

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greater than or equal to parameter 2.

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

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

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

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

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

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

Parameter 5 of the *rxTrafficDescParm* is always unused.

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

Mib	Atmlisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)

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Default	([5] 0)

COMPONENT AtmIf Iisp ServiceTrace (SrvTrace)

Groups	GROUP AtmIf Iisp SrvTrace Operational
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmIispTrace
Common Verbs	Help List Display Add DELete

VERB Start AtmIf Iisp SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop AtmIf Iisp SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP AtmIf Iisp SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.

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Mib	AtmIispTrace

ATTRIBUTE **AtmIf IispSrvTrace** **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmIispTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE **AtmIf IispSrvTrace** **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmIispTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE **AtmIf IispSrvTrace** **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmIispTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE **AtmIf IispSrvTrace** **session**

Access	Read only

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Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmIispTrace
Values	The name of the component
Default	No default

COMPONENT Atmlf lisp Reroute

Groups	GROUP Atmlf lisp Reroute LocalOperational (LOper) GROUP Atmlf lisp Reroute GlobalOperational (GOper) GROUP Atmlf lisp Reroute Statistics (Stats)
Scope	Device
Description	*Atmlf/n lisp Reroute* *Atmlf/n Aini Reroute* *Atmlf/n Uni Reroute* *Atmlf/n Vpt/vpi lisp Reroute* *Atmlf/n Vpt/vpi Aini Reroute* *Atmlf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	Atmlisp
Subcomponents	COMPONENT Atmlf lisp Reroute Ov
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE **Atmlf lisp Reroute**

Impact	Service
Description	*Optimize [-all] AtmIf/n Uni Reroute* *Optimize [-all] AtmIf/n Aini Reroute* *Optimize [-all] AtmIf/n Iisp Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Uni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Aini Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Iisp Reroute* This command triggers path optimization for the connection segments managed by the Reroute component. By default, only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection. The -all option causes all connection segments subscribed to path optimization to be considered. Using the Optimize command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP **Atmlf lisp Reroute** **LocalOperational (LOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	Atmlisp

ATTRIBUTE **Atmlf lisp Reroute** **localSubscribedConnections (lsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **Atmlf lisp Reroute** **localEligibleRecoveredCon (lerc)**

Access	Read only

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Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute **localIneligibleRecoveredCon (lirc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute **localLastRrCauseCode (lrrcc)**

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

ATTRIBUTE Atmlf lisp Reroute **localPathsOptimized (lPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf lisp Reroute **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.

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Mib	Atmlisp

ATTRIBUTE Atmlf lisp Reroute globalSubscribedConnections (gsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute globalLastRrCauseCode (grrcc)

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

ATTRIBUTE Atmlf lisp Reroute globalPathsOptimized (gPathsOpt)

Access	Read only

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Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf lisp Reroute **Statistics (Stats)**

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp Reroute **totalLocalConnectionRecoveries (tLConRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute **totalLocalFailedRecoveries (lFailedRec)**

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute **totalLocalPathOptimizations (tLPathOpt)**

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Atmlf lisp Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf lisp Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

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COMPONENT AtmIf Iisp Reroute Ov

Groups	GROUP AtmIf Iisp Reroute Ov Provisioned (Prov) GROUP AtmIf Iisp Reroute Ov LocalProvisioned (LProv) GROUP AtmIf Iisp Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmIisp
Common Verbs	Help List Display

GROUP AtmIf Iisp Reroute Ov Provisioned (Prov)

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

ATTRIBUTE AtmIf Iisp Reroute Ov protocol

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

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globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
localEbr: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmIisp

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Atmlf Iisp Reroute Ov **numOptAttempts**

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmIisp

Values:
Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default: sameAs

ATTRIBUTE Atmlf Iisp Reroute Ov **moduleOptimizationConnections**

Access: Read and write

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

ATTRIBUTE **AtmIf iisp Reroute Ov** **switchoverMechanism**

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute. ***standard***: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”. ***rcl***: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.
Mib	AtmIisp
Values	standard rcl sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

GROUP **AtmIf iisp Reroute Ov** **LocalProvisioned (LProv)**

Properties	Provisioned

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Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	Atmlisp

ATTRIBUTE Atmlf lisp Reroute Ov **localConnectionRecoverySubscr (lConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute:*** If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values. ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.
Mib	Atmlisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE Atmlf lisp Reroute Ov **localPathOptimizationSubscr (lPathOpt)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or

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localOnly protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib	Atmlisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

GROUP **Atmlf lisp Reroute Ov** **GlobalProvisioned (GProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	Atmlisp

ATTRIBUTE **Atmlf lisp Reroute Ov** **globalConnectionRecoverySubscr (gConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection

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recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib — AtmIisp

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

ATTRIBUTE Atmlf lisp Reroute Ov **globalPathOptimizationSubscr (gPathOpt)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP

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	connection segments request subscription to global or EBR path optimization. ***transitSpvcSpvp***: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.
Mib	AtmIisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT Atmlf NailedUpAccounting (NAcct)

Groups	GROUP AtmIf NAcct Provisioned (Prov)
Scope	Device
Description	*AtmIf/n NailedUpAccounting* This component represents the ATM accounting options for all nailed up connections (PVCs) on this ATM interface. The component must be provisioned in order to perform PVC ATM accounting on this ATM interface.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP Atmlf NAcct Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for PVC accounting.
Mib	AtmCore

ATTRIBUTE Atmlf NAcct accountCollection (aco)

Access	Read: All Write: All
Description	This attribute specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit*** or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA (time of day accounting) changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled;

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- when the PVC is deleted (a call record is generated with final cell counts).

If none of the reasons is present, then accounting will be suppressed for all PVCs on this interface. Accounting can be suppressed on individual PVCs by specifying a null *correlationTag* attribute in the *AtmIf NAcct* component.

The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason,* as appropriate.

Mib: AtmCore

Set of:
bill
test
study
audit
force

Default: No default

ATTRIBUTE AtmIf NAcct accountConnectionType (act)

Access:
Read: All
Write: All

Description: This attribute specifies whether accounting records generated for the PVCs on this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record. It may be used by downstream accounting processing to correlate the records.

If the value is ***origTerm*** then the value of attribute *connPointType* in the accounting records generated for incoming calls will be ***originating*** and records generated for outgoing calls will be ***terminating***.

If the value is ***intermediate*** then the value of attribute *connPointType* in the accounting records generated for all calls will be ***intermediate***.

Mib: AtmCore

Values:
origTerm
intermediate

Default: origTerm

ATTRIBUTE AtmIf NAcct accountClass (acl)

Access:
Read: All
Write: All

Description: This attribute specifies the accounting class associated with the PVCs on this interface. Its meaning is determined by the network operator.

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Its value is recorded in the accounting records generated by this interface, in the attributes, *callingServiceType* and *calledServiceType*.

Mib AtmCore

Values Decimal (0..255)

Default 0

ATTRIBUTE AtmIf NAcct serviceExchange (sre)

Access Read: All
Write: All

Description This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator.

Its value is recorded in the accounting records generated by this interface, in the attributes, *callingDse* and *calledDse*.

Mib AtmCore

Values Decimal (0..255)

Default 0

COMPONENT AtmIf VirtualPathTerminator (Vpt)

Instance Decimal (0..4095)

Groups GROUP AtmIf Vpt OsiState (State)
GROUP AtmIf Vpt Operational (Oper)
GROUP AtmIf Vpt Status
GROUP AtmIf Vpt Statistics (Stats)

COLLECTED STATS AtmInterface VirtualPathTerminator

Scope Device

Description *AtmIf/n VirtualPathTerminator/vpi*
This component represents a virtual path terminator (VPT). The instance

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value defines the VPI value for this connection—for example, *Vpt/120* defines a terminator with a VPI of 120.

Mib	AtmCore
Subcomponents	COMPONENT AtmIf Vpt VirtualPathDescriptor (Vpd)
Opt. Subcomp.	COMPONENT AtmIf Vpt ConnectionAdministrator (CA) COMPONENT AtmIf Vpt Iisp COMPONENT AtmIf Vpt Pnni COMPONENT AtmIf Vpt UserNetworkInterface (Uni) COMPONENT AtmIf Vpt Aini
Dyn. Subcomp.	COMPONENT AtmIf Vpt TrafficManagement (Tm)
Dyn. Subcomp.	COMPONENT AtmIf Vpt VirtualChannelConnection (Vcc)
Common Verbs	Help List Display Add DELete

VERB TRACE AtmIf Vpt

Impact	Service
Description	*TRACE AtmIf/n Vpt/vpi* *TRACE -p AtmIf/n Vpt/vpi* This command traces the path of an intra-network segment of a connection. It displays the names of interface and connection components found along this segment of a connection path. The trace output also includes the *Virtual Path Terminator (VPT)* at the end of the path, should one exist. The option for the OAM trace is as follows: *-p*: Selects the Nortel Networks proprietary OAM Connection Management Trace instead of the proprietary OAM Legacy Loopback Trace. If no options are provided, the default configuration uses the Legacy Loopback Trace.

GROUP AtmIf Vpt OsiState (State)

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

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Mib	AtmCore

ATTRIBUTE Atmlf Vpt adminState (osiAdmin)

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

ATTRIBUTE Atmlf Vpt operationalState (osiOper)

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

ATTRIBUTE Atmlf Vpt usageState (osiUsage)

Access	Read only

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

GROUP Atmlf Vpt Operational (Oper)

Properties	Operational
Description	This group contains operational information for a *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt connectionPointType (cpt)

Access	Read only
Description	This attribute reflects the role of the connection component at this interface. A value of ***connectionEndPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are processed by the connection component. A value of ***segmentEndPoint*** indicates that user cells and end-to-end OAM cells are relayed by the connection component, while segment OAM cells are processed by the connection component. A value of ***connectingPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are relayed by the connection component. A value of ***unknown*** indicates that the connection component is inactive.
Mib	AtmCore
Values	connectionEndPoint segmentEndPoint connectingPoint unknown
Default	No default

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GROUP Atmlf Vpt Status

Properties	Operational
Description	This group contains operational status information for a *Vcc, Vpc* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt operStatus (opStat)

Access	Read only
Description	This attribute indicates the present operational status of the *Vcc, Vpc* or *Vpt* component. Its value is dependent upon the current state of the *segLinkSideLoopbackState* and *endToEndLoopbackState* attributes. The value is ***end2endUp*** when the *endToEndLoopbackState* is ***good*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***end2endDown*** when the *endToEndLoopbackState* is ***bad*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***unknown*** and the *segLinkSideLoopbackState* is ***good***. The value is ***localDown*** when *segLinkSideLoopbackState* is ***bad***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***notApplicable*** and the *segLinkSideLoopbackState* is ***good***. The value is ***unknown*** when the *endToEndLoopbackState* is either ***unknown*** or ***notApplicable*** and the *segLinkSideLoopbackState* is ***unknown***.
Mib	AtmCore
Values	unknown end2endUp end2endDown localUpEnd2endUnknown localDown
Default	No default

ATTRIBUTE Atmlf Vpt localFailureCause

Access	Read only
Description	This attribute indicates the failure cause of the *Vcc, Vpc* or *Vpt* component. A value of ***noFailure*** indicates that there is currently no bandwidth related failure for this connection.

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A value of ***portDown*** indicates that the interface corresponding to the parent *AtmIf* is down.

A value of ***localBwLoss*** indicates that the *AtmIf* has lost some, but not all bandwidth, and as a result, this connection has been released.

A value of ***notAdmitted*** indicates that this connection has failed to be admitted by the Connection Admission Control (CAC) algorithm.

A value of ***appNotRegistered*** indicates that there is no application registered to use this connection. This may be the case, for example when there is a *Vcc Test* application, but the test has not been started. Check the status of the application to determine why it is not functional.

A value of ***disabledByApp*** indicates that the application using this connection has requested that the connection be disabled. An example is a connection used by a trunk application where the trunk has timed out on an attempt to stage. Check the application to determine why it is not fully functional.

A value of ***bwReduced*** indicates that this connection is operating in a reduced bandwidth state. It is a bandwidth elastic connection which currently has been allocated less than the requested (equivalent) bandwidth.

A value of ***vpDown*** indicates that this connection has been notified of a fault detected at the associated VP-layer. A value of ***vpDown*** is applicable for *Vpt Vcc*s only.

Mib	AtmCore
Values	noFailure localBwLoss portDown notAdmitted appNotRegistered disabledByApp bwReduced vpDown
Default	No default

ATTRIBUTE Atmlf Vpt troubled

Access	Read only
Description	This attribute indicates whether or not the connection is in a troubled state. Connections become troubled because of OAM failures; when one of the attributes *segLinkSideLoopbackState*, *segSwitchSideLoopbackState*, *endToEndLoopbackState*, *aisState* (when receiving AIS cells only) or *rdiState* go bad, this attribute is set to ***yes***; otherwise it is set to ***no***.

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Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt **segLinkSideLoopbackState (segLkLbkState)**

Access	Read only
Description	This attribute contains the current state of the link-side segment loopback for this connection. Link-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the link (port). The value of this attribute is dependent upon the current setting of the *segLinkSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the segment link side loopback is working. The value is ***bad*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the link side segment loopback is not working. The value is ***unknown*** when the *segLinkSideLoopback* is ***off***. The value is ***unknown*** when the value of the *segLinkSideLoopback* attribute is ***on***, the *connectionPointType* attribute is set to ***segmentEndPoint*** or ***connectionEndPoint***, and the segment link side loopback has not yet been determined. The state of this attribute determines, in part, the value of the *operStatus* attribute.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

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ATTRIBUTE Atmlf Vpt **segSwitchSideLoopbackState (segSwLbkState)**

Access	Read only
Description	This attribute contains the current state of the switch-side segment loopback for this connection. Switch-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the bus. The value of this attribute is dependent upon the current setting of the *segSwitchSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is only applicable when the *connectionPointType* is a ***segmentEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or ***connectionEndPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback is working. The value is ***bad*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the switch side segment loopback is not working. The value is ***unknown*** when the *segSwitchSideLoopback* is ***off***. The value is ***unknown*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback has not been determined.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt **endToEndLoopbackState (eeLbkState)**

Access	Read only
Description	This attribute contains the current state of the end-to-end loopback for this connection. Its value is dependent upon the current setting of the *endToEndLoopback* provisionable attribute and the connection point type as specified by the *connectionPointType* attribute.

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The value is only applicable when the *connectionPointType* is a ***connectionEndPoint***.

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or s***egmentEndPoint***.

The value is ***notApplicable*** when the *distributionType* is a ***pointToMultipoint***.

The value is ***good*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is working.

The value is ***bad*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is not working.

The value is ***unknown*** when the *endToEndLoopback* is ***off***.

The value is ***unknown*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback status has not been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute.

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt rxOamCellCongestionState (rxOamCongState)

Access	Read only
Description	This attribute contains the current state of the receive side OAM cell congestion for this connection. Its value reflects whether the rate of received OAM cells for this connection is below a specified threshold. The connection maintains a count of the number of OAM cells which are terminated per second. Once that count exceeds the specified threshold, extraction of all OAM cells for this connection is disabled for a period of one minute. This is a congestion management mechanism to prevent the processor from being overloaded with handling OAM cells for a particular connection. This mechanism ensures that tasks, such as trunks obtain enough processor cycles to remain in service, and are not adversely affected by excessive rate of OAM cells on a particular connection. The value is ***good*** when the rate of received OAM cells is less than the allowed threshold.

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The value is ***bad*** when the arrival rate has exceeded the allowed threshold. It remains ***bad*** for one minute, before returning to ***good*** again. During this timeout, extraction of all OAM cells is disabled for this connection. As a result, other loopback failure conditions may occur.

The value is ***unknown*** when the application has not yet begun to use this connection. An example is the *Test* component before a test has been started.

Each type of OAM cell is counted separately. The threshold for AIS cells is three cells per second. If more than three AIS cells are received within a one second interval, this attribute is set to ***bad***. The threshold for RDI cells and each loopback type is also three, but the threshold for trace cells is 250 per second.

The state of this attribute has no direct effect on the value of the *operStatus* attribute or on the number of troubled connections.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

Default: No default

ATTRIBUTE Atmlf Vpt aisState

Access: Read only

Description: This attribute contains the current state of the Alarm Indication Signal for this connection.

A value of ***good*** indicates that the connection's application is active and no alarm has occurred.

A value of ***bad*** indicates that the connection's application is active and an alarm has occurred.

A value of ***unknown*** indicates that the connection's application is inactive.

A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

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Default	No default

ATTRIBUTE Atmlf Vpt rdiState

Access	Read only
Description	This attribute indicates the current state of the Remote Defect Indication for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

GROUP Atmlf Vpt Statistics (Stats)

Properties	Operational
Description	This group contains traffic statistics for a *Vcc*, *Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt txCell

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection. The counter wraps to zero if it exceeds its maximum value of (2**64)-1. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this attribute does not include locally generated AIS cells. Specifically AIS cells generated on the destination side of a SPVC or SPVP will not be included in this attribute, nor will AIS cells generated on the link side of a PVC or PVP.
Mib	AtmCore
Values	Long Integer

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Default	No default

ATTRIBUTE Atmlf Vpt txCellClp (txClp)

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection with the CLP=1. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt txCellDiscard (txcd)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection that have been discarded. Discarded cells are not counted in the *txCell* attribute. Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscard* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt txCellDiscardClp (txcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection with CLP=1 that have been discarded.

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For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count is included in the *txCellDiscard* attribute. Discarded cells are not counted in the *txCellClp* attribute.

Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscardClp* values for all connections associated with the *Vpt*.

When both ingress and egress of a port is down, txcells are silently discarded.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE **AtmIf Vpt** **txFrameDiscard (txfd)**

Access	Read only
Description	This attribute counts the number of frames received from the backplane on this connection that have been discarded.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtmcards***, this attribute does not count frames discarded due to congestion at the main traffic management device toward the link.

This count is independent of the *txCell* or *txCellDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is

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applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscard* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscard* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt txFrameDiscardClp (txfdClp)

Access	Read only
Description	This attribute counts the number of discarded frames on this connection that were received from the backplane and composed of one or more CLP=1 cells. Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtmcards***, this attribute does not count frames discarded due to congestion at the main traffic management device toward the link. This count is included in the *txFrameDiscard* attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscardClp* values for all connections associated with the *Vpt*. Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscardClp* attribute.

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The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt rxCell

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells that have been discarded by the interface due to non-conformance with UPC. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down. For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when the PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down and is increased when either the SPVC or SPVP connection is down. For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted. For ***16pOC3PosAtm*** card, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

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ATTRIBUTE Atmlf Vpt **rxCellClp (rxClp)**

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection with the CLP=1. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt **rxCellDiscard (rxcd)**

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection that have been discarded. This count is included in the *rxCell* attribute. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells discarded due to non-conformance with UPC. For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscard* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscard* attribute. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic

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is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down, regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or only F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE **AtmIf Vpt** **rxCellDiscardClp (rxcdClp)**

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection with CLP=1 that have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is

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not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscardClp* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE **AtmIf Vpt** **rxFrameDiscard (rxfd)**

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have been discarded. This count is independent of the *rxCellDiscard* attribute. This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute does not count frames discarded due to UPC. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscard* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

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ATTRIBUTE Atmlf Vpt **rxFrameDiscardClp (rxfdClp)**

Access	Read only
Description	This attribute counts the number of discarded frames on this connection that were received from the interface and composed of one or more CLP1 cells. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscard* attribute. This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute does not count frames discarded due to UPC. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscardClp* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt **rxUpcViolationOnEnforcer1 (rxEnforcer1)**

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored on the connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed. When the value of the *rxTrafficDescType* attribute for this connection is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections) Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1. When the value of the *rxTrafficDescType* attribute for this connection is 9

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(for ABR connections), Enforcer 1 performs the Dynamic Generic Cell Rate Algorithm (DGCRA) used for the Available Bit Rate (ABR) service category.

If UPC is enforced all non-conforming cells are discarded by this enforcer. These discarded cells are included in the *rxCellDiscard* attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer1* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE **AtmIf Vpt** **rxUpcViolationOnEnforcer2 (rxEnforcer2)**

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored on the connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed. This attribute is only applicable if the value of the *rxTrafficDescType* attribute for this connection is 4, 5, 6, 7, or 8. When the value of the *rxTrafficDescType* attribute is 4, or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0. When the value of the *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1. When the value of the *rxTrafficDescType* attribute is 7, or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0. If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* values of 4, 6, and 7. It tags non-conforming cells for *rxTrafficDescType* values of 5, and 8. Discarded cells are counted in the rxCellDiscard attribute. For basic *Vpt*s, this attribute provides an aggregated total of all

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rxUpcViolationOnEnforcer2 values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt rxAal5FrameError (rxfer)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have AAL5 length errors or AAL5 CRC errors. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed. AAL5 length or CRC errors typically occur because of cell discards due to congestion, UPC, or due to corruption of data between the AAL5 segmentation and reassembly end points. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameError* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt rxAal5FrameAbort (rxfa)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have the AAL5 length field set to zero. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

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An AAL5 length of zero is an indication by the far end segmentation point, to this reassembly point, that the frame is to be discarded without reassembly. This mechanism is typically used by a segmentation point if it detects an error in a frame after some of the cells belonging to that frame have already been transmitted.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameAbort* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

COLLECTED STATS AtmInterface VirtualPathTerminator

Description	The statistics record generated by the AtmInterface VirtualPathTerminator component.

ATTRIBUTE Atmlf Vpt remoteInstance

Description	This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel*.
Values	String (0..60, ASCII)

ATTRIBUTE Atmlf Vpt provRate

Description	This attribute indicates the provisioned bandwidth for this ATM interface.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt actualRate

Description	This attribute indicates the actual bandwidth for this ATM interface. When no errors occur it has a value equal to *provRate*. When the link (or IMA group) is down for the entire collection interval it has a value of zero. When the link goes down during the collection interval it has a value representing the average bandwidth during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf Vpt txUtilization

Description	This attribute indicates the average transmit traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%. If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.
Values	Decimal (0..65535)
Units	%

ATTRIBUTE Atmlf Vpt rxUtilization

Description	This attribute indicates the average receive traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%. If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.
Values	Decimal (0..65535)
Units	%

ATTRIBUTE Atmlf Vpt txMaxCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf Vpt txMaxCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txMinCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt txMinCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txAvgCellRate

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt txAvgCellRateByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf Vpt rxMaxCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt rxMaxCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxMinCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt rxMinCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxAvgCellRate

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf Vpt rxAvgCellRateByServiceCat

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txMaxCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt txMaxCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txMinCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt txMinCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf Vpt txAvgCellRateClp

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt txAvgCellRateClpByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxMaxCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt rxMaxCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxMinCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf Vpt **rxMinCellRateClpByServiceCat**

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **rxAvgCellRateClp**

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt **rxAvgCellRateClpByServiceCat**

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **txCellDiscards**

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt **txCellDiscardsByServiceCat**

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf Vpt rxCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt rxCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt txFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

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ATTRIBUTE Atmlf Vpt **rxFrameDiscardsByServiceCat**

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **txCellDiscardsClp**

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt **txCellDiscardsClpByServiceCat**

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **rxCellDiscardsClp**

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt **rxCellDiscardsClpByServiceCat**

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **txFrameDiscardsClp**

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval.

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Values Long Integer

ATTRIBUTE Atmlf Vpt txFrameDiscardsClpByServiceCat

Description This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.

Vector of Long Integer

Index
cbr
rtvbr
nrtvbr
abr
ubr

ATTRIBUTE Atmlf Vpt rxFrameDiscardsClp

Description This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval.

Values Long Integer

ATTRIBUTE Atmlf Vpt rxFrameDiscardsClpByServiceCat

Description This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval by ATM service category.

Vector of Long Integer

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COMPONENT Atmlf Vpt VirtualPathDescriptor (Vpd)

Groups
GROUP Atmlf Vpt Vpd Loopback (Lbk)
GROUP Atmlf Vpt Vpd Accounting (Acct)
GROUP Atmlf Vpt Vpd Provisioned (Prov)

Scope Device

Description
Atmlf/n Vpt/vpi Vpd
The *Vpt Vpd* component contains provisioning information about its parent *Vpt* component.

Mib AtmCore

Subcomponents COMPONENT Atmlf Vpt Vpd TrafficManagement (Tm)

Common Verbs
Help
List
Display

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GROUP Atmlf Vpt Vpd Loopback (Lbk)

Properties	Provisioned
Description	This group contains the provisionable loopback attributes for a *Vcc, Vpc,* or *Vpt* component. Note that certain loopback requests may not be possible on a given connection. In such cases, the corresponding operational loopback attribute in the *Status* group of the *Vcc, Vpc,* or *Vpt* component indicates ***notApplicable*** and the requested loopback is not performed. If loopbacks are provisioned to be on, and for any reason the segment or end-to-end OAM loopback cells are not relayed, the connection component becomes troubled, and user cell traffic may be discarded. If loopbacks are provisioned to be on, all of the nodes in the segment, and external networks which are in the end-to-end connection must relay the OAM loopback cells.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vpd segLinkSideLoopback (segLkLbk)

Access	Read and write
Description	This attribute specifies whether link-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the link-side segment loopback insertion for the connection is based on the *segLinkSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has link-side segment loopback insertion turned on, then link-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means link-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that link-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***. Link-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *segLinkSideLoopbackState* attribute indicates ***notApplicable*** and link-side segment loopback insertion is not performed. Link-side segment loopback insertion is always possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface

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Default	sameAsInterface

ATTRIBUTE Atmlf Vpt Vpd **segSwitchSideLoopback (segSwLbk)**

Access	Read and write
Description	This attribute specifies whether switch-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the switch-side segment loopback insertion for the connection is based on the *segSwitchSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has switch-side segment loopback insertion turned on, then switch-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means switch-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that switch-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint*** or ***connectionEndPoint***. Switch-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint*** In such cases, the operational *segSwitchSideLoopbackState* attribute indicates ***notApplicable*** and switch-side segment loopback insertion is not performed. Switch-side segment loopback is never possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE Atmlf Vpt Vpd **endToEndLoopback (eeLbk)**

Access	Read and write
Description	This attribute specifies whether end-to-end loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the end-to-end loopback insertion for the connection is based on the *endToEndLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has end-to-end loopback insertion turned on, then end-to-end loopback insertion is also on for the connection. A value of ***on***, or ***off*** means end-to-end loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

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Note that end-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *endToEndLoopbackState* attribute indicates ***notApplicable*** and end-to-end loopback insertion is not performed.

End-to-end loopback insertion is always possible on a *Vpt*.

Mib: AtmCore

Values:
on
off
sameAsInterface

Default: sameAsInterface

ATTRIBUTE Atmlf Vpt Vpd mCastConnectionType (connType)

Access: Read and write

Criticality: Component

Description: This attribute specifies if this *Vcc* or *Vpc* is part of point-to-point or point-to-multiPoint connection.

A value of ***pointToMultiPointRoot*** must be set when this *Vcc* has an *Msrc* or an *Mnrp* subcomponent, or this *Vpc* has an *Mnrp* subcomponent.

A value of ***pointToMultiPointLeaf*** must be set when this *Vcc* or *Vpc* has a *Nrp* subcomponent and its *nextHop* attribute is linked to a *Mnrp* component.

Otherwise a value of ***pointToPoint*** must be set.

Mib: AtmCore

Values:
pointToPoint (ptp)
pointToMultipointRoot (pmpRoot)
pointToMultipointLeaf (pmpLeaf)

Default: pointToPoint

GROUP Atmlf Vpt Vpd Accounting (Acct)

Properties: Provisioned

Description: This group contains the provisionable ATM accounting attributes for a *Vcc, Vpc,* or *Vpt* component.

Mib: AtmCore

ATTRIBUTE Atmlf Vpt Vpd correlationTag (tag)

Access: Read and write

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Description	This attribute specifies a unique identifier for each end of a PVC. It that may be used by downstream processing systems to correlate accounting records issued at different nodes in the network. The attribute can be up to 64 bytes long. If it is less than 64 bytes, it is zero filled on the right to create a 64 byte value. The resulting value is recorded in the attribute *callConnId* for this PVC's ATM accounting records. If the value is a null string then this PVC does not have any accounting records generated for it.
Mib	AtmCore
Values	String (0..64, ASCII)
Default	""

GROUP **AtmIf Vpt Vpd** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable ATM Virtual Path Descriptor attributes for a *Vpt* component.
Mib	AtmCore

ATTRIBUTE **AtmIf Vpt Vpd** **vptType**

Access	Read and write
Description	This attribute specifies the type of the *Vpt*. A value of ***basic*** configures one level of traffic management (TM) for the VPT, at the VC level. VCs within the VP are treated like independent VCC connections, and thus, are scheduled the same as other VCs under the *AtmIf*, with no scheduling done for the VP itself. A value of ***standard*** configures two levels of traffic management (TM) for the VPT, one level for VP TM and one level for VC TM. VCs within the VP use weighted fair queuing to schedule the VCs within the VPT, with VCs differentiated as either real-time (CBR, rt-VBR) or non-real-time (nrt-VBR, UBR) connections. The VP itself has a full range of emission scheduling and service category differentiation available between itself and the other connections under the *AtmIf*. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm,*** and ***4pMRPosAtm*** cards, all *Vpts* must be ***basic***. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, *Vpts* may be of any type.

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Mib	AtmCore
Values	basic standard
Default	basic

COMPONENT Atmlf Vpt Vpd TrafficManagement (Tm)

Groups	GROUP AtmIf Vpt Vpd Tm Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd TrafficManagement,* *AtmIf/n Vpc/vci Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci Vcd TrafficManagement* This component contains provisioned traffic management attributes of a connection. It is added automatically when a *Vcc*, *Vpc,* or *Vpt* is added in provisioning mode. It is a mandatory subcomponent of the *Vcd* or *Vpd* component.
Mib	AtmCore
Opt. Subcomp.	COMPONENT AtmIf Vpt Vpd Tm AvailableBitRate (Abr)
Common Verbs	Help List Display

GROUP Atmlf Vpt Vpd Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains traffic related provisionable attributes for the *Vcc, Vpc,* and *Vpt* components. Changing any of the attributes in this group causes a service interruption on the *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vpd Tm txTrafficDescType (txTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2

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	3 4 5 6 7 8 9
Default	1

ATTRIBUTE Atmlf Vpt Vpd Tm fwdQosClass (fwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmCore
Values	0 1 2 3 4
Default	0

ATTRIBUTE Atmlf Vpt Vpd Tm txQueueLimit (txQlim)

Access	Read and write
Criticality	Component
Description	This attribute specifies an override to the default transmit queue limit for this connection. A value of ***sameAsCa*** means that the default common or per-VC transmit queue limit, as defined by the CA service category, is used for this

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connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***sameAsCa*** must be specified.

A value from 5 to 512,000 means that the connection transmit queue limit differs from the default common or per-VC transmit queue limit, as defined by the CA service category. A value other than ***sameAsCa*** is ignored for connections where common queuing is specified for the service category.

For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the per-VC utilization limit of the service category common queue.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from 5 to 512000 inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

On all other cards, the valid range for this attribute is from 5 to 63488 inclusive.

The actual transmit queue limit for a connection is visible in the *Vcc Tm*, *Vpc Tm* or *Vpt txQueueThresholds* attribute.

This attribute is not applicable for basic *Vpt*s.

Mib	AtmCore
Values	Decimal (5..1011840) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE **AtmIf Vpt Vpd Tm** **holdingPriority (hpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. The default holding priority for a provisioned connection is higher then default holding priorities for dynamic (SVC) connections. The value of this attribute may be overridden by certain applications, for example *Vcc Test*, which use this connection.

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This attribute is not applicable for *Vpt Vcc*s.

Mib AtmCore

Values
0
1
2
3
4

Default 2

ATTRIBUTE Atmlf Vpt Vpd Tm rxTrafficDescType (rxTdt)

Access Read and write

Criticality Component

Description This attribute specifies the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.

The value ***sameAsTx*** means the *rxTrafficDescType* as well as the *rxTrafficDescParm* attribute values are taken from the values of the *txTrafficDescType* and *txTrafficDescParm* attributes.

Mib AtmCore

Values
1
2
3
4
5
6
7
8
9
sameAsTx

Default sameAsTx

ATTRIBUTE Atmlf Vpt Vpd Tm bwdQosClass (bwdQos)

Access Read and write

Criticality Component

Description This attribute specifies the quality of service for the backward direction for this connection. This attribute is only used for SPVC connections.

Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video).

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

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

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmCore

Values:
0
1
2
3
4
sameAsFwd

Default: sameAsFwd

ATTRIBUTE **Atmlf Vpt Vpd Tm** **atmServiceCategory (service)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the ATM service category for both directions of the connection.

The value ***derivedFromBBC*** may only be used if the *Src* or *Dst* component is provisioned under this connection. Otherwise a specific ATM service category must be specified.

A value of ***derivedFromBBC*** means the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

A value other than ***derivedFromBBC*** means the value of this attribute is used to override the provisioned BBC Information Element parameters. In this case, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced

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value to the application.

The ***rtVariableBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real-time VBR service may support statistical multiplexing of real-time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non real-time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non real-time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) availableBitRate (abr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE Atmlf Vpt Vpd Tm **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

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This attribute is ignored if the *atmServiceCategory* is ***availableBitRate***.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmlrAtm*** cards, traffic shaping is not available, therefore this attribute is ignored.

A value of ***sameAsCa*** means traffic shaping for the connection is based on the value of the *trafficShaping* attribute of the connection's service category component under the *CA.* If the service category has *trafficShaping* set to ***enabled*** or ***inverseUpc***, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm, Vpc Tm,* or *Vpt Tm* components.

A value of ***disabled*** means traffic shaping for this connection is disabled regardless of the provisioning of the connection's service category component.

Mib — AtmCore

Values — disabled
sameAsCa

Default — sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm **unshapedTransmitQueueing (unshap)**

Access — Read and write

Criticality — Component

Description — This attribute specifies the transmit queuing method for this connection if it is unshaped. The two possible methods are per-VC queuing and common queuing. This attribute does not apply if the connection is shaped.

A value of ***sameAsCa*** means the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *CA*.

A value of ***common*** means transmit traffic on this unshaped connection is destined for the common queue.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmlrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmlrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmlrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmlrAtm***, and ***4pMRPosAtm*** cards, this attribute must have the value ***sameAsCa***.

This attribute is ignored in the following situations:
- if the connection has *trafficShaping* ***enabled*** or ***inverseUpc***, or
- if the *atmServiceCategory* is ***availableBitRate***, or

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- if the *atmServiceCategory* is ***constantBitRate***, or
- for basic *Vpt*s and standard *Vpt Vcc*s.

Mib	AtmCore
Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE **AtmIf Vpt Vpd Tm** **weight**

Access	Read and write
Criticality	Component
Description	This attribute specifies an override for the weight of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, and basic *Vpt*s. A value of ***sameAsCa*** means the weight is determined by the *weightPolicy* attribute under the *CA* service category component for all but standard *Vpt Vcc*s. For standard *Vpt Vcc*s, the weight is determined by the *Vcc*'s service category, when the value is set to ***sameAsCa***. A value from 1 to 4095 means that value is used for the fairness weight of this connection relative to other connections. For all but standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the *Vpt*. A value of ***upToQueueLimit*** means the fairness weight is limited only by the *txQueueLimit*. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value ***upToQueueLimit*** is not permitted.
Mib	AtmCore
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE **AtmIf Vpt Vpd Tm** **forceTagging (tagging)**

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Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR service category. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, and for *Vpt*s, this attribute is not applicable and is ignored. A value of ***sameAsCa*** means the force tagging functionality is determined by the *forceTagging* attribute under the *CA* service category component. A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection. A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. In this case, cells which are tagged are counted in the *txCellClp* attribute.
Mib	AtmCore
Values	sameAsCa enabled disabled
Default	sameAsCa

ATTRIBUTE **AtmIf Vpt Vpd Tm** **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enables usage parameter control (UPC) when receiving traffic from the ATM interface. The value ***sameAsCa*** means UPC for the connection is based on the value of the *usageParameterControl* attribute of the service category component under the *AtmIf CA.* If the service category has UPC ***enforced*** or ***monitored***, then UPC is enabled on the connection. The value ***disabled*** means UPC for this connection is disabled regardless of the provisioning of the service category. The value ***enforced*** means UPC for this connection is enforced regardless of the provisioning of the service category. When UPC is enforced, non-

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conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*.

The value ***monitored*** means UPC for this connection is monitored regardless of the provisioning of the service category. When UPC is monitored, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged.

Note that setting UPC to ***enforced*** or ***monitored*** may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc, Vpc,* and *Vpt* components.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported.

For ***1pOC48ChSmIrAtm*** cards, the values ***enforced***, and ***monitored***, are not supported.

Mib	AtmCore
Values	enforced disabled sameAsCa monitored
Default	sameAsCa

ATTRIBUTE **Atmlf Vpt Vpd Tm** **bearerClassBbc (bcBbc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the bearer capability. This attribute is only used for SPVC and SPVP connections. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based

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upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***) and timing requirements are user defined (that is, transparent to the network).When ***x*** is set the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class **vp** service is used to specify a transparent VP service. When the value of this attribute is vp, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except or VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP connections.

Mib: AtmCore

Values:
a
c
x
vp
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Vpd Tm **transferCapabilityBbc (tcBbc)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. Uni 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

The value ***notApplicable*** specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to traffic offered on services such as a constant

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bit rate video service or a circuit emulation.
The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required.

The value no for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmCore

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE **Atmlf Vpt Vpd Tm txWredThreshold**

Access: Read and write

Criticality: Component

Description

This attribute specifies the threshold for weighted random early detection (WRED). This threshold is calculated as a percentage of the early packet discard (EPD) threshold, which is 85% of the transmit queue length. When the value is ***25%***, WRED starts as soon as the queue is 25% of the way to the EPD threshold. When the value is ***50%***, WRED starts later, after the queue is 50% of the way to the EPD threshold. When the value is ***75%***, WRED starts only when the queue is 75% of the way to the EPD threshold.

This attribute is ignored if the value of the *txWredMode* or *txPacketWiseDiscard* attributes is ***disabled.***

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***,

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3pDS1Atm, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Mib	AtmCore
Values	Decimal (25; 50; 75)
Units	%
Default	25

ATTRIBUTE Atmlf Vpt Vpd Tm **clippingBbc (cBbc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Vpd Tm **bestEffort**

Access	Read and write
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmCore

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Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Vpd Tm **txPacketWiseDiscard (txpd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s. Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD). EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the “goodput” of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell. PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted. For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the packet-wise discard functions are PPD and EPD. PPD is applicable at cell-transfer points. PPD is not applicable at frame-to-cell conversion points, and is not applicable for *Vpc*s. PPD is configured by this attribute. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. EPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Both PPD and EPD are controlled by

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this attribute. This attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

For ***16pOC3PosAtm***, ***4pMRPosAtm*** and ***1pOC48ChSmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points. This attribute may safely be set to ***enabled*** for VCCs since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE **Atmlf Vpt Vpd Tm** **rxPacketWiseDiscard (rxpd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s.

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Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD).

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD is available at all VCC connection points where UPC may be activated. PPD is not applicable for *Vpcs*. Packet-wise discards should only be enabled for connections carrying AAL5 segmentation traffic. Setting the value to ***enabled*** for any other traffic type may result in traffic being discarded. PPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, this attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***1pOC48ChSmIrAtm*** cards, this attribute may safely be set to ***enabled*** for VCCs, since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. A value of ***enabled*** for the *rxPacketWiseDiscard* attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in enabling packet-wise discard functions on these cards. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point.

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At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup.

The receive packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm rxPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE **AtmIf Vpt Vpd Tm txWredMode**

Access	Read and write
Criticality	Component
Description	This attribute specifies the activation of weighted random early detection (WRED) functionality. WRED is considered a packet-wise discard function and as such applies only to AAL5 frame traffic. WRED is applied in the transmit direction for this connection. WRED function should be enabled only for connections which are transferring TCP/IP traffic. WRED acts to prevent synchronization of multiple TCP/IP sources by randomly discarding a small percentage of frames when transmit queue congestion reaches the designated level. WRED may also be used to differentiate service on VCC's by preferentially discarding one VCC before another. Discards start at 0% of cells, when the queue is part-way to the Early Packet Discard (EPD) threshold, and rise to 100% of cells discarded at the EPD threshold. WRED discards all the cells in a frame. A value of ***enabled*** means WRED is enabled for all applications linked to the given *Vcc*. A value of ***perFlow*** means each TCP application has individual control over whether to enable or disable WRED. If the value of the *txPacketWiseDiscard* attribute is ***disabled***, or if the value of this attribute is ***disabled***, WRED functionality is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, the value of this attribute must be ***disabled***. If WRED is active, it is visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute. This attribute is not applicable for *Vpt*s or *Vpt Vcc*s.

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Mib	AtmCore
Values	disabled enabled perFlow
Default	disabled

ATTRIBUTE Atmlf Vpt Vpd Tm **abrConnectionType (abrType)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of ABR behavior which is to be enforced at this connection. This attribute is only applicable if the value of the *atmServiceCategory* attribute is ***availableBitRate***. If the value of the *atmServicecategory* attribute is not ***availableBitRate***, this attribute is ignored. The value ***sameAsCa*** is used to request the default behavior as specified in the *CA Abr* component for this *Vcc*. Otherwise, this attribute overrides the default behavior. The value ***virtualSourceDest*** is used to request that this connection point function as a virtual source/virtual destination. The value ***sourceDest*** requires that this connection point function as a S/D for RM cells. S/D mode is automatically invoked at this connection point either if this is a connection end point, or if the next hop connection point is configured as ***nonAbrInterworking***. The value ***nonAbrInterworking*** is used to request that this connection point function as an interworking between ABR and non-ABR service categories. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***. The value ***abrSwitch*** is used to request ABR switch behavior for this connection point. The ABR switch behavior is first, to conform to ***virtualSourceDest*** or ***nonAbrInterworking*** setting on the next hop, and otherwise to implement ABR ER switch behavior. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the only allowable values are ***sameAsCa***, ***nonAbrInterworking*** or ***abrSwitch***. If ***abrSwitch*** is selected, EFCI marking behavior is implemented. For ***1pOC12SmLrAtm*** cards, the only allowable values are ***sameAsCa*** or ***abrSwitch.*** If ***abrSwitch*** is selected, EFCI marking behavior is implemented. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the only allowable value is

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sameAsCa.

The actual ABR functionality which is in effect is visible in the *Vcc/Vpc/Vpt Tm abrConnectionType* operational attribute.

Mib	AtmCore
Values	abrSwitch virtualSourceDest sourceDest nonAbrInterworking sameAsCa
Default	sameAsCa

ATTRIBUTE **Atmlf Vpt Vpd Tm** **txTrafficDescParm (txTdp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR, MCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *txTrafficDescType* is 1 or 2, all of the parameters must be set to zero. When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell tagging; parameter 2 represents the PCR

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for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 4 and parameter 5 represent are not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may be optionally zero.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate. When the *atmServiceCategory* is ***availableBitRate*** (ABR), the shaping rate is dynamically chosen, based on the ABR flow control mechanism, as a value between the MCR and the PCR or the requested shaping rate if applicable.

For *txTrafficDescType* 3, 4 and 5, the transmit traffic is shaped at the next

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available shaping rate less than the PCR.

For *txTrafficDescType* 6, 7 and 8 if linear traffic shaping is selected, the transmit traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

For *txTrafficDescType* 3 ,4,5,6,7 and 8, with ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, parameter 4 must be less than or equal to 643,000.

For *txTrafficDescType* 6, 7 and 8 if inverse-UPC traffic shaping is selected, the transmit traffic is shaped at a variable rate which conforms to the PCR, SCR and MBS of the connection traffic descriptor.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **Atmlf Vpt Vpd Tm** **rxTrafficDescParm (rxTdp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. If the value of the *rxTrafficDescType* attribute is ***sameAsTx***, the values provisioned in this attribute are ignored. The traffic parameters for the receive direction are taken from the *txTrafficDescParm* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), and Minimum Cell Rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for usage parameter control (UPC). When *rxTrafficDescType* is 1 or 2, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP

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equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

If the value of CDVT either in parameter 2 or in parameter 4 is zero, the CDVT is taken from the *CA* defaults for the particular *atmServiceCategory* of this connection.

Parameter 5 of the *rxTrafficDescParm* is always unused.

When *rxTrafficDescriptorType* is 3 through 8, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware. The *check prov* command detects such cases and generates an error message. If this happens, adjust the parameters until they fall within the supported limits.
To calculate the limits, use the following formulae:
I1 = 1,000,000,000 / PCR
L1 = CDVT * 1000
I2 = 1,000,000,000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is 6 through 8.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, I1 and I2 must

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be less than or equal to 335,523,840. I1 + L1 must be less than or equal to 1,342,156,800. I2 + L2 must be less than or equal to 1,342,156,800. If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41,940,480 or
I2 > 41,940,480 or
I1 + L1 > 167,769,600 or
I2 + L2 > 167,769,600
then both I1 and I2 must be greater than 20,480.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, L2 must be less than or equal to 2,674,011,406.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, L2 must be less than or equal to 17,179,869,180.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **Atmlf Vpt Vpd Tm** **fwdQosParameters (fqp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The *cdv* element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR the CDV is irrelevant, and its value is forced to the default. The *ctd* specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end to end transit delay information element. For nrt-VBR and UBR the CTD is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.

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Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE Atmlf Vpt Vpd Tm **bwdQosParameters (bqp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of two elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The *cdv* specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR, the CDV is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv clr
Default	(cdv: 16777215, clr: 255)

COMPONENT Atmlf Vpt Vpd Tm **AvailableBitRate (Abr)**

Groups	GROUP Atmlf Vpt Vpd Tm Abr Provisioned (Prov)
Scope	Device
Description	*Atmlf/n Vcc/vpi.vci Vcd Tm AvailableBitRate,* *Atmlf/n Vpc/vci Vpd Tm AvailableBitRate,* *Atmlf/n Vpt/vpi Vpd Tm AvailableBitRate,* *Atmlf/n Vpt/vpi Vcc/vci Vcd Tm AvailableBitRate* This component contains provisioned ABR-related attributes of a connection. It is an optional subcomponent of the *Vcd Tm* and *Vpd Tm* component. It is used to override DGCRA-related defaults in the *CA Abr* component. It contains the specific configuration for the ABR connection at this connection point. If this is the source of an SPVC connection, this

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component also contains the ABR parameters required for the SPVC call request.

Mib: AtmCore

Common Verbs: Help, List, Display, Add, DELete

GROUP Atmlf Vpt Vpd Tm Abr **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains provisioned attributes for the ABR ATM connections configured on an ATM interface.

Mib: AtmCore

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **initialCellRate (icr)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period.

The value ***sameAsCa*** means the initial cell rate is determined by the *AtmIf CA Abr*/0 *icr* attribute.

The value ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection.

The value ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection.

If the value is less than the MCR of the connection, then the MCR is used as the ICR. If the value is more than PCR of the connection, then PCR is used as the ICR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.

Mib: AtmCore

Values: Decimal (0..16777215)
sameAsCa
useMcr
usePcr

Units: cell/s

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Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **transientBufferExposure (tbe)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the source to send during start-up periods, before the first Resource Management (RM) cell returns. TBE divided by *fixedRoundTripTime* determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. TBE divided by *maxCellsPerRmCell* specifies the operational value of *forwardRmCellLimit*, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* is set to ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	16777215

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **fixedRoundTripTime (frtt)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. The value of *transientBufferExposure* divided by the value of FRTT (in seconds) determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec

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Default	5000000

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **rateDecreaseFactor (rdf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **rateIncreaseFactor (rif)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..15) sameAsCa

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Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **maxCellPerRmCell (nrm)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. A value of 2 is not recommended although it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly transmitted, and all data traffic is queued up indefinitely. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **maxTimeBetweenRmCells (trm)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the TRM parameter for this connection. TRM provides an lower bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least two other cells have been sent, then the next cell to be transmitted would be a forward RM cell. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***. The provisioned value of 781 is signaled as TRM = 0, in the ABR Additional Parameters Information Element. 1563 is signaled as TRM = 1. 3125 is signaled as TRM = 2. 6250 is signaled as TRM = 3. 12500 is signaled as TRM = 4 25000 is signaled as TRM = 5. 50000 is signaled as TRM = 6.

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100000 is signaled as TRM = 7.

Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **cutoffDecreaseFactor (cdf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is indicated by the *forwardRmCellLimit* attribute. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64) sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **acrDecreaseTimeFactor (adtf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the maximum time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a

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forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.

Mib	AtmCore
Values	Decimal (0..1023) sameAsCa
Units	centiseconds
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **dgcraMaximumDelay (dgcraMaxDelay)**

Access	Read and write
Criticality	Component
Description	This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward direction). This upper bound may be approximated as the sum of the round trip fixed and propagation delays and the maximum queuing delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When there is a reduction in the Allowed Cell Rate (ACR), the policer waits for a correspondingly longer period of time before it enforces at the new cell rate. The value of this attribute must not be less than the *dgcraMinimumDelay* attribute.
Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **dgcraMinimumDelay (dgcraMinDelay)**

Access	Read and write
Criticality	Component
Description	This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is

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expected to be observed at this connection point (in the forward connection).

This lower bound may be approximated as the sum of the round trip fixed and propagation delays between the ABR source and this interface.

The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A smaller value for this attribute implies a more lenient policer. When there is a increase in the Allowed Cell Rate (ACR), the policer waits for a correspondingly shorter period of time before it enforces at the new cell rate.

Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **farEndAcrDecreaseTimeFactor (feAdtf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) of the far end ABR source. The value specified should be the same as the ADTF parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the value of this attribute, the policer begins to limit enforce the incoming traffic at the initial cell rate (ICR) of the far end, as specified by the *farEndInitialCellRate* attribute.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	50

ATTRIBUTE Atmlf Vpt Vpd Tm Abr **farEndInitialCellRate (feIcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) of the far end ABR source. The value specified should be the same as the ICR parameter at the far end of this ABR connection.

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The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the *farEndAcrDecreaseTimeFactor* attribute, the policer begins to enforce the incoming traffic at the value of this attribute.

If this attribute is specified less than the MCR of the connection, then the MCR is used as the *felcr*. If this attribute is more than the PCR of the connection, then PCR is used as the *felcr*.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	0

COMPONENT AtmIf Vpt ConnectionAdministrator (CA)

Groups	GROUP AtmIf Vpt CA Provisioned (Prov) GROUP AtmIf Vpt CA Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpt/n ConnectionAdministrator* This component controls connection admission and reports statistics about the ATM connections which have been admitted on this Virtual Path Terminator (VPT). If the VPT does not have the optional *CA* component, all connections associated with the given *VPT* attempt their admission through the *AtmIf CA*. The provisionable attributes of this *ConnectionAdministrator* override those of the *AtmIf CA,* for all connections associated with this *Vpt*. Any attributes

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of the *AtmIf CA* that cannot be overridden in the *Vpt CA* affect all connections, including *Vpt* VCCs.

Mib AtmCore

Subcomponents
COMPONENT AtmIf Vpt CA ConstantBitRate (Cbr)
COMPONENT AtmIf Vpt CA RealTimeVariableBitRate (RtVbr)
COMPONENT AtmIf Vpt CA NonRealTimeVariableBitRate (NrtVbr)
COMPONENT AtmIf Vpt CA AvailableBitRate (Abr)
COMPONENT AtmIf Vpt CA UnspecifiedBitRate (Ubr)

Common Verbs
Help
List
Display
Add
DELete

GROUP AtmIf Vpt CA Provisioned (Prov)

Properties Provisioned

Description This group contains provisioned attributes which specify the behavior of Connection Admission Control (CAC) for the ATM connections associated with a Virtual Path Terminator. Note that the names of some of the attributes follow the conventions of UNI 4.0 for forward compatibility reasons. This does not imply conformance in general with the UNI 4.0 specification.

The provisioned attributes of this *ConnectionAdministrator* override those of the *AtmIf CA,* for all connections associated with this *Vpt* component. Any attributes of the *AtmIf CA* that cannot be overridden in the *Vpt CA* affect all connections, including *Vpt* VCCs.

Mib AtmCore

ATTRIBUTE AtmIf Vpt CA maxVccs (vccs)

Access Read and write

Criticality Component

Description This attribute specifies the maximum number of VCCs that can be associated with this *Vpt* component. The value must not exceed the *maxVccs* attribute of the *Atmif CA*.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***2pSTM1eCh***, ***2pSTM1Ch*** and MSA32 cards, the value is ***100***. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value is ***127***. For all other cards, the value is ***255***.

Mib AtmCore

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Values	Decimal (0..16384) autoConfigure
Default	autoConfigure

ATTRIBUTE Atmlf Vpt CA permittedAtmServiceCategories (permitAtm)

Access	Read and write
Criticality	Component
Description	This attribute specifies which ATM service categories are permitted on this *Vpt* for SVCs. The value of this attribute does not affect control VCCs, such as signaling and ILMI channels. If the value is empty, no SVCs are permitted to use this *Vpt*.
Mib	AtmCore
Set of	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	(unspecifiedBitRate, constantBitRate, rtVariableBitRate, nrtVariableBitRate)

ATTRIBUTE Atmlf Vpt CA bandwidthPool (bwPool)

Access	Read and write
Description	Total *Vpt* bandwidth capacity is partitioned into five bandwidth pools. This attribute specifies the percentage of *Vpt* bandwidth that is allowed for each pool. The percentage for each pool ranges from 0% to 12,800%. This allows for both under and over subscription of the *Vpt* bandwidth. Under subscription occurs when the sum of the percentages assigned to the five pools is less than 100%. Over subscription occurs when the sum of the percentages for the five pools exceeds 100%.
Mib	AtmCore
Vector of	Decimal (0..12800)
Units	%
Index	Decimal (1..5)
Default	(100, 0, 0, 0, 0)

GROUP Atmlf Vpt CA Operational (Oper)

Properties	Operational
Description	This group contains operational attributes giving statistics about the ATM connections associated with a Virtual Path Terminator (VPT).
Mib	AtmCore

ATTRIBUTE Atmlf Vpt CA actualMaxVccs (mVccs)

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Access	Read only
Description	This attribute indicates the maximum number of VCCs that can be supported on this *Vpt*. The value includes both provisioned and dynamic connections. This value is determined from the provisioned attribute *maxVccs*.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Atmlf Vpt CA **permanentVccs (pVccs)**

Access	Read only
Description	This attribute indicates the number of permanent VCCs that are currently associated with this *Vpt*.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Atmlf Vpt CA **switchedVccs (sVccs)**

Access	Read only
Description	This attribute indicates the number of switched VCCs that are currently associated with this *Vpt*.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Atmlf Vpt CA **troubledVccs (trVccs)**

Access	Read only
Description	This attribute indicates the number of troubled VCCs associated with this *Vpt*. A *Vcc* is “troubled” if its operational *troubled* attribute has the value ***yes***.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Atmlf Vpt CA **connectionPoolUsage (connUsage)**

Access	Read only
Description	This attribute indicates the number of allocated VCCs associated with this *Vpt*.

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	Each of these VCCs uses a single connection. Each *Vcc* reduces the number of connections indicated in the *Lp Eng Arc connectionPoolAvailable*, or *protectedConnectionPoolAvailable* attributes, and increases the number of connections indicated in *Arc connectionPoolUsage*, or *protectedConnectionPoolUsage* attributes.
Mib	AtmCore
Values	Decimal (0..10752)
Default	No default

ATTRIBUTE Atmlf Vpt CA poolAvailableBandwidth (poolAvailBw)

Access	Read only
Description	This attribute indicates the total available bandwidth in the bandwidth pool. A positive value indicates that there is still bandwidth available in the pool which has not been allocated. A negative value indicates that some bandwidth-elastic provisioned connections are running in reduced mode, where their allocated bandwidth is below their originally allocated ECR. The negative amount is equal to the sum of the *bwReduction* attribute for all connections.
Mib	AtmCore
Vector of	Signed (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vpt CA poolProvisionedBandwidth (poolProvBw)

Access	Read only
Description	This attribute indicates the total bandwidth from the bandwidth pool that is specified by provisioned connections. The value of this attribute is the sum of the equivalent cell rate (ECR) of the provisioned connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vpt CA poolRequestedBandwidth (poolRequBw)

Access	Read only

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Description	This attribute indicates the total requested bandwidth from the bandwidth pool. This attribute includes the bandwidth for ATM networking signaling connections. The value of this attribute is the sum of the equivalent cell rate (ECR) for connections which are admitted, and for connections which are requesting admission, but have not yet been admitted.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vpt CA **poolAdmittedBandwidth (poolAdmitBw)**

Access	Read only
Description	This attribute indicates the total admitted bandwidth from the bandwidth pool. This attribute includes the bandwidth for ATM networking signaling connections. The value of this attribute is the sum of the equivalent cell rate (ECR) of the admitted connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vpt CA **poolAdmittedConnections (poolAdmConns)**

Access	Read only
Description	This attribute counts the connections which are currently admitted in the bandwidth pool. This attribute includes ATM networking signaling connections.
Mib	AtmCore
Vector of	Decimal (0..16384)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vpt CA **poolWaitAdmitConnections (poolWaitAdmConns)**

Access	Read only
Description	This attribute counts the connections which have requested admission in the bandwidth pool but are not yet admitted. This attribute does not include ATM networking signaling connections.

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Mib	AtmCore
Vector of	Decimal (0..16384)
Index	Decimal (1..5)
Default	No default

COMPONENT AtmIf Vpt CA ConstantBitRate (Cbr)

Instance	Decimal (0)
Groups	GROUP AtmIf Vpt CA Cbr Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vpt/n CA ConstantBitRate/n* This component controls default characteristics of the constant bit rate (CBR) service category, for VCCs administered by this *CA*. Any attributes of the *AtmIf CA Cbr* that cannot be overridden in the *Vpt CA Cbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf Vpt CA Cbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control Connection Admission Control (CAC) and Usage Parameter Control (UPC) attributes for the CBR ATM connections managed by this *Vpt*. Any attributes of the *AtmIf CA Cbr* that cannot be overridden in the *Vpt CA Cbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA Cbr pool

Access	Read and write
Criticality	Component
Description	This attribute specifies the bandwidth pool which is to be used to support the constant bit rate (CBR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to CBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore

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Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE Atmlf Vpt CA Cbr **cdvt**

Access	Read and write
Criticality	Component
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for connections of the CBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required by a given CBR connection. The larger the value of CDVT, the larger is its ECR. If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..10000)
Units	microsec
Default	250

ATTRIBUTE Atmlf Vpt CA Cbr **cdv**

Access	Read and write
Description	This attribute specifies the peak-to-peak cell delay variation (CDV) which is contributed to all CBR connections associated with this *Vpt*. The CDV is a measure of the delay jitter introduced mostly by traffic buffering and cell scheduling. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this *Vpt* can meet the CDV requirement for that connection. If so, the value of this attribute is added to the cumulative CDV field of the extended QoS information element.
Mib	AtmCore

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Values	Decimal (0..16777215)
Units	microsec
Default	250

ATTRIBUTE Atmlf Vpt CA Cbr **maxCtd**

Access	Read and write
Description	This attribute specifies the maximum cell transfer delay (MaxCTD) which is applied to all CBR connections associated with this *Vpt*. MaxCTD is the sum of the fixed delay and the CDV. The components of the fixed delay include propagation delay through the physical media, delays induced by the transmission system and fixed components of switch processing delay. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this *Vpt* can meet the ATM connection's MaxCTD requirement.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	1000

ATTRIBUTE Atmlf Vpt CA Cbr **cellLossRatio (clr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the tolerable cell loss ratio (CLR) for CBR traffic. The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be the same as the value of the *RtVbr cellLossRatio* attribute since CBR and rt-VBR traffic have the same discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for CBR connections. There is a trade-off between the service category CLR and the achievable *Vpt* bandwidth utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower *Vpt* bandwidth utilization. A value of ***anyClrValue*** means that no bandwidth is reserved for CBR

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connections, and CAC is effectively turned off. All CBR connections are admitted.

Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	10

COMPONENT AtmIf Vpt CA RealTimeVariableBitRate (RtVbr)

Instance	Decimal (0)
Groups	GROUP AtmIf Vpt CA RtVbr Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vpt/n CA RealTimeVariableBitRate/n* This component controls default characteristics of the real-time variable bit rate (rt-VBR) service category, for VCCs administered by this *CA*. Any attributes of the *AtmIf CA RtVbr* that cannot be overridden in the *Vpt CA RtVbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf Vpt CA RtVbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control Connection Admission Control (CAC) for the rt-VBR ATM connections associated with this *Vpt*. Any attributes of the *AtmIf CA RtVbr* that cannot be overridden in the *Vpt CA RtVbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA RtVbr pool

Access	Read and write
Criticality	Component
Description	This attribute specifies the bandwidth pool which is to be used to support the real-time variable bit rate (rt-VBR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to rt-VBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore

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Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf Vpt CA RtVbr **cdv**

Access	Read and write
Description	This attribute specifies the peak-to-peak cell delay variation (CDV) which is contributed to all rt-VBR connections associated with this *Vpt*. The CDV is a measure of the delay jitter introduced mostly by traffic buffering and cell scheduling. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this *Vpt* can meet the CDV requirement for that connection. If so, the value of this attribute is added to the cumulative CDV field of the extended QoS information element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	1268

ATTRIBUTE AtmIf Vpt CA RtVbr **maxCtd**

Access	Read and write
Description	This attribute specifies the maximum cell transfer delay (MaxCTD) which is applied to all rt-VBR connections associated with this *Vpt*. MaxCTD is the sum of the fixed delay and the CDV. The components of the fixed delay include propagation delay through the physical media, delays induced by the transmission system and fixed components of switch processing delay. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this *Vpt* can meet the ATM connection's MaxCTD requirement.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec

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Default	2000

ATTRIBUTE AtmIf Vpt CA RtVbr cellLossRatio (clr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the tolerable cell loss ratio (CLR) for rt-VBR traffic. The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be the same as the value of the *Cbr cellLossRatio* attribute since CBR and rt-VBR traffic have the same discard priority. The value of this attribute must also be greater than or equal to the value of the *NrtVbr cellLossRatio* attribute since rt-VBR traffic has a higher discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for rt-VBR connections. There is a trade-off between the service category CLR and the achievable *Vpt* bandwidth utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower *Vpt* bandwidth utilization. A value of ***anyClrValue*** means that no bandwidth is reserved for rt-VBR connections and CAC is effectively turned off. All rt-VBR connections are admitted.
Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	10

COMPONENT AtmIf Vpt CA NonRealTimeVariableBitRate (NrtVbr)

Instance	Decimal (0)
Groups	GROUP AtmIf Vpt CA NrtVbr Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vpt/n CA NonRealTimeVariableBitRate/n* This component controls default characteristics of the non-real-time variable bit rate (nrt-VBR) service category, for VCCs administered by this

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CA. Any attributes of the *AtmIf CA NrtVbr* that cannot be overridden in the *Vpt CA NrtVbr* affect all connections, including *Vpt* VCCs.

Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf Vpt CA NrtVbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control Connection Admission Control (CAC) for the nrt-VBR ATM connections associated with this *Vpt*. Any attributes of the *AtmIf CA NrtVbr* that cannot be overridden in the *Vpt CA NrtVbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA NrtVbr pool

Access	Read and write
Criticality	Component
Description	This attribute specifies the bandwidth pool which is to be used to support the non-real time variable bit rate (nrt-VBR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to nrt-VBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf Vpt CA NrtVbr cellLossRatio (clr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the tolerable cell loss ratio (CLR) for nrt-VBR traffic. The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be less than or equal to the value of the *RtVbr cellLossRatio* attribute since rt-VBR traffic has a higher

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discard priority.

This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for nrt-VBR connections.

There is a trade-off between the service category CLR and the achievable *Vpt* bandwidth utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower *Vpt* bandwidth utilization.

A value of ***anyClrValue*** means that no bandwidth is reserved for nrt-VBR connections and CAC is effectively turned off. All nrt-VBR connections are admitted.

Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	7

COMPONENT AtmIf Vpt CA AvailableBitRate (Abr)

Instance	Decimal (0)
Groups	GROUP AtmIf Vpt CA Abr Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vpt/n CA AvailableBitRate/n* This component controls default characteristics of the available bit rate (ABR) service category, for VCCs administered by this *CA*. Any attributes of the *AtmIf CA Abr* that cannot be overridden in the *Vpt CA Abr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf Vpt CA Abr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control Connection Admission Control (CAC) for ABR connections associated with this *Vpt*. Any attributes of the *AtmIf CA Abr* that cannot be overridden in the *Vpt CA Abr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

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ATTRIBUTE AtmIf Vpt CA Abr pool

Access	Read and write
Criticality	Component
Description	This attribute specifies the bandwidth pool which is to be used to support the available bit rate (ABR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to ABR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

COMPONENT AtmIf Vpt CA UnspecifiedBitRate (Ubr)

Instance	Decimal (0)
Groups	GROUP AtmIf Vpt CA Ubr Provisioned (Prov) GROUP AtmIf Vpt CA Ubr Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpt/n CA UnspecifiedBitRate/n* This component controls default characteristics of the unspecified bit rate (UBR) service category, for VCCs administered by this *CA*. Any attributes of the *AtmIf CA Ubr* that cannot be overridden in the *Vpt CA Ubr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf Vpt CA Ubr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control Connection Admission Control (CAC) attributes for UBR connections associated with this *Vpt*. Any attributes of the *AtmIf CA Ubr* that cannot be overridden in the *Vpt CA Ubr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

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ATTRIBUTE Atmlf Vpt CA Ubr **maxVccs (vccs)**

Access	Read and write
Description	This attribute specifies the maximum number of UBR VCCs that can be associated with this *Vpt*. The value of this attribute must not exceed the *maxVccs* attribute of the parent *Vpt CA* component. A value of ***sameAsCa*** means the maximum number of UBR VCCs is defined by the *maxVccs* attribute of the *Vpt CA*. Changes to this attribute are not critical to the *Vpt*, and do not affect existing VCCs. If the value is changed to a number smaller than the current number of active UBR VCCs, no new UBR VCCs are admitted until the number of active UBR VCCs drops below the value of this attribute. The current number of active UBR VCCs is indicated by the *vccUsage* operational attribute of the *Vpt CA Ubr* component.
Mib	AtmCore
Values	Decimal (0..16384) sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpt CA Ubr **pool**

Access	Read and write
Criticality	Component
Description	This attribute specifies the bandwidth pool which is to be used to support the unspecified bit rate (UBR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to UBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE Atmlf Vpt CA Ubr **minimumCellRate (mcr)**

Access	Read and write
Description	This attribute specifies the default minimum cell rate (MCR) which is allocated from the UBR bandwidth pool for each UBR connection which is admitted using Connection Admission Control (CAC). UBR connections

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	normally are serviced on a best effort basis, but this attribute allows allocation of a default minimum bandwidth for each connection.
Mib	AtmCore
Values	Decimal (0..2147483647)
Default	0

GROUP **AtmIf Vpt CA Ubr** **Operational (Oper)**

Properties	Operational
Description	This group contains operational attributes for UBR connections associated with this *Vpt*.
Mib	AtmCore

ATTRIBUTE **AtmIf Vpt CA Ubr** **vccUsage**

Access	Read only
Description	This attribute indicates the number of active UBR VCCs associated with this *Vpt*. It includes switched and permanent connections.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

COMPONENT **AtmIf Vpt** **Iisp**

Groups	GROUP AtmIf Vpt Iisp Provisioned (Prov) GROUP AtmIf Vpt Iisp AccountingOptions (AcctOpt) GROUP AtmIf Vpt Iisp VIispProvisioned (VProv)
Scope	Device
Description	*AtmIf/n VirtualPathTerminator/m Iisp* This component represents a virtual ATM Interim Inter-switch Signaling Protocol (IISP) interface. If this component is provisioned, neither a *Uni*, an *Aini,* nor a *Pnni* component can be provisioned under the same *Vpt*

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component. If this component is deleted, then all associated *Vcc* components are deleted.

Mib	Atmlisp
Subcomponents	COMPONENT AtmIf Vpt Iisp Signalling (Sig)
Opt. Subcomp.	COMPONENT AtmIf Vpt Iisp CallingAddressScreening (CallingAScr) COMPONENT AtmIf Vpt Iisp CalledAddressScreening (CalledAScr) COMPONENT AtmIf Vpt Iisp PathTraceFilter (Ptf) COMPONENT AtmIf Vpt Iisp ServiceTrace (SrvTrace) COMPONENT AtmIf Vpt Iisp Reroute
Dyn. Subcomp.	COMPONENT AtmIf Vpt Iisp PathTraceTestConnection (Ptt)
Dyn. Subcomp.	COMPONENT AtmIf Vpt Iisp Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Iisp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Iisp* component.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt Iisp version

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which specification the IISP interface complies with. The options are ***iisp10Sig30*** which refers to IISP version 1.0 with 3.0 signaling and ***iisp10Sig31*** which refers to IISP version 1.0 with 3.1 signaling. If this attribute is changed, all switched *Vcc* components in this interface are cleared due to the fact that the two versions are incompatible.
Mib	Atmlisp
Values	iisp10Sig30 iisp10Sig31
Default	iisp10Sig31

ATTRIBUTE Atmlf Vpt Iisp side

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Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	Atmlisp
Values	networkSide userSide
Default	networkSide

ATTRIBUTE Atmlf Vpt lisp **softPvpAndPvcRetryPeriod (sRetryPeriod)**

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	Atmlisp
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE Atmlf Vpt lisp **softPvpAndPvcHoldOffTime (sHoldOffTime)**

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	Atmlisp
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE Atmlf Vpt lisp **interDomainCrankback**

Access	Read: All Write: All

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Description	This attribute specifies whether the ATM Routing System inserts a Crankback information element (IE) when hop-by-hop routing crankback fails in a neighboring domain and this node is the DTL terminating node of the call. By default, the ATM Routing System, when behaving as a DTL terminating node of a call, only inserts a Crankback IE if the routing system fails to find a static routing port that matches the called address. If this attribute is set to enabled, then a Crankback IE is also inserted when hop-by-hop crankback fails. This attribute may be provisioned on IISP links that connect two PNNI domains. Note that the cause codes that trigger the insertion of the Crankback IE are the same as those that apply to PNNI crankback normally. Not all of these cause codes apply to hop-by-hop routing. The insertion of a Crankback IE can cause extra call setup attempts in certain configurations such as PNNI domains interconnected by IISP links.
Mib	AtmIisp
Values	disabled enabled
Default	disabled

GROUP **AtmIf Vpt Iisp** **AccountingOptions (AcctOpt)**

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmIisp

ATTRIBUTE **AtmIf Vpt Iisp** **accountCollection (aco)**

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed.

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	The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	Atmlisp
Set of	bill test study audit force
Default	No default

ATTRIBUTE Atmlf Vpt lisp accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***. If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.
Mib	Atmlisp
Values	origTerm intermediate
Default	intermediate

ATTRIBUTE Atmlf Vpt lisp accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	Atmlisp
Values	Decimal (0..255)

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Default	0

ATTRIBUTE Atmlf Vpt lisp **serviceExchange (sre)**

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	Atmlisp
Values	Decimal (0..255)
Default	0

GROUP Atmlf Vpt lisp **VlispProvisioned (VProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *lisp* component which are specific to virtual IISP interfaces.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp **vpci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Virtual Path Connection Identifier (VPCI) to be used between this signaling entity and its peer. The VPCI of the peer virtual IISP must have the same value for switched connections to be set up across the interface.
Mib	Atmlisp
Values	Decimal (0..255)
Default	0

COMPONENT Atmlf Vpt lisp **Signalling (Sig)**

Groups	GROUP Atmlf Vpt lisp Sig Provisioned (Prov) GROUP Atmlf Vpt lisp Sig OsiState (State) GROUP Atmlf Vpt lisp Sig Operational (Oper) GROUP Atmlf Vpt lisp Sig Statistics (Stats)
Scope	Device
Description	*Atmlf/n Aini Signalling* *Atmlf/n Iisp Signalling* *Atmlf/n Uni Signalling*

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AtmIf/n Pnni Signalling
AtmIf/n Vpt/m Aini Signalling
AtmIf/n Vpt/m Iisp Signalling
AtmIf/n Vpt/m Uni Signalling
AtmIf/n Vpt/m Pnni Signalling

This component represents the signaling entities for the interface.

Mib	Atmlisp
Opt. Subcomp.	COMPONENT AtmIf Vpt Iisp Sig VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP AtmIf Vpt Iisp Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	Atmlisp

ATTRIBUTE AtmIf Vpt Iisp Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	Atmlisp
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Vpt Iisp Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.

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Mib	AtmIisp
Values	none nativeE164 nsap
Default	none

ATTRIBUTE Atmlf Vpt Iisp Sig **operatingMode**

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmIisp
Values	normal provisionedOnly
Default	normal

GROUP Atmlf Vpt Iisp Sig **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmIisp

ATTRIBUTE Atmlf Vpt Iisp Sig **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — AtmIisp

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Atmlf Vpt lisp Sig **operationalState (osiOper)**

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — AtmIisp

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Atmlf Vpt lisp Sig **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — AtmIisp

Values — idle
active (activ)
busy

Default — idle

GROUP Atmlf Vpt lisp Sig **Operational (Oper)**

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Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp Sig **lastTxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	Atmlisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **lastTxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	Atmlisp
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **lastRxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	Atmlisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **lastRxDiagCode**

Access	Read: All Write: Illegal

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Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	Atmlisp
Values	Hex (H.0..H.ff)
Default	No default

GROUP Atmlf Vpt lisp Sig **Statistics (Stats)**

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp Sig **peakConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **successfulConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **failedConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.

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Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **txPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **rxPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **currentPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **peakPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	Atmlisp
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **successfulPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **failedPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Sig **currentConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to-point connections.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Vpt lisp Sig **VirtualChannelDescriptor (Vcd)**

Groups	GROUP Atmlf Vpt lisp Sig Vcd Provisioned (Prov)
Scope	Device
Description	*Atmlf/n Uni Sig VirtualChannelDescriptor* *Atmlf/n Uni Ilmi VirtualChannelDescriptor* *Atmlf/n Aini Sig VirtualChannelDescriptor* *Atmlf/n lisp Sig VirtualChannelDescriptor* *Atmlf/n Pnni Sig VirtualChannelDescriptor* *Atmlf/n Pnni Rcc VirtualChannelDescriptor*

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AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor

This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).

Mib: AtmIisp

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Vpt Iisp Sig Vcd Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable traffic attributes for a control channel.

Mib: AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd trafficDescType (tdt)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib: AtmIisp

Values:
3
6
7
8

Default: 6

Flags: HCA_SUPPORT

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd atmServiceCategory (service)

Access: Read: All
Write: All

Criticality: Component

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Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.
Mib	AtmIisp
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Iisp Sig Vcd** **weight**

Access	Read and write
Criticality	Component

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Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmIisp
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Iisp Sig Vcd** **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance

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requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib	Atmlisp
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt lisp Sig Vcd trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components. When ***disabled*** is selected, traffic shaping for this connection is disabled.
Mib	Atmlisp
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt lisp Sig Vcd unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA*

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service category subcomponent for more details on the meaning of this attribute.

When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*.

When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib	AtmIisp
Values	common sameAsCa
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Iisp Sig Vcd** **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmIisp
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

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ATTRIBUTE **AtmIf Vpt Iisp Sig Vcd trafficDescParm (tdp)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2. When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2. When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or

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equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

COMPONENT Atmlf Vpt Iisp Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate default]
Groups	GROUP AtmIf Vpt Iisp Addr Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type* *AtmIf/n Pnni Address/address,type* *AtmIf/n Vpt/m Aini Address/address,type* *AtmIf/n Vpt/m Iisp Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* *AtmIf/n Vpt/m Pnni Address/address,type*

This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard (‘?’), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address.

The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of

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type ***default***.

The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib	Atmlisp
Opt. Subcomp.	COMPONENT AtmIf Vpt Iisp Addr TerminateSPvpAndSPvc (TermSP) COMPONENT AtmIf Vpt Iisp Addr PnniInfo
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Iisp Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	Atmlisp

ATTRIBUTE AtmIf Vpt Iisp Addr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.
Mib	Atmlisp
Values	Signed (-1..104)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Addr reachability (reach)

Access	Read: All Write: Illegal

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Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	Atmlisp
Values	internal exterior
Default	No default

COMPONENT Atmlf Vpt lisp Addr TerminateSPvpAndSPvc (TermSP)

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n lisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m lisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc* The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.
Mib	Atmlisp
Common Verbs	Help List Display Add DELete

COMPONENT Atmlf Vpt lisp Addr PnniInfo

Groups	GROUP Atmlf Vpt lisp Addr PnniInfo Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Aini Addr/address,type PnniInfo* *AtmIf/n lisp Addr/address,type PnniInfo* *AtmIf/n Uni Addr/address,type PnniInfo* *AtmIf/n Pnni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Aini Addr/address,type PnniInfo* *AtmIf/n Vpt/m lisp Addr/address,type PnniInfo* *AtmIf/n Vpt/m Uni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo*

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This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.

Mib: AtmIisp

Common Verbs: Help, List, Display, Add, DELete

GROUP AtmIf Vpt Iisp Addr PnniInfo Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.

Mib: AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Addr PnniInfo scope

Access: Read: All, Write: All

Criticality: Component

Description: This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.

Mib: AtmIisp

Values: Signed (-1..104)

Default: -1

ATTRIBUTE AtmIf Vpt Iisp Addr PnniInfo reachability (reach)

Access: Read: All, Write: All

Criticality: Component

Description: This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib: AtmIisp

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Values	internal exterior
Default	internal

COMPONENT Atmlf Vpt lisp CallingAddressScreening (CallingAScr)

Groups	GROUP Atmlf Vpt lisp CallingAScr Provisioned (Prov) GROUP Atmlf Vpt lisp CallingAScr Statistics (Stat)
Scope	Device
Description	*Atmlf/n Aini CallingAddressScreening* *Atmlf/n Uni CallingAddressScreening* *Atmlf/n lisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not provisioned, all call requests are accepted and no calling address screening takes place.
Mib	Atmlisp
Opt. Subcomp.	COMPONENT Atmlf Vpt lisp CallingAScr Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt lisp CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp CallingAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***. If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected

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If the value is ***disabled***, no calling address screening is performed.

Mib	Atmlisp
Values	enabled disabled
Default	disabled

ATTRIBUTE Atmlf Vpt lisp CallingAScr **defaultInsertionAddress (defInsAddr)**

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	Atmlisp
Values	String (0..20, Hex)
Default	""

GROUP Atmlf Vpt lisp CallingAScr **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp CallingAScr **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpt lisp CallingAScr **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM

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address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.

Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Iisp CallingAScr **unmatchedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Iisp CallingAScr **Address (Addr)**

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.

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For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmIisp

Common Verbs: Help, List, Display, Add, DELete

COMPONENT AtmIf Vpt Iisp CalledAddressScreening (CalledAScr)

Groups: GROUP AtmIf Vpt Iisp CalledAScr Provisioned (Prov)
GROUP AtmIf Vpt Iisp CalledAScr Statistics (Stat)

Scope: Device

Description: *AtmIf/n Aini CalledAddressScreening*
AtmIf/n Uni CalledAddressScreening
AtmIf/n Iisp CalledAddressScreening
This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.

Mib: AtmIisp

Opt. Subcomp.: COMPONENT AtmIf Vpt Iisp CalledAScr Address (Addr)

Common Verbs: Help, List, Display, Add, DELete

GROUP AtmIf Vpt Iisp CalledAScr Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes for the *CalledAScr* component.

Mib: AtmIisp

ATTRIBUTE AtmIf Vpt Iisp CalledAScr adminStatus

Access: Read: All
Write: All

Description: This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***.
If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called

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address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected.
If the value is ***disabled***, no called address screening is performed.

Mib	Atmlisp
Values	enabled disabled
Default	disabled

GROUP Atmlf Vpt lisp CalledAScr **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp CalledAScr **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpt lisp CalledAScr **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpt lisp CalledAScr **unmatchedCalls**

Access	Read: All Write: Illegal

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Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt lisp CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n lisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n lisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	Atmlisp
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Vpt lisp PathTraceFilter (Ptf)

Groups	GROUP AtmIf Vpt lisp Ptf Criteria GROUP AtmIf Vpt lisp Ptf Operational (Oper) GROUP AtmIf Vpt lisp Ptf RecordControl (Record)
Scope	Device

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Description	*AtmIf/n Aini PathTraceFilter* *AtmIf/n Iisp PathTraceFilter* *AtmIf/n Uni PathTraceFilter* *AtmIf/n Pnni PathTraceFilter* *AtmIf/n Vpt/vpi Aini PathTraceFilter* *AtmIf/n Vpt/vpi Iisp PathTraceFilter* *AtmIf/n Vpt/vpi Uni PathTraceFilter* *AtmIf/n Vpt/vpi Pnni PathTraceFilter* This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced. When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop,* and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared. Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted. The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.
Mib	Atmlisp
Dyn. Subcomp.	COMPONENT AtmIf Vpt Iisp Ptf PathTraceRecord (PTRecord)
Common Verbs	Help List Display Add DELete

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VERB START **AtmIf Vpt Iisp Ptf**

Impact	Service
Description	*START AtmIf/n Aini PathTraceFilter* *START AtmIf/n Iisp PathTraceFilter* *START AtmIf/n Uni PathTraceFilter* *START AtmIf/n Pnni PathTraceFilter* *START AtmIf/n Vpt/vpi Aini PathTraceFilter* *START AtmIf/n Vpt/vpi Iisp PathTraceFilter* *START AtmIf/n Vpt/vpi Uni PathTraceFilter* *START AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command starts the path tracing based on the specified filtering criteria. When the command is issued, the *traceTimeout* timer is reset.

VERB STOP **AtmIf Vpt Iisp Ptf**

Impact	Service
Description	*STOP AtmIf/n Aini PathTraceFilter* *STOP AtmIf/n Iisp PathTraceFilter* *STOP AtmIf/n Uni PathTraceFilter* *STOP AtmIf/n Pnni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Aini PathTraceFilter* *STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter* *STOP AtmIf/n Vpt/vpi Uni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command causes the filter to stop, but keeps the trace records.

VERB CLEAR **AtmIf Vpt Iisp Ptf**

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP **AtmIf Vpt Iisp Ptf** **Criteria**

Properties	Operational

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Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	Atmlisp
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE Atmlf Vpt lisp Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	Atmlisp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Ptf callingPartyPrefix (clgPref)

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Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	Atmlisp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	Atmlisp
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE Atmlf Vpt lisp Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	Atmlisp
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE Atmlf Vpt lisp Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match

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successfully, the call is traced.

Mib	Atmlisp
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP **AtmIf Vpt lisp Ptf** **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	Atmlisp

ATTRIBUTE **AtmIf Vpt lisp Ptf** **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	Atmlisp
Values	active inactive
Default	inactive

ATTRIBUTE **AtmIf Vpt lisp Ptf** **recordCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	Atmlisp
Values	Decimal (0..200)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptf** **matchedConnections**

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Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	Atmlisp
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Ptf **elapsedTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	Atmlisp
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE Atmlf Vpt lisp Ptf **timeRemaining**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	Atmlisp
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP Atmlf Vpt lisp Ptf **RecordControl (Record)**

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp Ptf **traceTimeout**

Access	Read: All Write: All

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Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	Atmlisp
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE Atmlf Vpt lisp Ptf **maxTraceRecords (mRecords)**

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	Atmlisp
Values	Decimal (1..200)
Default	2

COMPONENT Atmlf Vpt lisp Ptf **PathTraceRecord (PTRecord)**

Groups	GROUP Atmlf Vpt lisp Ptf PTRecord Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord* *Atmlf/n lisp Ptf PTRecord* *Atmlf/n Uni Ptf PTRecord* *Atmlf/n Pnni Ptf PTRecord* *Atmlf/n Vpt/n Aini Ptf PTRecord* *Atmlf/n Vpt/n lisp Ptf PTRecord* *Atmlf/n Vpt/n Uni Ptf PTRecord* *Atmlf/n Vpt/n Pnni Ptf PTRecord* This component represents the path trace record for the last failed connection against this filter.
Mib	Atmlisp
Dyn. Subcomp.	COMPONENT Atmlf Vpt lisp Ptf PTRecord Hop
Common Verbs	Help List Display

GROUP Atmlf Vpt lisp Ptf PTRecord **Operational (Oper)**

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Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	Atmlisp

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord **status**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	Atmlisp
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord **timeStamp**

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	Atmlisp
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	Atmlisp

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Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	Atmlisp
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	Atmlisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord **diagCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	Atmlisp
Values	String (0..8, ASCII)
Default	No default

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COMPONENT AtmIf Vpt Iisp Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	GROUP AtmIf Vpt Iisp Ptf PTRecord Hop Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmIisp
Dyn. Subcomp.	COMPONENT AtmIf Vpt Iisp Ptf PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP AtmIf Vpt Iisp Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.

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Mib	Atmlisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	Atmlisp
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages.

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	The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	Atmlisp
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptf PTRecord Hop** **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	Atmlisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptf PTRecord Hop** **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	Atmlisp
Values	String (12, ASCII)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptf PTRecord Hop** **portId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptf PTRecord Hop** **portName**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	Atmlisp
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	Atmlisp
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	Atmlisp
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	Atmlisp
Values	absent present
Default	absent

ATTRIBUTE **AtmIf Vpt lisp Ptf PTRecord Hop** **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	Atmlisp
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptf PTRecord Hop** **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	Atmlisp
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptf PTRecord Hop** **blockedNodeId (bNodeId)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	Atmlisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpt Iisp Ptf PTRecord Hop** **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	Atmlisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpt Iisp Ptf PTRecord Hop** **blockedLinkPortId (bPortId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmIisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.

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Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	Atmlisp
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	Atmlisp
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt lisp Ptf PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	Atmlisp

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Values	no yes
Default	no

COMPONENT Atmlf Vpt lisp Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	GROUP Atmlf Vpt lisp Ptf PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n lisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n lisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *Atmlf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information. All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	Atmlisp
Common Verbs	Help List Display

GROUP Atmlf Vpt lisp Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.

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Mib	Atmlisp
Values	Decimal (0..11)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Ptf PTRecord Hop Vsi **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	Atmlisp
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Ptf PTRecord Hop Vsi **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	Atmlisp
Values	String (1..8, Hex)
Default	No default

COMPONENT Atmlf Vpt lisp **PathTraceTestConnection (Ptt)**

Groups	GROUP Atmlf Vpt lisp Ptt Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini PathTraceTestConnection* *Atmlf/n lisp PathTraceTestConnection* *Atmlf/n Uni PathTraceTestConnection* *Atmlf/n Pnni PathTraceTestConnection* *Atmlf/n Vpt/vpi Aini PathTraceTestConnection* *Atmlf/n Vpt/vpi lisp PathTraceTestConnection* *Atmlf/n Vpt/vpi Uni PathTraceTestConnection* *Atmlf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test

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connection responds with the trace results collected during a complete or partial trace.

Mib: AtmIisp

Common Verbs: Help, List, Display

VERB TRACE Atmlf Vpt Iisp Ptt

Impact: Passive

Description:

TRACE AtmIf/n Aini AtmPathTraceTest
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf Vpt Iisp Ptt Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *AtmPathTraceTest* component.

Mib: AtmIisp

ATTRIBUTE Atmlf Vpt Iisp Ptt traceCrankback

Access: Read: All
Write: All

Description: This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.

Mib: AtmIisp

Values: no
yes

Default: no

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ATTRIBUTE Atmlf Vpt lisp Ptt txTrafficDescType (txTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	Atmlisp
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE Atmlf Vpt lisp Ptt rxTrafficDescType (rxTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	Atmlisp
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE Atmlf Vpt lisp Ptt atmServiceCategory (service)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications. The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS. The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.
Mib	AtmIisp
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE **AtmIf Vpt Iisp Ptt** **fwdQosClass (fwdQos)**

Access	Read: All Write: All
Criticality	Component

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Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmIisp
Values	0 1 2 3 4
Default	0

ATTRIBUTE **AtmIf Vpt Iisp Ptt** **bwdQosClass (bwdQos)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

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The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmIisp

Values:
0
1
2
3
4
sameAsFwd

Default: sameAsFwd

ATTRIBUTE **AtmIf Vpt Iisp Ptt** **bearerClassBbc (bcBbc)**

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmIisp

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Values	a c x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE **Atmlf Vpt lisp Ptt** **transferCapabilityBbc (tcBbc)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. UNI 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> ***0***: NoIndication, NoIndication ***1***: NoIndication, yes ***2***: NoIndication, no ***5***: CBR, yes ***8***: VBR, NoIndication ***9***: VBR, yes ***10***: VBR, no ***NotApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data. The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing. The value ***yes*** for end-to-end timing indicates that end-to-end timing is required. The value ***no*** for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmIisp

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Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt lisp Ptt **clippingBbc (cBbc)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	Atmlisp
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt lisp Ptt **bestEffort**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to

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derivedFromServiceCategory or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	Atmlisp
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE **AtmIf Vpt lisp Ptt** **testCalledAddress**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	Atmlisp
Values	String (20, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptt** **testCalledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	Atmlisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptt** **testSpecifiedPath**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	Atmlisp
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE **AtmIf Vpt lisp Ptt** **bwdQosParameters (bqp)**

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Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE **AtmIf Vpt Iisp Ptt** **fwdQosParameters (fqp)**

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

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Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE **AtmIf Vpt Iisp Ptt** **txTrafficDescParm (txTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

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When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

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Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **AtmIf Vpt Iisp Ptt** **rxTrafficDescParm (rxTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2. When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for

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CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	Atmlisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

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COMPONENT Atmlf Vpt lisp ServiceTrace (SrvTrace)

Groups	GROUP AtmIf Vpt lisp SrvTrace Operational
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] lisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmlispTrace
Common Verbs	Help List Display Add DELete

VERB Start Atmlf Vpt lisp SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] lisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop Atmlf Vpt lisp SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] lisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP Atmlf Vpt lisp SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmlispTrace

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ATTRIBUTE AtmIf Vpt lisp SrvTrace **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmIispTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt lisp SrvTrace **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmIispTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt lisp SrvTrace **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmIispTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Vpt lisp SrvTrace **session**

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmIispTrace

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Values	The name of the component
Default	No default

COMPONENT Atmlf Vpt lisp Reroute

Groups	GROUP AtmIf Vpt lisp Reroute LocalOperational (LOper) GROUP AtmIf Vpt lisp Reroute GlobalOperational (GOper) GROUP AtmIf Vpt lisp Reroute Statistics (Stats)
Scope	Device
Description	*AtmIf/n lisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi lisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	Atmlisp
Subcomponents	COMPONENT AtmIf Vpt lisp Reroute Ov
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE Atmlf Vpt lisp Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Uni Reroute* *Optimize [-all] AtmIf/n Aini Reroute* *Optimize [-all] AtmIf/n Iisp Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Uni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Aini Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Iisp Reroute* This command triggers path optimization for the connection segments managed by the Reroute component. By default, only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection. The -all option causes all connection segments subscribed to path optimization to be considered. Using the Optimize command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP Atmlf Vpt lisp Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmIisp

ATTRIBUTE Atmlf Vpt lisp Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute localEligibleRecoveredCon (lerc)

Access	Read only

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Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **localIneligibleRecoveredCon (iirc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **localLastRrCauseCode (lrrcc)**

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	Atmlisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **localPathsOptimized (lPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt lisp Reroute **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	Atmlisp

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ATTRIBUTE Atmlf Vpt lisp Reroute **globalSubscribedConnections (gsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **globalEligibleRecoveredCon (gerc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **globalIneligibleRecoveredCon (girc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **globalLastRrCauseCode (grrcc)**

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	Atmlisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **globalPathsOptimized (gPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface.

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	Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt lisp Reroute **Statistics (Stats)**

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	Atmlisp

ATTRIBUTE Atmlf Vpt lisp Reroute **totalLocalConnectionRecoveries (tLConRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **totalLocalFailedRecoveries (lFailedRec)**

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **totalLocalPathOptimizations (tLPathOpt)**

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **totalGlobalConnectionRecoveries (tGConRec)**

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Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **totalGlobalFailedRecoveries (gFailedRec)**

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **totalGlobalPathOptimizations (tGPathOpt)**

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt lisp Reroute **totalOptimizationPasses (optPass)**

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	Atmlisp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Vpt lisp Reroute **Ov**

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Groups	GROUP AtmIf Vpt Iisp Reroute Ov Provisioned (Prov) GROUP AtmIf Vpt Iisp Reroute Ov LocalProvisioned (LProv) GROUP AtmIf Vpt Iisp Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmIisp
Common Verbs	Help List Display

GROUP AtmIf Vpt Iisp Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.

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localEbr: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmIisp

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov **numOptAttempts**

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmIisp

Values:
Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default: sameAs

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov **moduleOptimizationConnections**

Access: Read and write

Description: This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni*

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Reroute component.

One of the following values can be specified:
sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: AtmIisp

Values:
none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Atmlf Vpt Iisp Reroute Ov **switchoverMechanism**

Access: Read and write

Description: This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmIisp

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP Atmlf Vpt Iisp Reroute Ov **LocalProvisioned (LProv)**

Properties: Provisioned

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Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	AtmIisp

ATTRIBUTE Atmlf Vpt Iisp Reroute Ov **localConnectionRecoverySubscr (IConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute:*** If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values. ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.
Mib	AtmIisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Vpt Iisp Reroute Ov **localPathOptimizationSubscr (IPathOpt)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

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Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib	Atmlisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

GROUP **AtmIf Vpt Iisp Reroute Ov** **GlobalProvisioned (GProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	Atmlisp

ATTRIBUTE **AtmIf Vpt Iisp Reroute Ov** **globalConnectionRecoverySubscr (gConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

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One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib — AtmIisp

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Vpt Iisp Reroute Ov **globalPathOptimizationSubscr (gPathOpt)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.

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transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib: AtmIisp

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

COMPONENT AtmIf Vpt Pnni

Groups:
GROUP AtmIf Vpt Pnni Provisioned (Prov)
GROUP AtmIf Vpt Pnni AdminWeights
GROUP AtmIf Vpt Pnni AccountingOptions (AcctOpt)
GROUP AtmIf Vpt Pnni Operational
GROUP AtmIf Vpt Pnni VPnniProvisioned (VProv)
GROUP AtmIf Vpt Pnni Threshold
GROUP AtmIf Vpt Pnni TraceProv (Trace)

Scope: Device

Description:
AtmIf/n VirtualPathTerminator/m Pnni
This component represents a virtual ATM Private Network-Network Interface (PNNI) interface. If this component is provisioned, neither a *Uni*, an *Aini,* nor an *Iisp* component can be provisioned under the same *Vpt* component. Also, the *ARtg Pnni* component and the *ConfiguredNode* component corresponding to the participation of this node in a lowest level peer group must both exist if a *Pnni* component is to be provisioned under a *Vpt* component. If this component is deleted, then all associated *Vcc* components are deleted.

Mib: AtmPnni

Subcomponents:
COMPONENT AtmIf Vpt Pnni Signalling (Sig)
COMPONENT AtmIf Vpt Pnni RoutingControlChannel (Rcc)

Opt. Subcomp.:
COMPONENT AtmIf Vpt Pnni PathTraceFilter (Ptf)
COMPONENT AtmIf Vpt Pnni ServiceTrace (SrvTrace)

Dyn. Subcomp.:
COMPONENT AtmIf Vpt Pnni PathTraceTestConnection (Ptt)

Dyn. Subcomp.:
COMPONENT AtmIf Vpt Pnni Address (Addr)
COMPONENT AtmIf Vpt Pnni Reroute

Common Verbs:
Help
List
Display
Add
DELete

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GROUP Atmlf Vpt Pnni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni softPvpAndPvcRetryPeriod

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmPnni
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE Atmlf Vpt Pnni softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmPnni
Values	Decimal (0; 50..20000)
Units	msec
Default	0

GROUP Atmlf Vpt Pnni AdminWeights

Properties	Provisioned
Description	This group contains the provisionable administrative weights for the *Pnni* component. These weights will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion.
Mib	AtmPnni

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ATTRIBUTE Atmlf Vpt Pnni **cbrWeight (cbrWt)**

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Constant Bit Rate (CBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE Atmlf Vpt Pnni **rtVbrWeight (rtVbrWt)**

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Real-Time Variable Bit Rate (RT-VBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE Atmlf Vpt Pnni **nrtVbrWeight (nrtVbrWt)**

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Non Real-Time Variable Bit Rate (NRT-VBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE Atmlf Vpt Pnni **ubrWeight (ubrWt)**

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Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Unspecified Bit Rate (UBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

GROUP Atmlf Vpt Pnni **AccountingOptions (AcctOpt)**

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni **accountCollection (aco)**

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	AtmPnni
Set of	bill test study audit force
Default	No default

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ATTRIBUTE Atmlf Vpt Pnni accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***. If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.
Mib	AtmPnni
Values	origTerm intermediate
Default	intermediate

ATTRIBUTE Atmlf Vpt Pnni accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmPnni
Values	Decimal (0..255)
Default	0

ATTRIBUTE Atmlf Vpt Pnni serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmPnni

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Values	Decimal (0..255)
Default	0

GROUP Atmlf Vpt Pnni **Operational**

Properties	Operational
Description	This group contains the operational attributes for a *Pnni* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni **portId**

Access	Read: All Write: Illegal
Description	This attribute indicates the port id of the PNNI interface, which is the parent *AtmIf*'s instance number.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Pnni **VPnniProvisioned (VProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Pnni* component which are specific to virtual PNNI interfaces.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni **vpci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Virtual Path Connection Identifier (VPCI) to be used between this signaling entity and its peer. The VPCI of the peer virtual PNNI must have the same value for switched connections to be set up across the interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	0

GROUP Atmlf Vpt Pnni **Threshold**

Properties	Provisioned
Description	This group contains the provisionable attributes for the change threshold for the *Atmif Pnni* component.

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Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni **avcrMt**

Access	Read: All Write: All
Description	This attribute, multiplied by the Maximum Cell Rate, specifies the minimum threshold used in the algorithms that determine significant change for average cell rate parameters for this interface. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrMt*.
Mib	AtmPnni
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

ATTRIBUTE Atmlf Vpt Pnni **avcrPm**

Access	Read: All Write: All
Description	This attribute multiplied by the current Available Cell Rate (AvCr) specifies the threshold used in the algorithms that determine significant change for AvCR parameters for this interface. If the resulting threshold is lower than the AvCr, the minimum threshold (*Atmif pnni avcrMt*) is used. Increasing the value of the attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrPm*.
Mib	AtmPnni
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

GROUP Atmlf Vpt Pnni **TraceProv (Trace)**

Properties	Provisioned
Description	This group contains the provisionable trace attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni **traceDestination (tDst)**

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Access	Read: All Write: All
Description	This attribute specifies if this node is a trace destination. A PNNI interface may be a trace destination interface. By default, it's not. If an operator wants to trace only until this PNNI interface, this interface can be set to trace destination by setting this attribute.
Mib	AtmPnni
Values	no yes
Default	no

COMPONENT AtmIf Vpt Pnni Signalling (Sig)

Groups	GROUP AtmIf Vpt Pnni Sig Provisioned (Prov) GROUP AtmIf Vpt Pnni Sig OsiState (State) GROUP AtmIf Vpt Pnni Sig Operational (Oper) GROUP AtmIf Vpt Pnni Sig Statistics (Stats)
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmPnni
Opt. Subcomp.	COMPONENT AtmIf Vpt Pnni Sig VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP AtmIf Vpt Pnni Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Sig vci

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	5

ATTRIBUTE Atmlf Vpt Pnni Sig **addressConversion**

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmPnni
Values	none nativeE164 nsap
Default	none

ATTRIBUTE Atmlf Vpt Pnni Sig **operatingMode**

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmPnni
Values	normal provisionedOnly
Default	normal

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GROUP Atmlf Vpt Pnni Sig **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Sig **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmPnni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Atmlf Vpt Pnni Sig **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	AtmPnni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Atmlf Vpt Pnni Sig **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmPnni
Values	idle active (activ) busy
Default	idle

GROUP Atmlf Vpt Pnni Sig **Operational (Oper)**

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Sig **lastTxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Sig **lastTxDiagCode**

Access	Read: All Write: Illegal

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Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmPnni
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig **lastRxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig **lastRxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmPnni
Values	Hex (H.0..H.ff)
Default	No default

GROUP AtmIf Vpt Pnni Sig **Statistics (Stats)**

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Sig **peakConnections**

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Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Sig **successfulConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Sig **failedConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Sig **txPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Sig **rxPdus**

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Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Vpt Pnni Sig** **currentPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Vpt Pnni Sig** **peakPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Vpt Pnni Sig** **successfulPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Vpt Pnni Sig** **failedPmpConnections**

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Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **Atmlf Vpt Pnni Sig** **currentConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to-point connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT **Atmlf Vpt Pnni Sig** **VirtualChannelDescriptor (Vcd)**

Groups	GROUP Atmlf Vpt Pnni Sig Vcd Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmPnni
Common Verbs	Help List Display Add DELete

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GROUP Atmlf Vpt Pnni Sig Vcd **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Sig Vcd **trafficDescType (tdt)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmPnni
Values	3 6 7 8
Default	6
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Pnni Sig Vcd **atmServiceCategory (service)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may

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support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmPnni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Vpt Pnni Sig Vcd** **weight**

Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell

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opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT.

When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

Mib	AtmPnni
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Pnni Sig Vcd** **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmPnni
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

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ATTRIBUTE Atmlf Vpt Pnni Sig Vcd **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components. When ***disabled*** is selected, traffic shaping for this connection is disabled.
Mib	AtmPnni
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Pnni Sig Vcd **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*. When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni
Values	common sameAsCa

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Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Pnni Sig Vcd **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Pnni Sig Vcd **trafficDescParm (tdp)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5

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overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)

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Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

COMPONENT Atmlf Vpt Pnni RoutingControlChannel (Rcc)

Groups	GROUP AtmIf Vpt Pnni Rcc Provisioned (Prov) GROUP AtmIf Vpt Pnni Rcc HelloParms (HlParms) GROUP AtmIf Vpt Pnni Rcc OsiState (State) GROUP AtmIf Vpt Pnni Rcc Operational (Oper) GROUP AtmIf Vpt Pnni Rcc Statistics (Stats)
Scope	Device
Description	*AtmIf/n Pnni RoutingControlChannel* *AtmIf/n Vpt/m Pnni RoutingControlChannel* This component represents the Routing Control Channel (RCC) associated with a PNNI interface. The RCC is used to exchange routing information between nodes in a peer group.
Mib	AtmPnni
Opt. Subcomp.	COMPONENT AtmIf Vpt Pnni Rcc VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP Atmlf Vpt Pnni Rcc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the generic provisionable attributes of an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Rcc vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the VCI for the Routing Control Channel (RCC). The value should not be changed from the default of 18 unless absolutely necessary. If a different VCI is specified, ensure that the RCC at the far end is provisioned to use the same VCI, otherwise the RCC will not come up.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	18

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ATTRIBUTE Atmlf Vpt Pnni Rcc **aggregationToken**

Access	Read: All Write: All
Description	This attribute specifies the aggregation token for this interface at the local end of the link. The aggregation tokens at both ends are use to form the *derivedAggregationToken* for the link. The aggregation token controls how links are aggregated together. Except for the lowest level nodes, links between two logical nodes are aggregated together if they have the same aggregation token. Link aggregation is not done at the lowest level node, except in the degenerate node situation, where the lowest level node is a neighbor to an LGN. The value is ignored for links having a type value of ***unknown*** or ***lowestLevelHorizLink***.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	0

GROUP Atmlf Vpt Pnni Rcc **HelloParms (HlParms)**

Properties	Provisioned
Description	This group contains the provisionable Hello protocol parameters for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Rcc **helloHoldDown (hhd)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the rate at which this node sends out Hello packets. It specifies the default minimum length of time between successive Hellos used by routing control channels on this node. A provisioning check is made to ensure that this value cannot be greater than *helloInterval*. A value of 0 specifies that the value provisioned for the *helloHoldDown* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni
Values	Decimal (0.0..65535.0)
Units	seconds
Default	0.0

ATTRIBUTE Atmlf Vpt Pnni Rcc **helloInterval (hli)**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the default duration of the Hello Timer for routing control channels on this node. Every *helloInterval* seconds, this node sends out a Hello packet to the neighbor node, subject to the *helloHoldDown* timer having expired at least once since the last Hello packet was sent. A provisioning check is made to ensure that this value cannot be less than *helloHoldDown*. A value of 0 specifies that the value provisioned for the *helloInterval* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni
Values	Decimal (0..65535)
Units	seconds
Default	0

ATTRIBUTE Atmlf Vpt Pnni Rcc **helloInactivityFactor (hif)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the number of Hello intervals allowed to pass without receiving a Hello from a neighbor, before an attempt is made to stage the RCC to that neighbor. The hello inactivity timer is enabled when the *helloState* is one of ***oneWayInside***, ***twoWayInside***, ***oneWayOutside***, ***twoWayOutside*** or ***commonOutside***. A value of 0 specifies that the value provisioned for the *helloInactivityFactor* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	0

GROUP Atmlf Vpt Pnni Rcc **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Rcc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmPnni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Atmlf Vpt Pnni Rcc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmPnni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Atmlf Vpt Pnni Rcc usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmPnni
Values	idle active (activ) busy
Default	idle

GROUP Atmlf Vpt Pnni Rcc Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Rcc type

Access	Read: All Write: Illegal
Description	This attribute indicates the role of this link in the PNNI hierarchy. The following values are possible: ***unknown***: the Hello protocol has not yet determined the role of the link. ***lowestLevelHorizLink***: the link is a horizontal link between two lowest level nodes. ***lowestLevelOutsideLink***: the link is an outside link between two border nodes. ***horizontalLinkToLgn***: the link is a horizontal link to a Logical Group Node (LGN). ***uplink***: the link is a uplink to a higher level LGN.
Mib	AtmPnni
Values	unknown lowestLevelHorizLink lowestLevelOutsideLink horizontalLinkToLGN uplink

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Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc **negotiatedVersion**

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI version negotiated with the neighbor node.
Mib	AtmPnni
Values	unsupported version1point0
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc **helloState**

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the Hello protocol exchange over this link. The following are the possible values for this attribute: ***down***: the link is down. No PNNI routing packets are sent or received over such a link. This is the initial state of the Hello Finite State Machine, and can also be reached when lower-level protocols have indicated that the link is not usable. ***attempt***: no Hello packets or Hello packets, with mismatched information, have been received recently from the neighbor. Attempts are made to contact the neighbor node by sending out Hello packets every *helloInterval* seconds. ***oneWayInside***: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of the same peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero. A Hello packet is sent to the neighbor and the Hello timer is restarted. ***twoWayInsid***e: Bidirectional communication over this link between this node and the neighbor node has been achieved. ***oneWayOutside***: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of a different peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero. ***twoWayOutside***: Hello packets have recently been received from the neighbor indicating that the neighbor node belongs to a different peer group. The correct remote node ID and remote port ID fields were included in the Hello packet, but the nodal hierarchy list did not include any common peer group. This state can also be reached if a hierarchy

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mismatch occurs while in the ***commonOutside*** state.

commonOutside: A common level of the routing hierarchy has been found, in addition to achieving full bidirectional communication between the two nodes.

Mib	AtmPnni
Values	notApplicable down attempt oneWayInside twoWayInside oneWayOutside twoWayOutside commonOutside
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc **remoteNodeId**

Access	Read: All Write: Illegal
Description	This attribute indicates the node id at the far end of the link.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc **remotePortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the Port ID of the neighboring node, which is an unsigned integer of 32 bits. When the remote end of a PNNI physical link is terminated by a Nortel Networks Multiservice Switch, the first 16 bits of the hex encoded format represent the *Atmlf* instance of the PNNI link of the remote node, the next 12 bits correspond to the VPI of the PNNI link and the last 4 bits are unspecified (that is, it provide no value for physical interpretation).
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc **derivedAggregationToken**

Access	Read: All Write: Illegal

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Description	This attribute indicates the derived aggregation token value used on this link. The algorithm for computing the value of the derived aggregation token is: 1. If neighbors exchange identical values of the configured aggregation token, that value is the derived aggregation token value. 2. If the configured aggregation token value of one neighbor is zero (default), and that of the other neighbor is non-zero, the non-zero value is the derived aggregation token value. 3. If the configured aggregation token values of the neighbors are different and both non-zero, the derived aggregation token value is zero. The attribute is not displayed for links having a type value of ***unknown*** or ***lowestLevelHorizLink***.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc **remoteNodeName**

Access	Read: All Write: Illegal
Description	This attribute indicates the node name and the hierarchy level for the node at the far end of the link. A typical value for this attribute has the following form: ***OBELIX@96***. Here, ***OBELIX*** is the node name and ***96*** is the hierarchy level for the up node. The ***@*** symbol is used to separate the node name from the hierarchy level in the display. The value of this attribute is an empty string if the far end is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (1..16, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc **remoteInterfaceName**

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name of the node at the far end of the link. When the far end of the link is a Nortel Networks Multiservice Switch, this attribute's value can take one of the following forms: (a) ***Atmlf/<1-4095>*** - If the far end is an ATM interface. (b) ***Atmlf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link.

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	The value of this attribute is an empty string if the far end is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (0..19, ASCII)
Default	No default

GROUP Atmlf Vpt Pnni Rcc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Rcc helloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Hello packets received across this RCC, including bad and mismatched Hello packets. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc helloPacketsTx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Hello packets transmitted across this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc mismatchedHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of mismatched Hello packets received over this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Atmlf Vpt Pnni Rcc badHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bad Hello packets received over this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Vpt Pnni Rcc VirtualChannelDescriptor (Vcd)

Groups	GROUP Atmlf Vpt Pnni Rcc Vcd Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmPnni
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Pnni Rcc Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Rcc Vcd trafficDescType (tdt)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmPnni
Values	3 6 7 8
Default	6
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Pnni Rcc Vcd** **atmServiceCategory (service)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of

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connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmPnni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Vpt Pnni Rcc Vcd** **weight**

Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

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Mib	AtmPnni
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Pnni Rcc Vcd **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmPnni
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Pnni Rcc Vcd **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based

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on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib: AtmPnni

Values: disabled
sameAsCa

Default: disabled

Flags: HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Pnni Rcc Vcd **unshapedTransmitQueueing (unshap)**

Access: Read and write

Criticality: Component

Description: This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute.

When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*.

When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmPnni

Values: common
sameAsCa

Default: sameAsCa

Flags: HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Pnni Rcc Vcd **usageParameterControl (upc)**

Access: Read and write

Criticality: Component

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Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Vpt Pnni Rcc Vcd** **trafficDescParm (tdp)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any

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value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

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COMPONENT Atmlf Vpt Pnni Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate registered default]
Groups	GROUP Atmlf Vpt Pnni Addr Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Address/address,type* *Atmlf/n Iisp Address/address,type* *Atmlf/n Uni Address/address,type* *Atmlf/n Pnni Address/address,type* *Atmlf/n Vpt/m Aini Address/address,type* *Atmlf/n Vpt/m Iisp Address/address,type* *Atmlf/n Vpt/m Uni Address/address,type* *Atmlf/n Vpt/m Pnni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard ('?'), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address. The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of type ***default***. The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm. The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed. If this node participates in a PNNI hierarchy, then a *PnniInfo*

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subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib: AtmPnni

Opt. Subcomp.: COMPONENT AtmIf Vpt Pnni Addr TerminateSPvpAndSPvc (TermSP)
COMPONENT AtmIf Vpt Pnni Addr PnniInfo

Common Verbs: Help, List, Display, Add, DELete

GROUP AtmIf Vpt Pnni Addr Operational (Oper)

Properties: Operational

Description: This attribute group contains the operational attributes for the *Address* component.

Mib: AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Addr scope

Access: Read: All
Write: Illegal

Description: This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.

Mib: AtmPnni

Values: Signed (-1..104)

Default: No default

ATTRIBUTE AtmIf Vpt Pnni Addr reachability (reach)

Access: Read: All
Write: Illegal

Description: This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib: AtmPnni

Values: internal
exterior

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Default — No default

COMPONENT Atmlf Vpt Pnni Addr TerminateSPvpAndSPvc (TermSP)

Scope — Device

Description — *AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc*
AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc

The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib — AtmPnni

Common Verbs — Help
List
Display
Add
DELete

COMPONENT Atmlf Vpt Pnni Addr PnniInfo

Groups — GROUP AtmIf Vpt Pnni Addr PnniInfo Provisioned (Prov)

Scope — Device

Description — *AtmIf/n Aini Addr/address,type PnniInfo*
AtmIf/n Iisp Addr/address,type PnniInfo
AtmIf/n Uni Addr/address,type PnniInfo
AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM

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address related to PNNI. This component appears only under provisioned *Address* components.

Mib AtmPnni

Common Verbs
Help
List
Display
Add
DELete

GROUP Atmlf Vpt Pnni Addr PnniInfo **Provisioned (Prov)**

Properties Provisioned

Description This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.

Mib AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Addr PnniInfo **scope**

Access Read: All
Write: All

Criticality Component

Description This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.

Mib AtmPnni

Values Signed (-1..104)

Default -1

ATTRIBUTE Atmlf Vpt Pnni Addr PnniInfo **reachability (reach)**

Access Read: All
Write: All

Criticality Component

Description This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib AtmPnni

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Values	internal exterior
Default	internal

COMPONENT Atmlf Vpt Pnni PathTraceFilter (Ptf)

Groups	GROUP AtmIf Vpt Pnni Ptf Criteria GROUP AtmIf Vpt Pnni Ptf Operational (Oper) GROUP AtmIf Vpt Pnni Ptf RecordControl (Record)
Scope	Device
Description	*AtmIf/n Aini PathTraceFilter* *AtmIf/n Iisp PathTraceFilter* *AtmIf/n Uni PathTraceFilter* *AtmIf/n Pnni PathTraceFilter* *AtmIf/n Vpt/vpi Aini PathTraceFilter* *AtmIf/n Vpt/vpi Iisp PathTraceFilter* *AtmIf/n Vpt/vpi Uni PathTraceFilter* *AtmIf/n Vpt/vpi Pnni PathTraceFilter* This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced. When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop,* and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared. Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted. The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.
Mib	AtmPnni
Dyn. Subcomp.	COMPONENT AtmIf Vpt Pnni Ptf PathTraceRecord (PTRecord)
Common Verbs	Help List Display Add DELete

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VERB START **AtmIf Vpt Pnni Ptf**

Impact Service

Description *START AtmIf/n Aini PathTraceFilter*
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP **AtmIf Vpt Pnni Ptf**

Impact Service

Description *STOP AtmIf/n Aini PathTraceFilter*
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

VERB CLEAR **AtmIf Vpt Pnni Ptf**

Impact Service

Description *CLEAR AtmIf/n Aini PathTraceFilter*
CLEAR AtmIf/n Iisp PathTraceFilter
CLEAR AtmIf/n Uni PathTraceFilter
CLEAR AtmIf/n Pnni PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP **AtmIf Vpt Pnni Ptf** **Criteria**

Properties Operational

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Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmPnni
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE Atmlf Vpt Pnni Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmPnni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf callingPartyPrefix (clgPref)

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Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmPnni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE Atmlf Vpt Pnni Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE Atmlf Vpt Pnni Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match

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successfully, the call is traced.

Mib	AtmPnni
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP **Atmlf Vpt Pnni Ptf** **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE **Atmlf Vpt Pnni Ptf** **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmPnni
Values	active inactive
Default	inactive

ATTRIBUTE **Atmlf Vpt Pnni Ptf** **recordCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	AtmPnni
Values	Decimal (0..200)
Default	No default

ATTRIBUTE **Atmlf Vpt Pnni Ptf** **matchedConnections**

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Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmPnni
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf **elapsedTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmPnni
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf **timeRemaining**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmPnni
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP Atmlf Vpt Pnni Ptf **RecordControl (Record)**

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Ptf **traceTimeout**

Access	Read: All Write: All

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Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmPnni
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE Atmlf Vpt Pnni Ptf **maxTraceRecords (mRecords)**

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmPnni
Values	Decimal (1..200)
Default	2

COMPONENT Atmlf Vpt Pnni Ptf **PathTraceRecord (PTRecord)**

Groups	GROUP AtmIf Vpt Pnni Ptf PTRecord Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord* This component represents the path trace record for the last failed connection against this filter.
Mib	AtmPnni
Dyn. Subcomp.	COMPONENT AtmIf Vpt Pnni Ptf PTRecord Hop
Common Verbs	Help List Display

GROUP Atmlf Vpt Pnni Ptf PTRecord **Operational (Oper)**

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Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord **status**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmPnni
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord **timeStamp**

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmPnni
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmPnni

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Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmPnni
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord **diagCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmPnni
Values	String (0..8, ASCII)
Default	No default

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COMPONENT AtmIf Vpt Pnni Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	GROUP AtmIf Vpt Pnni Ptf PTRecord Hop Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmPnni
Dyn. Subcomp.	COMPONENT AtmIf Vpt Pnni Ptf PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP AtmIf Vpt Pnni Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.

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Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmPnni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages.

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The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.

Mib	AtmPnni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE **AtmIf Vpt Pnni Ptf PTRecord Hop** **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpt Pnni Ptf PTRecord Hop** **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	String (12, ASCII)
Default	No default

ATTRIBUTE **AtmIf Vpt Pnni Ptf PTRecord Hop** **portId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Vpt Pnni Ptf PTRecord Hop** **portName**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	String (55, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmPnni
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmPnni
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **blockedNodeId (bNodeId)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **blockedLinkPortId (bPortId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **blockedLinkSucceedingNodeId (sNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **dstVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.

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Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmPnni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmPnni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni

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Values	no yes
Default	no

COMPONENT Atmlf Vpt Pnni Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	GROUP AtmIf Vpt Pnni Ptf PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information. All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmPnni
Common Verbs	Help List Display

GROUP Atmlf Vpt Pnni Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.

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Mib	AtmPnni
Values	Decimal (0..11)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop Vsi **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptf PTRecord Hop Vsi **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmPnni
Values	String (1..8, Hex)
Default	No default

COMPONENT Atmlf Vpt Pnni **PathTraceTestConnection (Ptt)**

Groups	GROUP Atmlf Vpt Pnni Ptt Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini PathTraceTestConnection* *Atmlf/n Iisp PathTraceTestConnection* *Atmlf/n Uni PathTraceTestConnection* *Atmlf/n Pnni PathTraceTestConnection* *Atmlf/n Vpt/vpi Aini PathTraceTestConnection* *Atmlf/n Vpt/vpi Iisp PathTraceTestConnection* *Atmlf/n Vpt/vpi Uni PathTraceTestConnection* *Atmlf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test

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connection responds with the trace results collected during a complete or partial trace.

Mib AtmPnni

Common Verbs
Help
List
Display

VERB TRACE Atmlf Vpt Pnni Ptt

Impact Passive

Description

TRACE AtmIf/n Aini AtmPathTraceTest
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf Vpt Pnni Ptt Operational (Oper)

Properties Operational

Description This group contains the operational attributes for the *AtmPathTraceTest* component.

Mib AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Ptt traceCrankback

Access
Read: All
Write: All

Description This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.

Mib AtmPnni

Values
no
yes

Default no

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ATTRIBUTE Atmlf Vpt Pnni Ptt txTrafficDescType (txTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmPnni
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE Atmlf Vpt Pnni Ptt rxTrafficDescType (rxTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	AtmPnni
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE Atmlf Vpt Pnni Ptt atmServiceCategory (service)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications. The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS. The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.
Mib	AtmPnni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE **Atmlf Vpt Pnni Ptt** **fwdQosClass (fwdQos)**

Access	Read: All Write: All
Criticality	Component

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Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmPnni
Values	0 1 2 3 4
Default	0

ATTRIBUTE **Atmlf Vpt Pnni Ptt** **bwdQosClass (bwdQos)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

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The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib AtmPnni

Values
0
1
2
3
4
sameAsFwd

Default sameAsFwd

ATTRIBUTE Atmlf Vpt Pnni Ptt **bearerClassBbc (bcBbc)**

Access
Read: All
Write: All

Criticality Component

Description

This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib AtmPnni

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Values	a c x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Pnni Ptt **transferCapabilityBbc (tcBbc)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. UNI 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> ***0***: NoIndication, NoIndication ***1***: NoIndication, yes ***2***: NoIndication, no ***5***: CBR, yes ***8***: VBR, NoIndication ***9***: VBR, yes ***10***: VBR, no ***NotApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data. The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing. The value ***yes*** for end-to-end timing indicates that end-to-end timing is required. The value ***no*** for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmPnni

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Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Pnni Ptt **clippingBbc (cBbc)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmPnni
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Pnni Ptt **bestEffort**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to

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derivedFromServiceCategory or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmPnni
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Pnni Ptt **testCalledAddress**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmPnni
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptt **testCalledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptt **testSpecifiedPath**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmPnni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Ptt **bwdQosParameters (bqp)**

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Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE **Atmlf Vpt Pnni Ptt** **fwdQosParameters (fqp)**

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

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Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE **Atmlf Vpt Pnni Ptt txTrafficDescParm (txTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

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When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

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Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **Atmlf Vpt Pnni Ptt** **rxTrafficDescParm (rxTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2. When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for

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CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

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COMPONENT Atmlf Vpt Pnni ServiceTrace (SrvTrace)

Groups	GROUP AtmIf Vpt Pnni SrvTrace Operational
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a "Receiver Not Supported" message.
Mib	AtmPnniTrace
Common Verbs	Help List Display Add DELete

VERB Start Atmlf Vpt Pnni SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop Atmlf Vpt Pnni SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP Atmlf Vpt Pnni SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmPnniTrace

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ATTRIBUTE Atmlf Vpt Pnni SrvTrace **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmPnniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni SrvTrace **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmPnniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE Atmlf Vpt Pnni SrvTrace **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmPnniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE Atmlf Vpt Pnni SrvTrace **session**

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmPnniTrace

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Values	The name of the component
Default	No default

COMPONENT Atmlf Vpt Pnni Reroute

Groups	GROUP AtmIf Vpt Pnni Reroute DomainOperational (DOper) GROUP AtmIf Vpt Pnni Reroute LocalOperational (LOper) GROUP AtmIf Vpt Pnni Reroute GlobalOperational (GOper) GROUP AtmIf Vpt Pnni Reroute Statistics (Stats)
Scope	Device
Description	*AtmIf/n Pnni Reroute* *AtmIf/n Vpt/vpi Pnni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmPnni
Subcomponents	COMPONENT AtmIf Vpt Pnni Reroute Ov
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE **AtmIf Vpt Pnni Reroute**

Impact	Service
Description	*Optimize [-all] AtmIf/n Pnni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Pnni Reroute* This command triggers path optimization for the connection segments managed by the *Reroute* component. By default, only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection. The *-all* option causes all connection segments subscribed to path optimization to be considered. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP **AtmIf Vpt Pnni Reroute** **DomainOperational (DOper)**

Properties	Operational
Description	This group contains the operational attributes specific to rerouting activities on a PNNI interface.
Mib	AtmPnni

ATTRIBUTE **AtmIf Vpt Pnni Reroute** **localDomainLink (domain)**

Access	Read only
Description	This attribute indicates the local PNNI domain link type. One of the following values is indicated: ***intraDomainLink***: The PNNI interface is not a local domain edge node. ***interDomainLink***: The PNNI interface acts as a local domain edge node.
Mib	AtmPnni
Values	intraDomainLink interDomainLink
Default	No default

GROUP **AtmIf Vpt Pnni Reroute** **LocalOperational (LOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.

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Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Reroute **localSubscribedConnections (lsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **localEligibleRecoveredCon (lerc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **localIneligibleRecoveredCon (lirc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **localLastRrCauseCode (lrrcc)**

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **localPathsOptimized (lPathsOpt)**

Access	Read only

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Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Pnni Reroute **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Reroute **globalSubscribedConnections (gsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **globalEligibleRecoveredCon (gerc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **globalIneligibleRecoveredCon (girc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Atmlf Vpt Pnni Reroute **globalLastRrCauseCode (grrcc)**

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **globalPathsOptimized (gPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Pnni Reroute **Statistics (Stats)**

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Reroute **totalLocalConnectionRecoveries (tLConRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **totalLocalFailedRecoveries (lFailedRec)**

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **totalLocalPathOptimizations (tLPathOpt)**

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **totalGlobalConnectionRecoveries (tGConRec)**

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **totalGlobalFailedRecoveries (gFailedRec)**

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **totalGlobalPathOptimizations (tGPathOpt)**

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Atmlf Vpt Pnni Reroute **totalOptimizationPasses (optPass)**

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Vpt Pnni Reroute **Ov**

Groups	GROUP Atmlf Vpt Pnni Reroute Ov DomainProvisioned (DProv) GROUP Atmlf Vpt Pnni Reroute Ov Provisioned (Prov) GROUP Atmlf Vpt Pnni Reroute Ov LocalProvisioned (LProv) GROUP Atmlf Vpt Pnni Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*Atmlf/n Pnni Reroute Ov* *Atmlf/n Vpt/vpi Pnni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmPnni
Common Verbs	Help List Display

GROUP Atmlf Vpt Pnni Reroute Ov **DomainProvisioned (DProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes specific to rerouting on a PNNI interface.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Reroute Ov **localDomainLink (domain)**

Access	Read and write
Description	This attribute specifies the method used to identify the type of local domain link. One of the following values can be specified: ***sameAsARtgPnniReroute***: The type of the local domain link is determined by the exchange of the *ARtg Pnni Reroute localDomain* value with the PNNI neighbor.

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intraDomainLink: The result of the exchange of the *localDomain* is ignored. The local domain link type is set to intra-domain link.
interDomainLink: The result of the exchange of the *localDomain* is ignored. The local domain link type is set to inter-domain link.

Mib — AtmPnni

Values — sameAsARtgPnniReroute (sameAs)
intraDomainLink (intra)
interDomainLink (inter)

Default — sameAsARtgPnniReroute

GROUP Atmlf Vpt Pnni Reroute Ov **Provisioned (Prov)**

Properties — Provisioned

Description — This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.

Mib — AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Reroute Ov **protocol**

Access — Read and write

Description — This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning.

One of the following values can be specified:
sameAsARtgPnniReroute: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
localEbr: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib — AtmPnni

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Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE Atmlf Vpt Pnni Reroute Ov **numOptAttempts**

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.
Mib	AtmPnni
Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE Atmlf Vpt Pnni Reroute Ov **moduleOptimizationConnections**

Access	Read and write
Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified: ***sameAsARtgPnniReroute***: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute. ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments that are using a path with a greater optimization metric than the best known value are considered for

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path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

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Values
none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default — sameAsARtgPnniReroute

ATTRIBUTE Atmlf Vpt Pnni Reroute Ov **switchoverMechanism**

Access — Read and write

Description — This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum "Domain based Rerouting" specification is used for switchover. This value ensures interoperability with other vendors' equipment running ATM Forum "Domain based Rerouting".
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

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Values
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default — sameAsARtgPnniReroute

GROUP Atmlf Vpt Pnni Reroute Ov **LocalProvisioned (LProv)**

Properties — Provisioned

Description — This group contains the provisionable attributes for EBR and local rerouting protocols.

Mib — AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Reroute Ov **localConnectionRecoverySubscr (lConRec)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols.

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This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

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Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE **Atmlf Vpt Pnni Reroute Ov** **localPathOptimizationSubscr (lPathOpt)**

Access: Read and write

Description

This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.

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svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib	AtmPnni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

GROUP **Atmlf Vpt Pnni Reroute Ov** **GlobalProvisioned (GProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	AtmPnni

ATTRIBUTE **Atmlf Vpt Pnni Reroute Ov** **globalConnectionRecoverySubscr (gConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute***: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values. ***svcSvp***: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery. ***sourceSpvcSpvp***: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

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transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib — AtmPnni

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Vpt Pnni Reroute Ov **globalPathOptimizationSubscr (gPathOpt)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

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Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

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Default	(sameAsARtgPnniReroute)

COMPONENT Atmlf Vpt UserNetworkInterface (Uni)

Groups	GROUP AtmIf Vpt Uni Provisioned (Prov) GROUP AtmIf Vpt Uni AccountingOptions (AcctOpt) GROUP AtmIf Vpt Uni VUniProvisioned (VProv)
Scope	Device
Description	*AtmIf/n VirtualPathTerminator/m Uni* This component represents a virtual ATM UNI interface. If this component is provisioned, neither an *Iisp*, an *Aini*, nor a *Pnni* component can be provisioned under the same *Vpt* component. If this component is deleted, then all associated *Vcc* components are deleted.
Mib	AtmUni
Subcomponents	COMPONENT AtmIf Vpt Uni Signalling (Sig)
Opt. Subcomp.	COMPONENT AtmIf Vpt Uni CallingAddressScreening (CallingAScr) COMPONENT AtmIf Vpt Uni CalledAddressScreening (CalledAScr) COMPONENT AtmIf Vpt Uni PathTraceFilter (Ptf) COMPONENT AtmIf Vpt Uni ServiceTrace (SrvTrace) COMPONENT AtmIf Vpt Uni Reroute
Dyn. Subcomp.	COMPONENT AtmIf Vpt Uni PathTraceTestConnection (Ptt)
Dyn. Subcomp.	COMPONENT AtmIf Vpt Uni Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Uni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Uni* component.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni version

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies which specification the UNI complies with. The options are ATM FORUM 3.0, ATM FORUM 3.1 or ATM FORUM 4.0. If this attribute is changed then all switched *Vcc* components in this interface are cleared due to the fact that the two versions are incompatible.

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Mib	AtmUni
Values	atmForum30 atmForum31 atmForum40
Default	atmForum40

ATTRIBUTE Atmlf Vpt Uni side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmUni
Values	network user
Default	network

ATTRIBUTE Atmlf Vpt Uni softPvpAndPvcRetryPeriod

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmUni
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE Atmlf Vpt Uni softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmUni
Values	Decimal (0; 50..20000)

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Units	msec
Default	0

ATTRIBUTE Atmlf Vpt Uni **loopPrevention**

Access	Read: All Write: Configuration
Description	This attribute specifies whether loop prevention is in effect on this interface. When the value is ***enabled***, incoming calls on this interface cannot be routed back out the same interface. When the value is ***disabled***, routing of incoming calls back out the same interface is permitted. The recommended value is ***enabled***. The value ***disabled*** should only be used if routing of incoming calls back out over this interface is actually required. As an example, the value ***disabled*** might be needed if the interface is connected to an end-user multiplexing device which has no routing capability. Note that setting the value to ***enabled*** prevents only routing loops which involve two network nodes.
Mib	AtmUni
Values	disabled enabled
Default	enabled

ATTRIBUTE Atmlf Vpt Uni **interfaceType**

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the *Type* of the interface, ***private*** or ***public***.
Mib	AtmUni
Values	public private
Default	private

GROUP Atmlf Vpt Uni **AccountingOptions (AcctOpt)**

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni **accountCollection (aco)**

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Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit*** or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	AtmUni
Set of	bill test study audit force
Default	No default

ATTRIBUTE **Atmlf Vpt Uni** **accountConnectionType (act)**

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***. If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.
Mib	AtmUni
Values	origTerm intermediate
Default	origTerm

ATTRIBUTE **Atmlf Vpt Uni** **accountClass (acl)**

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Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmUni
Values	Decimal (0..255)
Default	0

ATTRIBUTE Atmlf Vpt Uni **serviceExchange (sre)**

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmUni
Values	Decimal (0..255)
Default	0

GROUP Atmlf Vpt Uni **VUniProvisioned (VProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Uni* component which are specific to virtual UNI interfaces.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni **vpci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Virtual Path Connection Identifier (VPCI) to be used between this signaling entity and its peer. The VPCI of the peer virtual UNI must have the same value for switched connections to be set up across the interface.
Mib	AtmUni
Values	Decimal (0..255)

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Default	0

COMPONENT Atmlf Vpt Uni Signalling (Sig)

Groups	GROUP Atmlf Vpt Uni Sig Provisioned (Prov) GROUP Atmlf Vpt Uni Sig OsiState (State) GROUP Atmlf Vpt Uni Sig Operational (Oper) GROUP Atmlf Vpt Uni Sig Statistics (Stats)
Scope	Device
Description	*Atmlf/n Aini Signalling* *Atmlf/n Iisp Signalling* *Atmlf/n Uni Signalling* *Atmlf/n Pnni Signalling* *Atmlf/n Vpt/m Aini Signalling* *Atmlf/n Vpt/m Iisp Signalling* *Atmlf/n Vpt/m Uni Signalling* *Atmlf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmUni
Opt. Subcomp.	COMPONENT Atmlf Vpt Uni Sig VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP Atmlf Vpt Uni Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmUni
Values	Decimal (0..65535)
Default	5

ATTRIBUTE Atmlf Vpt Uni Sig addressConversion

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Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmUni
Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Vpt Uni Sig **operatingMode**

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmUni
Values	normal provisionedOnly
Default	normal

GROUP AtmIf Vpt Uni Sig **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Sig **adminState (osiAdmin)**

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE **Atmlf Vpt Uni Sig** **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmUni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE **Atmlf Vpt Uni Sig** **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	AtmUni
Values	idle active (activ) busy
Default	idle

GROUP Atmlf Vpt Uni Sig **Operational (Oper)**

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Sig **lastTxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **lastTxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmUni
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **lastRxCauseCode**

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Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **lastRxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmUni
Values	Hex (H.0..H.ff)
Default	No default

GROUP Atmlf Vpt Uni Sig **Statistics (Stats)**

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Sig **peakConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **successfulConnections**

Access	Read: All Write: Illegal

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Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **failedConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **txPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **rxPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **currentPmpConnections**

Access	Read: All Write: Illegal

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Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **peakPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **successfulPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **failedPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Sig **currentConnections**

Access	Read: All Write: Illegal

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Description	This attribute indicates the total number of currently active point-to-point connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Vpt Uni Sig **VirtualChannelDescriptor (Vcd)**

Groups	GROUP AtmIf Vpt Uni Sig Vcd Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmUni
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Uni Sig Vcd **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Sig Vcd **trafficDescType (tdt)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the

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ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib	AtmUni
Values	3 6 7 8
Default	6
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Uni Sig Vcd** **atmServiceCategory (service)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are

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made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib — AtmUni

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)

Default — rtVariableBitRate

Flags — HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Uni Sig Vcd **weight**

Access — Read and write

Criticality — Component

Description

This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These
attributes can be found under the atmif/n ca <atmServiceCategory>/ m.

This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs.

When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***.

When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT.

When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

Mib — AtmUni

Values
Decimal (1..4095)
sameAsCa
upToQueueLimit

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Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Uni Sig Vcd **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmUni
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Uni Sig Vcd **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

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When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib	AtmUni
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Uni Sig Vcd** **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*. When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmUni
Values	common sameAsCa
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Uni Sig Vcd** **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has

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UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component.

When ***disabled*** is selected, UPC for this connection is disabled.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmUni

Values: disabled
sameAsCa

Default: disabled

Flags: HCA_SUPPORT

ATTRIBUTE **AtmIf Vpt Uni Sig Vcd trafficDescParm (tdp)**

Access: Read: All
Write: All

Criticality: Component

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP

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equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

COMPONENT Atmlf Vpt Uni Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate registered default]
Groups	GROUP Atmlf Vpt Uni Addr Operational (Oper)
Scope	Device

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Description	*AtmIf/n Uni Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wild-card ('?'), and a type. The type identifies whether the Address component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address. The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses. Virtual interfaces do not have addresses of type ***default***. The wild-card is only valid for provisioned addresses. If the address is a single wild-card, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wild-card static address, then the choice is made using a round robin algorithm. The round robin algorithm first tries the primary routes. If none of the primary routes succeed, then the alternate routes are tried. Note that the ***UniInfo*** and ***PnniInfo*** sub-components are mutually exclusive. Only one of these may be added under the ***AtmIf Uni Addr*** component.
Mib	AtmUni
Opt. Subcomp.	COMPONENT AtmIf Vpt Uni Addr TerminateSPvpAndSPvc (TermSP) COMPONENT AtmIf Vpt Uni Addr PnniInfo COMPONENT AtmIf Vpt Uni Addr UniInfo
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Uni Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *AtmIf/n Uni Address* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Addr reachability (reach)

Access	Read: All Write: Illegal

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Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni
Values	internal exterior
Default	No default

ATTRIBUTE **AtmIf Vpt Uni Addr** **pnniScope**

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. This attribute will have the value of -1 if this node does not participate in a PNNI hierarchy, or if this address was provisioned with a UNI membership scope, rather than a PNNI routing level.
Mib	AtmUni
Values	Signed (-1..104)
Default	No default

ATTRIBUTE **AtmIf Vpt Uni Addr** **uniScope**

Access	Read: All Write: Illegal
Description	This attribute indicates the UNI membership scope of the ATM address. It specifies the inclusive routing hierarchy in which the address is known. This attribute will have the value 0 if the address was provisioned with a PNNI routing level rather than a UNI membership scope.
Mib	AtmUni
Values	scopeNotAvailable localNetwork localPlusOne localPlusTwo siteMinusOne intraSite intraSitePlusOne organizationMinusOne intraOrganization organizationPlusOne

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communityMinusOne
intraCommunity
communityPlusOne
regional
interRegional
global

Default — No default

COMPONENT Atmlf Vpt Uni Addr TerminateSPvpAndSPvc (TermSP)

Scope — Device

Description — *AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc*
AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc

The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib — AtmUni

Common Verbs — Help, List, Display, Add, DELete

COMPONENT Atmlf Vpt Uni Addr PnniInfo

Groups — GROUP Atmlf Vpt Uni Addr PnniInfo Provisioned (Prov)

Scope — Device

Description — *AtmIf/n Aini Addr/address,type PnniInfo*
AtmIf/n Iisp Addr/address,type PnniInfo
AtmIf/n Uni Addr/address,type PnniInfo
AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM

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address related to PNNI. This component appears only under provisioned *Address* components.

Mib	AtmUni
Common Verbs	Help List Display Add DELete

GROUP **AtmIf Vpt Uni Addr PnniInfo** **Provisioned (Prov)**

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmUni

ATTRIBUTE **AtmIf Vpt Uni Addr PnniInfo** **scope**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmUni
Values	Signed (-1..104)
Default	-1

ATTRIBUTE **AtmIf Vpt Uni Addr PnniInfo** **reachability (reach)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni

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Values	internal exterior
Default	internal

COMPONENT Atmlf Vpt Uni Addr **UniInfo**

Groups	GROUP Atmlf Vpt Uni Addr UniInfo Provisioned (Prov)
Scope	Device
Description	*Atmlf/n Uni Addr/address,type UniInfo* *Atmlf/n Vpt/m Uni Addr/address,type UniInfo* This component contains the provisioned information associated with the ATM address and related to the UNI. This component appears only under provisioned *Uni Address* components. This component may not appear together with the *Atmif Uni Addr PnniInfo* component, they are mutually exclusive.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Uni Addr UniInfo **Provisioned (Prov)**

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to a UNI address for a *UniInfo* component.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Addr UniInfo **scope**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the address UNI membership scope. It specifies the inclusive routing hierarchy in which the address will be known. The ***useDefaultScope*** value maps to ***localNetwork*** for ATM group addresses, and to ***global*** for individual addresses. Note that this value is ignored for UNI 3.x interfaces.
Mib	AtmUni

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Values	useDefaultScope (def) localNetwork (ln) localPlusOne (lpo) localPlusTwo (lpt) siteMinusOne (smo) intraSite (is) intraSitePlusOne (ispo) organizationMinusOne (omo) intraOrganization (io) organizationPlusOne (opo) communityMinusOne (cmo) intraCommunity (ic) communityPlusOne (cpo) regional (r) interRegional (ir) global (g)
Default	useDefaultScope

ATTRIBUTE Atmlf Vpt Uni Addr Unilnfo **pnniReachability (reach)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni
Values	internal exterior
Default	internal

COMPONENT Atmlf Vpt Uni **CallingAddressScreening (CallingAScr)**

Groups	GROUP Atmlf Vpt Uni CallingAScr Provisioned (Prov) GROUP Atmlf Vpt Uni CallingAScr Statistics (Stat)
Scope	Device
Description	*Atmlf/n Aini CallingAddressScreening* *Atmlf/n Uni CallingAddressScreening* *Atmlf/n Iisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not

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provisioned, all call requests are accepted and no calling address screening takes place.

Mib	AtmUni
Opt. Subcomp.	COMPONENT AtmIf Vpt Uni CallingAScr Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Uni CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni CallingAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***. If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected If the value is ***disabled***, no calling address screening is performed.
Mib	AtmUni
Values	enabled disabled
Default	disabled

ATTRIBUTE AtmIf Vpt Uni CallingAScr defaultInsertionAddress (defInsAddr)

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this

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attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.

Mib	AtmUni
Values	String (0..20, Hex)
Default	""

GROUP Atmlf Vpt Uni CallingAScr **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni CallingAScr **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpt Uni CallingAScr **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpt Uni CallingAScr **unmatchedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.

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Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Uni CallingAScr **Address (Addr)**

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Vpt Uni **CalledAddressScreening (CalledAScr)**

Groups	GROUP AtmIf Vpt Uni CalledAScr Provisioned (Prov) GROUP AtmIf Vpt Uni CalledAScr Statistics (Stat)
Scope	Device
Description	*AtmIf/n Aini CalledAddressScreening* *AtmIf/n Uni CalledAddressScreening* *AtmIf/n Iisp CalledAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to

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specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.

Mib	AtmUni
Opt. Subcomp.	COMPONENT AtmIf Vpt Uni CalledAScr Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Uni CalledAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CalledAScr* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni CalledAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***. If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected. If the value is ***disabled***, no called address screening is performed.
Mib	AtmUni
Values	enabled disabled
Default	disabled

GROUP AtmIf Vpt Uni CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni CalledAScr acceptedCalls

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Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf Vpt Uni CalledAScr** **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf Vpt Uni CalledAScr** **unmatchedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT **AtmIf Vpt Uni CalledAScr** **Address (Addr)**

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action*

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AtmIf/n Uni CalledAScr Address/addr,action
AtmIf/n Iisp CalledAScr Address/addr,action
This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address.
For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected.
For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.
For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmUni

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT Atmlf Vpt Uni PathTraceFilter (Ptf)

Groups:
GROUP Atmlf Vpt Uni Ptf Criteria
GROUP Atmlf Vpt Uni Ptf Operational (Oper)
GROUP Atmlf Vpt Uni Ptf RecordControl (Record)

Scope: Device

Description:
AtmIf/n Aini PathTraceFilter
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter
AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop,* and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When

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AtmPathTraceFilter component is deleted, all records are cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib: AtmUni

Dyn. Subcomp.: COMPONENT AtmIf Vpt Uni Ptf PathTraceRecord (PTRecord)

Common Verbs:
Help
List
Display
Add
DELete

VERB START **AtmIf Vpt Uni Ptf**

Impact: Service

Description:
START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP **AtmIf Vpt Uni Ptf**

Impact: Service

Description:
STOP AtmIf/n Aini PathTraceFilter
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

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VERB CLEAR **AtmIf Vpt Uni Ptf**

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP **AtmIf Vpt Uni Ptf** **Criteria**

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE **AtmIf Vpt Uni Ptf** **traceInfo (tInfo)**

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmUni
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

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ATTRIBUTE Atmlf Vpt Uni Ptf **calledPartyPrefix (cldPref)**

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmUni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf **callingPartyPrefix (clgPref)**

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmUni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf **connectionType (type)**

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE Atmlf Vpt Uni Ptf **connectionConfiguration (config)**

Access	Read: All Write: All

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Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE Atmlf Vpt Uni Ptf **serviceCategory (svcCat)**

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP Atmlf Vpt Uni Ptf **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Ptf **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmUni
Values	active inactive

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Default	inactive

ATTRIBUTE Atmlf Vpt Uni Ptf **recordCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	AtmUni
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf **matchedConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmUni
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf **elapsedTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmUni
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf **timeRemaining**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmUni
Values	Decimal (0..70560)

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Units	minutes
Default	No default

GROUP Atmlf Vpt Uni Ptf **RecordControl (Record)**

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Ptf **traceTimeout**

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmUni
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE Atmlf Vpt Uni Ptf **maxTraceRecords (mRecords)**

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmUni
Values	Decimal (1..200)
Default	2

COMPONENT Atmlf Vpt Uni Ptf **PathTraceRecord (PTRecord)**

Groups	GROUP Atmlf Vpt Uni Ptf PTRecord Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord* *Atmlf/n Iisp Ptf PTRecord* *Atmlf/n Uni Ptf PTRecord* *Atmlf/n Pnni Ptf PTRecord* *Atmlf/n Vpt/n Aini Ptf PTRecord* *Atmlf/n Vpt/n Iisp Ptf PTRecord*

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AtmIf/n Vpt/n Uni Ptf PTRecord
AtmIf/n Vpt/n Pnni Ptf PTRecord

This component represents the path trace record for the last failed connection against this filter.

Mib	AtmUni
Dyn. Subcomp.	COMPONENT AtmIf Vpt Uni Ptf PTRecord Hop
Common Verbs	Help List Display

GROUP **AtmIf Vpt Uni Ptf PTRecord** **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmUni

ATTRIBUTE **AtmIf Vpt Uni Ptf PTRecord** **status**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmUni
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE **AtmIf Vpt Uni Ptf PTRecord** **timeStamp**

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.

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Mib	AtmUni
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmUni
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmUni
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord **diagCode**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmUni
Values	String (0..8, ASCII)
Default	No default

COMPONENT Atmlf Vpt Uni Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	GROUP AtmIf Vpt Uni Ptf PTRecord Hop Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmUni
Dyn. Subcomp.	COMPONENT AtmIf Vpt Uni Ptf PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP Atmlf Vpt Uni Ptf PTRecord Hop Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **ingressVpiVci (vpiVci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value

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Mib	AtmUni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmUni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **portId**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **portName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback

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	Received at Trace Destination Node" indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the "PNNI Crankback Gap" indicator is present. The "PNNI Crankback Gap" indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmUni
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component

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Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmUni
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **blockedNodeId (bNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **blockedLinkPortId (bPortId)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **blockedLinkSucceedingNodeId (sNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **dstVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)

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Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmUni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmUni

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Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	no yes
Default	no

COMPONENT AtmIf Vpt Uni Ptf PTRecord Hop **VendorSpecificInfo (Vsi)**

Instance	Decimal (0..10)
Groups	GROUP AtmIf Vpt Uni Ptf PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

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	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmUni
Common Verbs	Help List Display

GROUP Atmlf Vpt Uni Ptf PTRecord Hop Vsi **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop Vsi **length**

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmUni
Values	Decimal (0..11)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop Vsi **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmUni
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptf PTRecord Hop Vsi **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmUni
Values	String (1..8, Hex)
Default	No default

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COMPONENT Atmlf Vpt Uni PathTraceTestConnection (Ptt)

Groups	GROUP Atmlf Vpt Uni Ptt Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini PathTraceTestConnection* *Atmlf/n Iisp PathTraceTestConnection* *Atmlf/n Uni PathTraceTestConnection* *Atmlf/n Pnni PathTraceTestConnection* *Atmlf/n Vpt/vpi Aini PathTraceTestConnection* *Atmlf/n Vpt/vpi Iisp PathTraceTestConnection* *Atmlf/n Vpt/vpi Uni PathTraceTestConnection* *Atmlf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.
Mib	AtmUni
Common Verbs	Help List Display

VERB TRACE Atmlf Vpt Uni Ptt

Impact	Passive
Description	*TRACE Atmlf/n Aini AtmPathTraceTest* *TRACE Atmlf/n Iisp AtmPathTraceTest* *TRACE Atmlf/n Uni AtmPathTraceTest* *TRACE Atmlf/n Pnni AtmPathTraceTest* *TRACE Atmlf/n Vpt/vpi Aini AtmPathTraceTest* *TRACE Atmlf/n Vpt/vpi Iisp AtmPathTraceTest* *TRACE Atmlf/n Vpt/vpi Uni AtmPathTraceTest* *TRACE Atmlf/n Vpt/vpi Pnni AtmPathTraceTest* This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node. Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf Vpt Uni Ptt Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Ptt **traceCrankback**

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmUni
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Uni Ptt **txTrafficDescType (txTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmUni
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE Atmlf Vpt Uni Ptt **rxTrafficDescType (rxTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute

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When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.

Mib: AtmUni

Values:
1
2
3
4
5
6
7
8
9
sameAsTx

Default: sameAsTx

ATTRIBUTE Atmlf Vpt Uni Ptt **atmServiceCategory (service)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

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	The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.
Mib	AtmUni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE **AtmIf Vpt Uni Ptt** **fwdQosClass (fwdQos)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmUni
Values	0 1 2 3 4
Default	0

ATTRIBUTE **AtmIf Vpt Uni Ptt** **bwdQosClass (bwdQos)**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmUni
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE **Atmlf Vpt Uni Ptt** **bearerClassBbc (bcBbc)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

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Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmUni

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Uni Ptt **transferCapabilityBbc (tcBbc)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. UNI 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

NotApplicable specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

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The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmUni

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Uni Ptt **clippingBbc (cBbc)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

Mib: AtmUni

Values:
no
yes

Default: no

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ATTRIBUTE Atmlf Vpt Uni Ptt **bestEffort**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmUni
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Uni Ptt **testCalledAddress**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmUni
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptt **testCalledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmUni

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Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptt **testSpecifiedPath**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmUni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Ptt **bwdQosParameters (bqp)**

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE Atmlf Vpt Uni Ptt **fwdQosParameters (fqp)**

Access	Read and write

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Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE **Atmlf Vpt Uni Ptt txTrafficDescParm (txTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

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When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter

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3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **Atmlf Vpt Uni Ptt** **rxTrafficDescParm (rxTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must

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be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or

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I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT **AtmIf Vpt Uni** **ServiceTrace (SrvTrace)**

Groups	GROUP AtmIf Vpt Uni SrvTrace Operational
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmUniTrace
Common Verbs	Help List Display Add DELete

VERB Start **AtmIf Vpt Uni SrvTrace**

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

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VERB Stop **AtmIf Vpt Uni SrvTrace**

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP **AtmIf Vpt Uni SrvTrace** **Operational**

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmUniTrace

ATTRIBUTE **AtmIf Vpt Uni SrvTrace** **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmUniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE **AtmIf Vpt Uni SrvTrace** **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmUniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE **AtmIf Vpt Uni SrvTrace** **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.

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Mib	AtmUniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE **AtmIf Vpt Uni SrvTrace** **session**

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmUniTrace
Values	The name of the component
Default	No default

COMPONENT **AtmIf Vpt Uni** **Reroute**

Groups	GROUP AtmIf Vpt Uni Reroute LocalOperational (LOper) GROUP AtmIf Vpt Uni Reroute GlobalOperational (GOper) GROUP AtmIf Vpt Uni Reroute Statistics (Stats)
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmUni
Subcomponents	COMPONENT AtmIf Vpt Uni Reroute Ov
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE Atmlf Vpt Uni Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Uni Reroute* *Optimize [-all] AtmIf/n Aini Reroute* *Optimize [-all] AtmIf/n Iisp Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Uni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Aini Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Iisp Reroute* This command triggers path optimization for the connection segments managed by the Reroute component. By default, only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection. The -all option causes all connection segments subscribed to path optimization to be considered. Using the Optimize command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP Atmlf Vpt Uni Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute localEligibleRecoveredCon (lerc)

Access	Read only

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Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **localIneligibleRecoveredCon (lirc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **localLastRrCauseCode (lrrcc)**

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **localPathsOptimized (lPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Uni Reroute **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmUni

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ATTRIBUTE Atmlf Vpt Uni Reroute **globalSubscribedConnections (gsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **globalEligibleRecoveredCon (gerc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **globalIneligibleRecoveredCon (girc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **globalLastRrCauseCode (grrcc)**

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **globalPathsOptimized (gPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface.

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	Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Uni Reroute **Statistics (Stats)**

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Reroute **totalLocalConnectionRecoveries (tLConRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **totalLocalFailedRecoveries (lFailedRec)**

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **totalLocalPathOptimizations (tLPathOpt)**

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **totalGlobalConnectionRecoveries (tGConRec)**

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Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **totalGlobalFailedRecoveries (gFailedRec)**

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **totalGlobalPathOptimizations (tGPathOpt)**

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Uni Reroute **totalOptimizationPasses (optPass)**

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Vpt Uni Reroute **Ov**

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Groups	GROUP AtmIf Vpt Uni Reroute Ov Provisioned (Prov) GROUP AtmIf Vpt Uni Reroute Ov LocalProvisioned (LProv) GROUP AtmIf Vpt Uni Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmUni
Common Verbs	Help List Display

GROUP AtmIf Vpt Uni Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.

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localEbr: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmUni

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Atmlf Vpt Uni Reroute Ov **numOptAttempts**

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmUni

Values:
Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default: sameAs

ATTRIBUTE Atmlf Vpt Uni Reroute Ov **moduleOptimizationConnections**

Access: Read and write

Description: This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni*

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Reroute component.

One of the following values can be specified:
sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: AtmUni

Values:
none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Atmlf Vpt Uni Reroute Ov **switchoverMechanism**

Access: Read and write

Description: This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmUni

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP Atmlf Vpt Uni Reroute Ov **LocalProvisioned (LProv)**

Properties: Provisioned

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Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	AtmUni

ATTRIBUTE Atmlf Vpt Uni Reroute Ov **localConnectionRecoverySubscr (lConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute:*** If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values. ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.
Mib	AtmUni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Vpt Uni Reroute Ov **localPathOptimizationSubscr (lPathOpt)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

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Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib — AtmUni

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

GROUP Atmlf Vpt Uni Reroute Ov **GlobalProvisioned (GProv)**

Properties — Provisioned

Description — This group contains the provisionable attributes for the global and EBR rerouting protocol.

Mib — AtmUni

ATTRIBUTE Atmlf Vpt Uni Reroute Ov **globalConnectionRecoverySubscr (gConRec)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

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One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib: AtmUni

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Vpt Uni Reroute Ov **globalPathOptimizationSubscr (gPathOpt)**

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.

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transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib	AtmUni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT Atmlf Vpt TrafficManagement (Tm)

Groups	GROUP AtmIf Vpt Tm Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpc/vpi TrafficManagement,* *AtmIf/n Vcc/vpi.vci TrafficManagement,* *AtmIf/n Vpt/vpi TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci TrafficManagement* The *Tm* subcomponent contains the operational traffic management attributes of a connection. It is created dynamically for each activated *Vcc*, *Vpc,* or *Vpt* component.
Mib	AtmCore
Dyn. Subcomp.	COMPONENT AtmIf Vpt Tm AvailableBitRate (Abr)
Common Verbs	Help List Display

GROUP Atmlf Vpt Tm Operational (Oper)

Properties	Operational
Description	This group contains attributes for the *Tm* component to reflect operational traffic attributes.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Tm txTrafficDescType (txTdt)

Access	Read only
Description	T his attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore

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Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE Atmlf Vpt Tm **txQosClass (txQos)**

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	0 1 2 3 4 notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Tm **txQueueLength (txQLen)**

Access	Read only

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Description	This attribute indicates the current number of cells in the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the length of the common queue which is used for this ATM service category. If this connection has *unshapedTransmitQueueing* attribute displayed as ***fifo***, this attribute indicates the number of cells for this connection which are enqueued in a first-in-first-out queuing method for this ATM service category. This will only occur for connections on ATM IP cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the length of the per-VC queue. For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current number of cells in the link class queue used by this connection to buffer its traffic. This attribute does not apply to basic *Vpt*s.
Mib	AtmCore
Values	Decimal (0..1011840)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Tm **txQueueCongestionState (txQCong)**

Access	Read only
Description	This attribute indicates the congestion state of the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the congestion state of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the congestion state of the per-VC queue. The congestion state of a queue is indicated by a numeric value ranging from 0 to 3. When a queue is in a congested state x, only traffic with discard priority (DP) 0 to x are enqueued. Traffic with DP > x is discarded. For example, if the congestion state is 3, there is no congestion and all traffic is enqueued. Likewise, when the congestion state is 0, there is maximum congestion and only traffic with DP=0 is enqueued on that queue. For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current

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congestion state of the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib — AtmCore

Values — Decimal (0..3)

Default — No default

ATTRIBUTE Atmlf Vpt Tm holdingPriority (hpri)

Access — Read only

Description — This attribute indicates the actual holding priority in effect for this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. Some applications, for example *Vcc Test*, may override the provisioned holding priority.

A value of ***notApplicable*** is displayed when this is an elastic connection. Holding priority does not apply to bandwidth elastic connections.

Holding priority has no effect if the equivalent cell rate (ECR) for a connection is zero.

This attribute does not apply to *Vpt Vcc*s.

Mib — AtmCore

Values — 0
1
2
3
4
notApplicable

Default — No default

ATTRIBUTE Atmlf Vpt Tm rxTrafficDescType (rxTdt)

Access — Read only

Description — This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.

Mib — AtmCore

Values — 1
2

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3
4
5
6
7
8
9

Default — No default

ATTRIBUTE Atmlf Vpt Tm rxQosClass (rxQos)

Access — Read only

Description — This attribute indicates the quality of service for the called to calling direction for this connection. This is only applicable to Soft PVC and SVC connections.

Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video).

Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video).

Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib — AtmCore

Values
0
1
2
3
4
notApplicable
sameAsFwd

Default — No default

ATTRIBUTE Atmlf Vpt Tm atmServiceCategory (service)

Access — Read only

Description — This attribute indicates the ATM service category used for traffic in both directions of the connection.

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The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications; that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr) availableBitRate (abr)
Default	No default

ATTRIBUTE **Atmlf Vpt Tm** **trafficShaping (trShaping)**

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Access	Read only
Description	This attribute indicates the traffic shaping state of the connection. A value of ***notApplicable*** indicates that traffic shaping is not applicable or not supported for this connection. This is the case: - when the *txTrafficDescType* is 1 or 2. - for standard *Vpt Vcc*s and basic *Vpt*s. - for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, when the *atmServiceCategory* is ***constantBitRate***. In these cases, the value of ***notApplicable*** is indicated regardless of whether traffic shaping is enabled or disabled in the provisioning data. A value of ***disabled*** indicates that traffic shaping is applicable and supported for the type of connection but has been turned off in the provisioning data. A value of ***linear*** or ***inverseUpc*** indicates that traffic shaping is applicable and supported for the type of connection and has been turned on in the provisioning data. This is the only case that indicates that traffic shaping is performed on the connection. In this case, the actual shaping rate is reflected in the *txTrafficDescParm* attribute, parameter number 4. A value of ***linear*** indicates that traffic is being shaped at the constant rate indicated in *txTrafficDescParm* 4. A value of ***inverseUpc*** indicates that the shaper strictly conforms to the requirements of a dual leaky bucket UPC enforcer. This value is indicated if traffic shaping is enabled, and the *txTrafficDescType* for this connection is 6, 7 or 8. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is always ***disabled***. Traffic shaping for connections with *atmServiceCategory* as ***availableBitRate*** (*txTrafficDescType* 9) depends upon the *abrConnectionType* attribute. If *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, the value of this attribute is ***linear***. If *abrConnectionType* is ***erSwitch*** or ***efciSwitch***, this attribute is ***notApplicable***.
Mib	AtmCore
Values	disabled linear inverseUpc notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Tm bearerClassBbc (bcBbc)

Access	Read only

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Description	This attribute indicates the bearer capability for this connection. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. Class vp service is used to indicate a transparent VP service when the user is requesting an ATM only service from the network. In this case, the network does not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except for VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP and SVP connections. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	a c x vp notApplicable
Default	No default

ATTRIBUTE **Atmlf Vpt Tm** **transferCapabilityBbc (tcBbc)**

Access	Read only
Description	This attribute indicates the transfer capability for this connection. Uni 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> 0: NoIndication, NoIndication 1: NoIndication, yes 2: NoIndication, no

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5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance, or in the case that the transfer capability in the call request was set to NoIndication.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required for the connection.

The value no for end-to-end timing indicates that end-to-end timing is not required for the connection.

Mib — AtmCore

Values
0
1
2
5
8
9
10
notApplicable

Default — No default

ATTRIBUTE **AtmIf Vpt Tm** **clippingBbc (cBbc)**

Access — Read only

Description — This attribute indicates the value of the clipping susceptibility parameter in the broadband bearer capability (BBC) Information Element.

Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib — AtmCore

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Values	no yes notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Tm **unshapedTransmitQueueing (unshap)**

Access	Read only
Description	This attribute indicates the unshaped transmit queuing state of the connection. A value of ***common*** indicates that transmit traffic is being enqueued onto the common transmit queue for this service category. The *txQueueLength* attribute indicates the current length of the common transmit queue. A value of ***fifo*** indicates that transmit traffic is being queued in a first-in-first-out basis for this service category. This is similar to ***common*** queuing, but the *txQueueLength* attribute indicates the number of cells in this connection queue. A value of ***fifo*** will only be indicated for connections on ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***. A value of ***perVc*** indicates that transmit traffic is being enqueued onto a per-VC queue for this connection. A value of ***notApplicable*** indicates that transmit traffic is being shaped for this connection, or that unshaped transmit queuing is not applicable for this type of connection. Transmit traffic for a shaped connection is enqueued onto a per-VC queue, but this attribute is only applicable for unshaped connections. Unshaped transmit queuing is not applicable for basic *Vpt*s.
Mib	AtmCore
Values	perVc common notApplicable fifo
Default	No default

ATTRIBUTE Atmlf Vpt Tm **bestEffort**

Access	Read only
Description	This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element. The value ***indicated*** implies that the quality of service for this connection

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is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib — AtmCore

Values — indicated
notIndicated
notApplicable

Default — No default

ATTRIBUTE AtmIf Vpt Tm forceTagging (tagging)

Access — Read only

Description — This attribute indicates the state of force tagging option for this connection. Force tagging refers to setting the CLP bit for all cells on a connection.

A value of ***enabled*** indicates that the CLP bit is being set to 1 for all cells in the transmit direction on this connection.

A value of ***disabled*** indicates that the CLP bit is unchanged for cells in the transmit direction on this connection. The value ***disabled*** is always displayed for *Vpt*s since forced tagging is applied on a per *Vpt Vcc* basis.

Mib — AtmCore

Values — disabled
enabled

Default — No default

ATTRIBUTE AtmIf Vpt Tm weight

Access — Read only

Description — This attribute indicates the relative weight of this unshaped connection. Connections with a larger weight get a larger proportion of the link bandwidth or in the case of standard *Vpt Vcc*s, the *Vpt* bandwidth.

For all but standard *Vpt Vcc*s, the default connection weight is determined by the weight policy for a service category and the traffic descriptor for a connection. For standard *Vpt Vcc*s, the default connection weight is determined by the *Vcc*'s service category.

A value from 1 to 4095 indicates an actual weight. The value ***upToQueueLimit*** indicates that the weight of a connection is up to the transmit queue limit for this connection and is used for connections which have the value of the *unshapedTransmitQueueing* attribute displayed as ***fifo***.

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This attribute has a displayed value of ***notApplicable*** in the following cases:
- This connection has the value of the *trafficShaping* attribute displayed as either ***linear*** or ***inverseUpc***.
- This connection has the value of the *trafficShaping* attribute displayed as ***disabled***, but the connection's service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc***.
- This connection has the value of the *unshapedTransmitQueueing* attribute displayed as ***common***.
- This is a basic *Vpt* connection.
- For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, since per-connection weight is not supported.

Mib — AtmCore

Values — Decimal (1..4095)
upToQueueLimit
notApplicable

Default — No default

ATTRIBUTE Atmlf Vpt Tm **usageParameterControl (upc)**

Access — Read only

Description — This attribute indicates the UPC state of the connection.

A value of ***notApplicable*** indicates that UPC is not applicable or not supported for the connection. This is the case:
- when the connection's *rxTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.

A value of ***notApplicable*** is set regardless of whether UPC is disabled or enabled in provisioning data.

A value of ***disabled*** indicates that UPC is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***enforced*** indicates that UPC is actively checking conformance for the connection and is discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. On some ATM cards, the counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

A value of ***monitored*** indicates that UPC is actively checking conformance for the connection and counting the violations, but is not discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. The counts of UPC violations

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are visible in the *Vcc*, *Vpc* or *Vpt. rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

If the *atmServiceCategory* for this connection is ***availableBitRate***, a value of ***enforced*** indicates that Dynamic Generic Cell Rate Algorithm (DGCRA) is active for the connection. The traffic descriptor parameters used for DGCRA enforcement are reflected in the *rxTrafficDescParm* of the connection.

Mib — AtmCore

Values
enforced
disabled
monitored
notApplicable

Default — No default

ATTRIBUTE Atmlf Vpt Tm txPacketWiseDiscard (txpd)

Access — Read only

Description

This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point.

This attribute is not applicable for *Vpt*s.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

A value of ***wred*** indicates that Weighted Random Early Detection is in effect at this connection point. W-RED can be enabled by provisioning for PVCs and SPVCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Packet-wise functions are not applicable to virtual path connections (VPCs) on these cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards,

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packet-wise discard functions apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points.

For ***16pOC3PosAtm***, ***4pMRPosAtm*** and ***1pOC48ChSmIrAtm*** cards, packet-wise discard functions apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points.

Mib	AtmCore
Set of	ppd epd wred
Default	No default

ATTRIBUTE Atmlf Vpt Tm **rxPacketWiseDiscard (rxpd)**

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point. This attribute is not applicable for *Vpt*s. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements. A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, packet-wise functions are not applicable to virtual path connections (VPCs). For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch, 4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs. For ***1pOC48ChSmIrAtm*** card, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs.

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For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Note that a provisioned value of ***enabled*** for the *Vcc/Vpc Vcd/Vpd Tm rxPacketWiseDiscard* provisionable attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in actually enabling packet-wise discard functions in the receive data direction of a connection locally on these cards, thus does not affect the operational value displayed.

Mib — AtmCore

Set of — ppd, epd

Default — No default

ATTRIBUTE Atmlf Vpt Tm bandwidthElastic (bwElastic)

Access — Read only

Description — This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application (for example, *Trunk*) running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced is displayed in the *bandwidthReduction* attribute.

A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection is not released.

A value of ***no*** indicates that the bandwidth for this connection is not reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority*.

Bandwidth elasticity has no effect for connections which have an equivalent cell rate (ECR) of zero.

This attribute is not applicable for *Vpt*s and *Vpt Vcc*s.

Mib — AtmCore

Values — no, yes

Default — No default

ATTRIBUTE Atmlf Vpt Tm bandwidthReduction (bwReduction)

Access — Read only

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Description	This attribute shows the amount by which the bandwidth has been reduced for this connection. This value is non-zero only for connections which have *bandwidthElastic* displayed as ***yes***, and which are also operating in a reduced bandwidth mode. This is typically the case for selected connections running over an IMA link. This attribute takes a value from 0 (no reduction) up to the ECR. For all connections which are running at their full allocated bandwidth, *bwReduction* has the value 0. Connections which have been reduced in allocated bandwidth have a positive number for this attribute. The *bwReduction* may be subtracted from the ECR (which is displayed as *txTrafficDescParm* 5) to determine the actual bandwidth allocated to this connection.
Mib	AtmCore
Values	Decimal (0..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Atmlf Vpt Tm **abrConnectionType (abrType)**

Access	Read only
Description	This attribute indicates the type of ABR behavior which is in effect at this connection. This attribute is only applicable if the *atmServiceCategory* attribute is ***availableBitRate***. If the *atmServiceCategory* attribute is not ***availableBitRate***, this attribute value is set to ***notApplicable***. For ATM cards which do not support ABR connections, the possible values for this attribute are ***notApplicable***, ***efciSwitch***, or ***nonAbrInterworking***. In EFCI marking mode, the Explicit Forward Congestion Indication (EFCI) field in the data cell headers is used to indicate transmit queue congestion. For ATM cards which do support ABR connections, if the *connectionPointType* is ***connectionEndPoint***, the value of this attribute is ***sourceDest***. In this mode, the ABR Source and Destination behavior is in effect at this connection. This attribute is also ***sourceDest*** in the case where the next hop connection is specified as ***nonAbrInterworking***. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. If the *connectionPointType* is not ***connectionEndPoint***, the value of this attribute depends upon the *abrConnectionType* provisioning and the card type to which the traffic is forwarded on the backplane. The default *abrConnectionType* is provisioned at the *CA Abr abrConnectionType* attribute, and may be overridden for a provisioned connection in the *Vcd Tm abrConnectionType* or *Vpd Tm abrConnectionType* attribute. If the *CA Abr abrConnectionType* attribute is ***virtualSourceDest*** at either one of the two connection points, and if both the connection points are defined on ATM cards which support ABR connections, virtual source and destination behavior is applied to the connection. In this instance, the attribute displays the value ***virtualSourceDest***.

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This attribute has the value ***erSwitch*** if ABR explicit rate functionality is in effect at this connection. In this mode, the switch may modify the Explicit Rate (ER) field of backward Resource Management (RM) cells to indicate the status of congestion at this connection point.

This attribute has the value ***nonAbrInterworking*** in the case where this connection point is functioning as an SPVC origin for an ABR connection where the link side of this connection is configured as a non-ABR ATM service category. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

Mib — AtmCore

Values
erSwitch
efciSwitch
virtualSourceDest
sourceDest
nonAbrInterworking
notApplicable

Default — No default

ATTRIBUTE Atmlf Vpt Tm **txTrafficDescParm (txTdp)**

Access — Read only

Description — This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR), actual cell rate (ACR), explicit rate (ER), equivalent cell rate (ECR), and actual shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds.

When *txTrafficDescType* is 1 or 2, parameters 1 through 5 are unused.

In this description, PCR is the greater of either the PCR or the requested shaping rate (parameter 1 or parameter 5) specified in the *txTrafficDescParm* attribute under the *Vcd Tm* or *Vpd Tm* component.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging.

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When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, parameter 4 reflects the actual shaping rate in cell/s for this connection. For CQC-based ATM cards, the set of available shaping rates is based on the number of interfaces doing shaping (attribute *perVcQueueInterfaces*), and the *shapingScalingFactor* attribute of the *Arc Cqc Override* component. A rate of zero (0) indicates that shaping is not performed, or that the interface is down.

When *txTrafficDescType* is 9***,*** parameter 1 represents the PCR; parameter 2 represents the Cell Delay Variation Toleration (CDVT); parameter 3 represents the Minimum Cell Rate (MCR); the meaning of parameter 4 depends upon the value of the *abrConnectionType* attribute. if *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, parameter 4 represents the Allowed Cell Rate (ACR); If *abrConnectionType* is ***erSwitch***, parameter 4 represents the Explicit Rate (ER); and if *abrConnectionType* is ***efciSwitch***, parameter 4 reflects the actual shaping rate in cell/s for this connection.

When *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9, parameter 5 reflects the equivalent cell rate in cell/s for this connection as determined by the Connection Admission Control (CAC) algorithm. The equivalent cell rate is useful in determining the admission characteristics of this connection.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vpt Tm **txQueueThresholds (txQThresh)**

Access	Read only
Description	This attribute indicates the queue limit and the discard thresholds for the transmit queue of this connection.

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If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the thresholds of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the thresholds of the per-VC queue.

The first element indicates the queue limit. The provisioned value of the transmit queue limit is derived from the *txQueueLimit* attribute under the service category subcomponents of the *CA* component for the service category of this connection.

The second element is the threshold that marks the transition from congestion state 1 to congestion state 0. This is the threshold at which traffic with discard priority (DP) = 1 is discarded. This threshold is set at approximately 90 percent of the first parameter, the operational queue limit.

The third element is the threshold that marks the transition from congestion state 2 to congestion state 1. This is the threshold at which traffic with DP = 2 is discarded. This threshold is set at approximately 75 percent of the first parameter, the operational queue limit.

The fourth element is the threshold that marks the transition from congestion state 3 to congestion state 2. This is the threshold at which traffic with DP = 3 is discarded. This threshold is set at approximately 35 percent of the first parameter, the operational queue limit.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the thresholds of the link class queue used by this connection to buffer it traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Vector of	Decimal (0..1011840)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE **Atmlf Vpt Tm** **rxTrafficDescParm (rxTdp)**

Access	Read only
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. Cell delay variation tolerance (CDVT) is expressed in microseconds.

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When *rxTrafficDescType* is 1 or 2, none of the parameters are used.

When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents CDVT; parameter 3 represents the MCR; parameter 4 is not used.

If *upc* is ***disabled*** for this connection, the values of PCR, SCR, MBS and CDVT are the provisioned parameters.

If *upc* is ***enabled***, the values of PCR, SCR, MBS, and CDVT are exactly the values used by the usage parameter control hardware in policing the arriving traffic. These may vary slightly from the provisioned values due to granularity of the hardware. In the case where the PCR is equal to the SCR, the effective MBS is zero.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE **Atmlf Vpt Tm** **txQosParameters (tqp)**

Access	Read only

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Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE Atmlf Vpt Tm rxQosParameters (rqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

COMPONENT Atmlf Vpt Tm AvailableBitRate (Abr)

Groups	GROUP Atmlf Vpt Tm Abr Operational (Oper)

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Scope	Device
Description	*AtmIf/n Vpc/vpi Tm AvailableBitRate,* *AtmIf/n Vcc/vpi.vci Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Tm AvailableBitRate* This component contains ABR-related operational attributes of a connection. It is dynamically created for connections where the value of the *atmServiceCategory* attribute is ***availableBitRate***, and where the value of the *abrConnectionType* attribute is ***sourceDest***, or ***virtualSourceDest***.
Mib	AtmCore
Common Verbs	Help List Display

GROUP Atmlf Vpt Tm Abr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for connections using ABR service category.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Tm Abr initialCellRate (icr)

Access	Read only
Description	This attribute indicates the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. For nailed-up connections, this attribute is determined by the provisioned value of the *initialCellRate* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element. The ICR for a connection is a value between the MCR and the PCR. Furthermore, ICR has an upper bound determined by the *transientBufferExposure* divided by *fixedRoundTripTime*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr transientBufferExposure (tbe)

Access	Read only

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Description	This attribute indicates the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the resource to send during start-up periods, before the first Resource Management (RM) cell returns. For nailed-up connections, this attribute is determined by the provisioned value of the *transientBufferExposure* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **fixedRoundTripTime (frtt)**

Access	Read only
Description	This attribute indicates the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. For nailed-up connections, this attribute is determined by the provisioned value of the *fixedRoundTripTime* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **rateDecreaseFactor (rdf)**

Access	Read only
Description	This attribute indicates the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

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Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **rateIncreaseFactor (rif)**

Access	Read only
Description	This attribute indicates the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateIncreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **maxCellPerRmCell (nrm)**

Access	Read only
Description	This attribute indicates the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxCellsPerRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **maxTimeBetweenRmCell (trm)**

Access	Read only

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Description	This attribute indicates the TRM parameter for this connection. TRM provides an upper bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxTimeBetweenRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **cutoffDecreaseFactor (cdf)**

Access	Read only
Description	This attribute indicates the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the *forwardRmCellLimit* attribute, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *cutoffDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64)
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **acrDecreaseTimeFactor (adtf)**

Access	Read only
Description	This attribute indicates the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection.

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	ADTF is the time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. For nailed-up connections, this attribute is determined by the provisioned value of the *acrDecreaseTimeFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **forwardRmCellLimit (crm)**

Access	Read only
Description	This attribute indicates the CRM parameter for this connection. CRM is the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is obtained as *transientBufferExposure* divided by *maxCellsPerRmCell*.
Mib	AtmCore
Values	Decimal (1; 3; 7; 15; 31; 63; 127; 255; 511; 1023; 2047; 4095)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **txRateChangeInfo (txrci)**

Access	Read only
Description	This attribute indicates the rate change information put into the last forward Resource Management (RM) cell turned around as a backward-RM cell. For connections configured as an ABR Source or Destination, the turned around backward-RM cell is sent over the interface. For connections configured as an ABR Virtual Source or Virtual Destination, the turned around backward-RM cell is sent over the backplane.
Mib	AtmCore

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Values	congestionIndicated noIncreaseIndicated explicitRateIndicated
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **acrRateChangeInfo (arci)**

Access	Read only
Description	This attribute indicates the type of change in the Allowed Cell Rate (ACR) as a result of the information in the last backward Resource Management (B-RM) cell received from the interface. This attribute value is only applicable when the *Vcc Tm* or *Vpc Tm* *abrConnectionType* attribute is ***sourceDest*** or ***VirtualSourceDest***. In all other cases, this attribute value is ***notApplicable***. A value of ***noChange*** indicates that the rate did not change as a result of the last backward RM cell received. A value of ***decreasedByRdf*** or ***increasedByRif*** indicates that the ACR was increased or decreased by the corresponding factor. This change is as a result of the CI or NI bit setting in the last backward RM cell, or an ADTF timeout. A value of ***setToExplicitRate*** indicates that the ACR was set to the ER value in the last backward RM cell.
Mib	AtmCore
Values	noChange decreasedByRdf increasedByRif setToExplicitRate notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Tm Abr **txFwdRmCells**

Access	Read only
Description	This attribute counts the number of forward Resource Management (RM) cells sent over the interface since the last backward RM-cell was received from the interface. If the value of this attribute is greater than or equal to the value of *forwardRmCellLimit*, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. This counter is reset to zero each time a backward-RM cell is received. This counter does not wrap to zero if it reaches its maximum value of 4095 in order to indicate that no backward RM cell has been received.

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Mib	AtmCore
Values	Decimal (0..4095)
Units	cells
Default	No default

ATTRIBUTE **AtmIf Vpt Tm Abr** **rxEfci**

Access	Read only
Description	This attribute indicates the value of the Explicit Forward Congestion Indication (EFCI) bit of the last data cell received from the interface. When a forward Resource Management (RM) cell is turned around as a backward-RM cell, the Congestion Indication (CI) field of the backward-RM cell is set to 1, if the value of this attribute is ***indicated***. This attribute is set to ***notIndicated*** each time a backward-RM cell is transmitted.
Mib	AtmCore
Values	notIndicated indicated
Default	No default

COMPONENT **AtmIf Vpt** **Aini**

Groups	GROUP AtmIf Vpt Aini Provisioned (Prov) GROUP AtmIf Vpt Aini AccountingOptions (AcctOpt) GROUP AtmIf Vpt Aini VAiniProvisioned (VProv)
Scope	Device
Description	*AtmIf/n VirtualPathTerminator/m Aini* This component represents an ATM Inter-Network Interface (AINI) signaling interface. If this component is provisioned, the *Uni, Iisp,* or *Pnni* component can not be provisioned under the same *AtmIf Vpt* component.

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	If this component is deleted, then all associated *Vcc* components are deleted.
Mib	AtmAini
Subcomponents	COMPONENT AtmIf Vpt Aini Signalling (Sig)
Opt. Subcomp.	COMPONENT AtmIf Vpt Aini CallingAddressScreening (CallingAScr) COMPONENT AtmIf Vpt Aini CalledAddressScreening (CalledAScr) COMPONENT AtmIf Vpt Aini PathTraceFilter (Ptf) COMPONENT AtmIf Vpt Aini ServiceTrace (SrvTrace) COMPONENT AtmIf Vpt Aini Reroute
Dyn. Subcomp.	COMPONENT AtmIf Vpt Aini PathTraceTestConnection (Ptt)
Dyn. Subcomp.	COMPONENT AtmIf Vpt Aini Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Aini Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Aini* component.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmAini
Values	networkSide userSide
Default	networkSide

ATTRIBUTE Atmlf Vpt Aini softPvpAndPvcRetryPeriod (sRetryPeriod)

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.

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Mib	AtmAini
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE Atmlf Vpt Aini softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmAini
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE Atmlf Vpt Aini passAlongRequest

Access	Read: All Write: All
Description	This attribute specifies whether unrecognized messages and information elements with the pass along request set are accepted when received at the interface. If they are not allowed, then they are discarded and the procedures specified by the message or information element's action indicator field are followed.
Mib	AtmAini
Values	allowed discarded
Default	allowed

GROUP Atmlf Vpt Aini AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini accountCollection (aco)

Access	Read: All Write: All

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Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	AtmAini
Set of	bill test study audit force
Default	No default

ATTRIBUTE Atmlf Vpt Aini accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***. If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.
Mib	AtmAini
Values	origTerm intermediate
Default	intermediate

ATTRIBUTE Atmlf Vpt Aini accountClass (acl)

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Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

ATTRIBUTE Atmlf Vpt Aini **serviceExchange (sre)**

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

GROUP Atmlf Vpt Aini **VAiniProvisioned (VProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Aini* component which are specific to virtual AINI interfaces.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini **vpci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Virtual Path Connection Identifier (VPCI) to be used between this signalling entity and its peer. The VPCI of the peer virtual AINI must have the same value for switched connections to be set up across the interface.
Mib	AtmAini
Values	Decimal (0..255)

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Default	0

COMPONENT Atmlf Vpt Aini Signalling (Sig)

Groups	GROUP Atmlf Vpt Aini Sig Provisioned (Prov) GROUP Atmlf Vpt Aini Sig OsiState (State) GROUP Atmlf Vpt Aini Sig Operational (Oper) GROUP Atmlf Vpt Aini Sig Statistics (Stats)
Scope	Device
Description	*Atmlf/n Aini Signalling* *Atmlf/n Iisp Signalling* *Atmlf/n Uni Signalling* *Atmlf/n Pnni Signalling* *Atmlf/n Vpt/m Aini Signalling* *Atmlf/n Vpt/m Iisp Signalling* *Atmlf/n Vpt/m Uni Signalling* *Atmlf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmAini
Opt. Subcomp.	COMPONENT Atmlf Vpt Aini Sig VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP Atmlf Vpt Aini Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmAini
Values	Decimal (0..65535)
Default	5

ATTRIBUTE Atmlf Vpt Aini Sig addressConversion

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Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmAini
Values	none nativeE164 nsap
Default	none

ATTRIBUTE Atmlf Vpt Aini Sig **operatingMode**

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmAini
Values	normal provisionedOnly
Default	normal

GROUP Atmlf Vpt Aini Sig **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Sig **adminState (osiAdmin)**

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmAini
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE **Atmlf Vpt Aini Sig** **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmAini
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE **Atmlf Vpt Aini Sig** **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	AtmAini
Values	idle active (activ) busy
Default	idle

GROUP Atmlf Vpt Aini Sig **Operational (Oper)**

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Sig **lastTxCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **lastTxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmAini
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **lastRxCauseCode**

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Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **lastRxDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmAini
Values	Hex (H.0..H.ff)
Default	No default

GROUP Atmlf Vpt Aini Sig **Statistics (Stats)**

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Sig **peakConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **successfulConnections**

Access	Read: All Write: Illegal

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Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **failedConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **txPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **rxPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **currentPmpConnections**

Access	Read: All Write: Illegal

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Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **peakPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **successfulPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **failedPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Sig **currentConnections**

Access	Read: All Write: Illegal

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Description	This attribute indicates the total number of currently active point-to-point connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Vpt Aini Sig **VirtualChannelDescriptor (Vcd)**

Groups	GROUP AtmIf Vpt Aini Sig Vcd Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmAini
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Aini Sig Vcd **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Sig Vcd **trafficDescType (tdt)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the

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ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib: AtmAini

Values:
3
6
7
8

Default: 6

Flags: HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Aini Sig Vcd **atmServiceCategory (service)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the ATM service category for both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are

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made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib AtmAini

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)

Default rtVariableBitRate

Flags HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Aini Sig Vcd **weight**

Access Read and write

Criticality Component

Description This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These
attributes can be found under the atmif/n ca <atmServiceCategory>/ m.

This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs.

When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***.

When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT.

When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

Mib AtmAini

Values
Decimal (1..4095)
sameAsCa
upToQueueLimit

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Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Aini Sig Vcd **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmAini
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Aini Sig Vcd **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

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When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib	AtmAini
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Aini Sig Vcd **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*. When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmAini
Values	common sameAsCa
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Vpt Aini Sig Vcd **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has

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UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component.

When ***disabled*** is selected, UPC for this connection is disabled.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmAini

Values: disabled
sameAsCa

Default: disabled

Flags: HCA_SUPPORT

ATTRIBUTE **Atmlf Vpt Aini Sig Vcd trafficDescParm (tdp)**

Access: Read: All
Write: All

Criticality: Component

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP

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equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

COMPONENT Atmlf Vpt Aini Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate default]
Groups	GROUP AtmIf Vpt Aini Addr Operational (Oper)
Scope	Device

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Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type* *AtmIf/n Pnni Address/address,type* *AtmIf/n Vpt/m Aini Address/address,type* *AtmIf/n Vpt/m Iisp Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* *AtmIf/n Vpt/m Pnni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard ('?'), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address. The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of type ***default***. The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm. The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed. If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.
Mib	AtmAini
Opt. Subcomp.	COMPONENT AtmIf Vpt Aini Addr TerminateSPvpAndSPvc (TermSP) COMPONENT AtmIf Vpt Aini Addr PnniInfo
Common Verbs	Help List Display Add DELete

GROUP Atmif Vpt Aini Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmAini

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ATTRIBUTE Atmlf Vpt Aini Addr **scope**

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.
Mib	AtmAini
Values	Signed (-1..104)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Addr **reachability (reach)**

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmAini
Values	internal exterior
Default	No default

COMPONENT Atmlf Vpt Aini Addr **TerminateSPvpAndSPvc (TermSP)**

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc* The presence of this subcomponent indicates that SPvp and SPvc call

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setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib AtmAini

Common Verbs
Help
List
Display
Add
DELete

COMPONENT Atmlf Vpt Aini Addr PnniInfo

Groups GROUP Atmlf Vpt Aini Addr PnniInfo Provisioned (Prov)

Scope Device

Description

Atmlf/n Aini Addr/address,type PnniInfo
Atmlf/n Iisp Addr/address,type PnniInfo
Atmlf/n Uni Addr/address,type PnniInfo
Atmlf/n Pnni Addr/address,type PnniInfo
Atmlf/n Vpt/m Aini Addr/address,type PnniInfo
Atmlf/n Vpt/m Iisp Addr/address,type PnniInfo
Atmlf/n Vpt/m Uni Addr/address,type PnniInfo
Atmlf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.

Mib AtmAini

Common Verbs
Help
List
Display
Add
DELete

GROUP Atmlf Vpt Aini Addr PnniInfo Provisioned (Prov)

Properties Provisioned

Description This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.

Mib AtmAini

ATTRIBUTE Atmlf Vpt Aini Addr PnniInfo scope

Access
Read: All
Write: All

Criticality Component

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Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmAini
Values	Signed (-1..104)
Default	-1

ATTRIBUTE **AtmIf Vpt Aini Addr PnniInfo** **reachability (reach)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmAini
Values	internal exterior
Default	internal

COMPONENT **AtmIf Vpt Aini** **CallingAddressScreening (CallingAScr)**

Groups	GROUP AtmIf Vpt Aini CallingAScr Provisioned (Prov) GROUP AtmIf Vpt Aini CallingAScr Statistics (Stat)
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n Iisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not

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provisioned, all call requests are accepted and no calling address screening takes place.

Mib AtmAini

Opt. Subcomp. COMPONENT AtmIf Vpt Aini CallingAScr Address (Addr)

Common Verbs
Help
List
Display
Add
DELete

GROUP AtmIf Vpt Aini CallingAScr Provisioned (Prov)

Properties Provisioned

Description This attribute group contains the provisionable attributes for the *CallingAScr* component.

Mib AtmAini

ATTRIBUTE AtmIf Vpt Aini CallingAScr adminStatus

Access
Read: All
Write: All

Description This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***.

If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected

If the value is ***disabled***, no calling address screening is performed.

Mib AtmAini

Values
enabled
disabled

Default disabled

ATTRIBUTE AtmIf Vpt Aini CallingAScr defaultInsertionAddress (defInsAddr)

Access
Read: All
Write: All

Description This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this

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attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.

Mib	AtmAini
Values	String (0..20, Hex)
Default	""

GROUP Atmlf Vpt Aini CallingAScr **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini CallingAScr **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpt Aini CallingAScr **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpt Aini CallingAScr **unmatchedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.

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Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Aini CallingAScr **Address (Addr)**

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	AtmAini
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Vpt Aini **CalledAddressScreening (CalledAScr)**

Groups	GROUP AtmIf Vpt Aini CalledAScr Provisioned (Prov) GROUP AtmIf Vpt Aini CalledAScr Statistics (Stat)
Scope	Device
Description	*AtmIf/n Aini CalledAddressScreening* *AtmIf/n Uni CalledAddressScreening* *AtmIf/n Iisp CalledAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to

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specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.

Mib	AtmAini
Opt. Subcomp.	COMPONENT AtmIf Vpt Aini CalledAScr Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Aini CalledAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CalledAScr* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini CalledAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***. If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected. If the value is ***disabled***, no called address screening is performed.
Mib	AtmAini
Values	enabled disabled
Default	disabled

GROUP AtmIf Vpt Aini CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini CalledAScr acceptedCalls

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Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf Vpt Aini CalledAScr** **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf Vpt Aini CalledAScr** **unmatchedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

COMPONENT **AtmIf Vpt Aini CalledAScr** **Address (Addr)**

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action*

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AtmIf/n Uni CalledAScr Address/addr,action
AtmIf/n Iisp CalledAScr Address/addr,action
This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address.
For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected.
For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.
For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib — AtmAini

Common Verbs
Help
List
Display
Add
DELete

COMPONENT Atmlf Vpt Aini PathTraceFilter (Ptf)

Groups
GROUP Atmlf Vpt Aini Ptf Criteria
GROUP Atmlf Vpt Aini Ptf Operational (Oper)
GROUP Atmlf Vpt Aini Ptf RecordControl (Record)

Scope — Device

Description

AtmIf/n Aini PathTraceFilter
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter
AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop,* and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When

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AtmPathTraceFilter component is deleted, all records are cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib: AtmAini

Dyn. Subcomp.: COMPONENT AtmIf Vpt Aini Ptf PathTraceRecord (PTRecord)

Common Verbs:
Help
List
Display
Add
DELete

VERB START **AtmIf Vpt Aini Ptf**

Impact: Service

Description:
START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP **AtmIf Vpt Aini Ptf**

Impact: Service

Description:
STOP AtmIf/n Aini PathTraceFilter
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

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VERB CLEAR **AtmIf Vpt Aini Ptf**

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP **AtmIf Vpt Aini Ptf** **Criteria**

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE **AtmIf Vpt Aini Ptf** **traceInfo (tInfo)**

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmAini
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

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ATTRIBUTE Atmlf Vpt Aini Ptf **calledPartyPrefix (cldPref)**

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmAini
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf **callingPartyPrefix (clgPref)**

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmAini
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf **connectionType (type)**

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE Atmlf Vpt Aini Ptf **connectionConfiguration (config)**

Access	Read: All Write: All

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Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE Atmlf Vpt Aini Ptf **serviceCategory (svcCat)**

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP Atmlf Vpt Aini Ptf **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Ptf **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmAini
Values	active inactive

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Default	inactive

ATTRIBUTE Atmlf Vpt Aini Ptf **recordCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	AtmAini
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf **matchedConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmAini
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf **elapsedTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmAini
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf **timeRemaining**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmAini
Values	Decimal (0..70560)

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Units	minutes
Default	No default

GROUP Atmlf Vpt Aini Ptf **RecordControl (Record)**

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Ptf **traceTimeout**

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmAini
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE Atmlf Vpt Aini Ptf **maxTraceRecords (mRecords)**

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmAini
Values	Decimal (1..200)
Default	2

COMPONENT Atmlf Vpt Aini Ptf **PathTraceRecord (PTRecord)**

Groups	GROUP Atmlf Vpt Aini Ptf PTRecord Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord* *Atmlf/n Iisp Ptf PTRecord* *Atmlf/n Uni Ptf PTRecord* *Atmlf/n Pnni Ptf PTRecord* *Atmlf/n Vpt/n Aini Ptf PTRecord* *Atmlf/n Vpt/n Iisp Ptf PTRecord*

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AtmIf/n Vpt/n Uni Ptf PTRecord
AtmIf/n Vpt/n Pnni Ptf PTRecord

This component represents the path trace record for the last failed connection against this filter.

Mib	AtmAini
Dyn. Subcomp.	COMPONENT AtmIf Vpt Aini Ptf PTRecord Hop
Common Verbs	Help List Display

GROUP AtmIf Vpt Aini Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmAini
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.

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Mib	AtmAini
Values	Time (DHMS)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmAini
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmAini
Values	String (40, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord **diagCode**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmAini
Values	String (0..8, ASCII)
Default	No default

COMPONENT Atmlf Vpt Aini Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	GROUP AtmIf Vpt Aini Ptf PTRecord Hop Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmAini
Dyn. Subcomp.	COMPONENT AtmIf Vpt Aini Ptf PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP Atmlf Vpt Aini Ptf PTRecord Hop Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **ingressVpiVci (vpiVci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value

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Mib	AtmAini
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmAini
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	String (12, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **portId**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop **portName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback

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	Received at Trace Destination Node" indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the "PNNI Crankback Gap" indicator is present. The "PNNI Crankback Gap" indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmAini
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component

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Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmAini
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE **AtmIf Vpt Aini Ptf PTRecord Hop** **blockedNodeId (bNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpt Aini Ptf PTRecord Hop** **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Vpt Aini Ptf PTRecord Hop** **blockedLinkPortId (bPortId)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **blockedLinkSucceedingNodeId (sNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop **dstVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)

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Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmAini
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmAini

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Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	no yes
Default	no

COMPONENT AtmIf Vpt Aini Ptf PTRecord Hop **VendorSpecificInfo (Vsi)**

Instance	Decimal (0..10)
Groups	GROUP AtmIf Vpt Aini Ptf PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

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	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmAini
Common Verbs	Help List Display

GROUP Atmlf Vpt Aini Ptf PTRecord Hop Vsi **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop Vsi **length**

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmAini
Values	Decimal (0..11)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop Vsi **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmAini
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptf PTRecord Hop Vsi **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmAini
Values	String (1..8, Hex)
Default	No default

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COMPONENT Atmlf Vpt Aini PathTraceTestConnection (Ptt)

Groups: GROUP AtmIf Vpt Aini Ptt Operational (Oper)

Scope: Device

Description:

AtmIf/n Aini PathTraceTestConnection
AtmIf/n Iisp PathTraceTestConnection
AtmIf/n Uni PathTraceTestConnection
AtmIf/n Pnni PathTraceTestConnection
AtmIf/n Vpt/vpi Aini PathTraceTestConnection
AtmIf/n Vpt/vpi Iisp PathTraceTestConnection
AtmIf/n Vpt/vpi Uni PathTraceTestConnection
AtmIf/n Vpt/vpi Pnni PathTraceTestConnection

This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface.

The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.

Mib: AtmAini

Common Verbs:
- Help
- List
- Display

VERB TRACE Atmlf Vpt Aini Ptt

Impact: Passive

Description:

TRACE AtmIf/n Aini AtmPathTraceTest
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf Vpt Aini Ptt Operational (Oper)

Properties: Operational

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Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Ptt **traceCrankback**

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmAini
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Aini Ptt **txTrafficDescType (txTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmAini
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE Atmlf Vpt Aini Ptt **rxTrafficDescType (rxTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute

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When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.

Mib: AtmAini

Values:
1
2
3
4
5
6
7
8
9
sameAsTx

Default: sameAsTx

ATTRIBUTE **Atmlf Vpt Aini Ptt** **atmServiceCategory (service)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

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The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib: AtmAini

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default: unspecifiedBitRate

ATTRIBUTE Atmlf Vpt Aini Ptt **fwdQosClass (fwdQos)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the forward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmAini

Values:
0
1
2
3
4

Default: 0

ATTRIBUTE Atmlf Vpt Aini Ptt **bwdQosClass (bwdQos)**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmAini
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE **Atmlf Vpt Aini Ptt** **bearerClassBbc (bcBbc)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

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Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib	AtmAini
Values	a c x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Aini Ptt **transferCapabilityBbc (tcBbc)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. UNI 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> ***0***: NoIndication, NoIndication ***1***: NoIndication, yes ***2***: NoIndication, no ***5***: CBR, yes ***8***: VBR, NoIndication ***9***: VBR, yes ***10***: VBR, no ***NotApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

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The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmAini

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Aini Ptt **clippingBbc (cBbc)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

Mib: AtmAini

Values:
no
yes

Default: no

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ATTRIBUTE Atmlf Vpt Aini Ptt **bestEffort**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmAini
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Aini Ptt **testCalledAddress**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmAini
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptt **testCalledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmAini

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Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptt **testSpecifiedPath**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmAini
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Ptt **bwdQosParameters (bqp)**

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE Atmlf Vpt Aini Ptt **fwdQosParameters (fqp)**

Access	Read and write

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Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE Atmlf Vpt Aini Ptt **txTrafficDescParm (txTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

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When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter

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3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **Atmlf Vpt Aini Ptt** **rxTrafficDescParm (rxTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must

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be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or

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I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT **AtmIf Vpt Aini** **ServiceTrace (SrvTrace)**

Groups	GROUP AtmIf Vpt Aini SrvTrace Operational
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmAiniTrace
Common Verbs	Help List Display Add DELete

VERB Start **AtmIf Vpt Aini SrvTrace**

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

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VERB Stop **AtmIf Vpt Aini SrvTrace**

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP **AtmIf Vpt Aini SrvTrace** **Operational**

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmAiniTrace

ATTRIBUTE **AtmIf Vpt Aini SrvTrace** **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmAiniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE **AtmIf Vpt Aini SrvTrace** **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmAiniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE **AtmIf Vpt Aini SrvTrace** **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.

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Mib	AtmAiniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE **AtmIf Vpt Aini SrvTrace** **session**

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmAiniTrace
Values	The name of the component
Default	No default

COMPONENT **AtmIf Vpt Aini** **Reroute**

Groups	GROUP AtmIf Vpt Aini Reroute LocalOperational (LOper) GROUP AtmIf Vpt Aini Reroute GlobalOperational (GOper) GROUP AtmIf Vpt Aini Reroute Statistics (Stats)
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmAini
Subcomponents	COMPONENT AtmIf Vpt Aini Reroute Ov
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE Atmlf Vpt Aini Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Uni Reroute* *Optimize [-all] AtmIf/n Aini Reroute* *Optimize [-all] AtmIf/n Iisp Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Uni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Aini Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Iisp Reroute* This command triggers path optimization for the connection segments managed by the Reroute component. By default, only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection. The -all option causes all connection segments subscribed to path optimization to be considered. Using the Optimize command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP Atmlf Vpt Aini Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute localEligibleRecoveredCon (lerc)

Access	Read only

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Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **localIneligibleRecoveredCon (lirc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **localLastRrCauseCode (lrrcc)**

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **localPathsOptimized (lPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Aini Reroute **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmAini

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ATTRIBUTE Atmlf Vpt Aini Reroute **globalSubscribedConnections (gsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **globalEligibleRecoveredCon (gerc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **globalIneligibleRecoveredCon (girc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **globalLastRrCauseCode (grrcc)**

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **globalPathsOptimized (gPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface.

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	Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Aini Reroute **Statistics (Stats)**

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Reroute **totalLocalConnectionRecoveries (tLConRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **totalLocalFailedRecoveries (lFailedRec)**

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **totalLocalPathOptimizations (tLPathOpt)**

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **totalGlobalConnectionRecoveries (tGConRec)**

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Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **totalGlobalFailedRecoveries (gFailedRec)**

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **totalGlobalPathOptimizations (tGPathOpt)**

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Aini Reroute **totalOptimizationPasses (optPass)**

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Vpt Aini Reroute **Ov**

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Groups	GROUP AtmIf Vpt Aini Reroute Ov Provisioned (Prov) GROUP AtmIf Vpt Aini Reroute Ov LocalProvisioned (LProv) GROUP AtmIf Vpt Aini Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmAini
Common Verbs	Help List Display

GROUP AtmIf Vpt Aini Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.

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localEbr: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmAini

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Atmlf Vpt Aini Reroute Ov **numOptAttempts**

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmAini

Values:
Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default: sameAs

ATTRIBUTE Atmlf Vpt Aini Reroute Ov **moduleOptimizationConnections**

Access: Read and write

Description: This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni*

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Reroute component.

One of the following values can be specified:
sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: AtmAini

Values:
none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Atmlf Vpt Aini Reroute Ov **switchoverMechanism**

Access: Read and write

Description: This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmAini

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP Atmlf Vpt Aini Reroute Ov **LocalProvisioned (LProv)**

Properties: Provisioned

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Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Reroute Ov **localConnectionRecoverySubscr (lConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute:*** If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values. ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.
Mib	AtmAini
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Vpt Aini Reroute Ov **localPathOptimizationSubscr (lPathOpt)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

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Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib	AtmAini
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

GROUP Atmlf Vpt Aini Reroute Ov **GlobalProvisioned (GProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	AtmAini

ATTRIBUTE Atmlf Vpt Aini Reroute Ov **globalConnectionRecoverySubscr (gConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

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One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib — AtmAini

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Vpt Aini Reroute Ov **globalPathOptimizationSubscr (gPathOpt)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.

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transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib — AtmAini

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

COMPONENT Atmlf Vpt VirtualChannelConnection (Vcc)

Instance — Decimal (0..65535)

Groups — GROUP AtmIf Vpt Vcc OsiState (State)
GROUP AtmIf Vpt Vcc Operational (Oper)
GROUP AtmIf Vpt Vcc ConnectionInfo (ConnInfo)
GROUP AtmIf Vpt Vcc Status
GROUP AtmIf Vpt Vcc Statistics (Stats)
GROUP AtmIf Vpt Vcc Performance (Perf)

Scope — Device

Description — *AtmIf/n Vpt/vpi VirtualChannelConnection/vci*
This component represents a virtual channel connection terminated by a *Virtual Path Terminator (VPT)*.

For *Vccs* beneath *Vpts*, the instance value defines the VCI value for this connection—for example, Vpt/16 Vcc/32 would define a connection with a VPI of 16, and a VCI of 32. The VPI value of the *Vcc* is inherited from the parent *Vpt*.

The VPI can be in the range of 0 to 4095 and the VCI can be in the range

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of 0 to 65535. Note that a *Vcc* instance of 0.0 is invalid as defined in the ATM Forum. Thus, the combination of *Vpt/0 Vcc/0* is also invalid.

Mib	AtmCore
Subcomponents	COMPONENT AtmIf Vpt Vcc VirtualChannelDescriptor (Vcd)
Opt. Subcomp.	COMPONENT AtmIf Vpt Vcc Loop (Loop) COMPONENT AtmIf Vpt Vcc NailedUpRelayPoint (Nrp) COMPONENT AtmIf Vpt Vcc NailedUpEndPoint (Nep) COMPONENT AtmIf Vpt Vcc Test (Test) COMPONENT AtmIf Vpt Vcc SourcePvc (Src) COMPONENT AtmIf Vpt Vcc MulticastNailedUpRelayPoint (Mnrp)
Dyn. Subcomp.	COMPONENT AtmIf Vpt Vcc TrafficManagement (Tm) COMPONENT AtmIf Vpt Vcc EndPoint (Ep) COMPONENT AtmIf Vpt Vcc RelayPoint (Rp) COMPONENT AtmIf Vpt Vcc PerformanceMonitoring (Pm) COMPONENT AtmIf Vpt Vcc PathTraceRecord (PTRecord) COMPONENT AtmIf Vpt Vcc RerouteInfo (RerInfo)
Dyn. Subcomp.	COMPONENT AtmIf Vpt Vcc DestinationPvc (Dst)
Common Verbs	Help List Display Add DELete

VERB TRACE **AtmIf Vpt Vcc**

Impact	Service
Description	*TRACE AtmIf/n Vpt/vpi Vcc/vci* *TRACE -s -v -a -e AtmIf/n Vpt/vpi Vcc/vci* *TRACE -p AtmIf/n Vpt/vpi Vcc/vci* This command traces the path of an intra-network segment of a connection. It displays the names of interface and connection components along this segment of a connection. The Trace response for a *Vcc* does not show any hops of a connection which are conveyed on a path connection (VPC). In this case the Trace command only shows the *Vcc* hop points. Note however, that if the connection traverses a *Vcc* which resides beneath a *Vpt*, the *Vpt/vpi Vcc/vci* hierarchy is displayed in the trace results. The option for the OAM trace is as follows: *-p*: Selects the Nortel Networks proprietary OAM Connection Management Trace instead of the proprietary OAM Legacy Loopback Trace. If no options are provided, the default configuration uses the Legacy Loopback Trace.

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The options for the signaling trace are as follows:

-s: Selects the PNNI signaling call trace instead of the Nortel Networks proprietary OAM-based trace procedure. Option *-s* must be present if any one of options *-v, -a,* and *-e* are present. Otherwise, it defaults to the OAM-based trace.

-v: Requests that the VPI.VCI values be collected along the trace. This option is only valid when the *-s* option is present.

-a: Requests that the call reference/end point reference values be collected along the trace. This option is only valid when the *-s* option is present.

-e: Used on point-to-multipoint connections to specify the end point reference value indicating which party to trace. If no *-e* option is used for a point-to-multipoint connection, the default traces the path with endpoint reference 0, which is the first party. This option is only valid when the *-s* option is present.

Only one connection trace is supported at a time. An error message is returned if a response from the network is not received within 30 seconds.

If the verb is issued with the *-s* option for the *Vpt/vpi Vcc/vci* values that are not active or were not created by signaling (for example, control channels), the command is refused

VERB CLEAR **Atmlf Vpt Vcc**

Impact	Service
Description	*CLEAR AtmIf/n Vpt/vpi Vcc/vci* This command is used to clear a switched connection which is under a *Vpt*.

GROUP **Atmlf Vpt Vcc** **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmCore

ATTRIBUTE **Atmlf Vpt Vcc** **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmCore
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Atmlf Vpt Vcc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmCore
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Atmlf Vpt Vcc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — AtmCore

Values — idle
active (activ)
busy

Default — idle

GROUP Atmlf Vpt Vcc **Operational (Oper)**

Properties — Operational

Description — This group contains operational information for a *Vcc, Vpc,* or *Vpt* component.

Mib — AtmCore

ATTRIBUTE Atmlf Vpt Vcc **connectionPointType (cpt)**

Access — Read only

Description — This attribute reflects the role of the connection component at this interface.

A value of ***connectionEndPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are processed by the connection component.

A value of ***segmentEndPoint*** indicates that user cells and end-to-end OAM cells are relayed by the connection component, while segment OAM cells are processed by the connection component.

A value of ***connectingPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are relayed by the connection component.

A value of ***unknown*** indicates that the connection component is inactive.

Mib — AtmCore

Values — connectionEndPoint
segmentEndPoint
connectingPoint
unknown

Default — No default

GROUP Atmlf Vpt Vcc **ConnectionInfo (ConnInfo)**

Properties — Operational

Description — This group contains operational connection characteristics information for a *Vcc* component.

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Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc distributionType (distrbt)

Access	Read only
Description	This attribute indicates the way data is distributed in the connection. A value of ***pointToPoint*** indicates this connection point is part of a point-to-point connection. A value of ***pointToMultipoint*** indicates this connection point is part of a point-to-multipoint connection.
Mib	AtmCore
Values	pointToPoint pointToMultipoint
Default	pointToPoint

ATTRIBUTE Atmlf Vpt Vcc numLeaves (nlvs)

Access	Read only
Description	This attribute indicates the number of destination leaves of the connection. If the *distributionType* is ***pointToPoint*** the value of this attribute is 0.
Mib	AtmCore
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE Atmlf Vpt Vcc callDirection (cdir)

Access	Read only
Description	This attribute indicates the direction of the call setup request for an SVC. A value of ***fromLink*** means that the call setup originated from the link. A value of ***toLink*** means that the call setup was directed to the link. For PVC connections, the value of this attribute is ***notApplicable.*** For SPVC connections, the value of this attribute is ***notApplicable*** for *Vccs* with the *SourcePVC* and *DestinationPVC* subcomponents. For Signaling channels, the value of this attribute is ***notApplicable***.
Mib	AtmCore
Values	fromLink toLink notApplicable

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Default	notApplicable

GROUP Atmlf Vpt Vcc Status

Properties	Operational
Description	This group contains operational status information for a *Vcc, Vpc* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc operStatus (opStat)

Access	Read only
Description	This attribute indicates the present operational status of the *Vcc, Vpc* or *Vpt* component. Its value is dependent upon the current state of the *segLinkSideLoopbackState* and *endToEndLoopbackState* attributes. The value is ***end2endUp*** when the *endToEndLoopbackState* is ***good*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***end2endDown*** when the *endToEndLoopbackState* is ***bad*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***unknown*** and the *segLinkSideLoopbackState* is ***good***. The value is ***localDown*** when *segLinkSideLoopbackState* is ***bad***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***notApplicable*** and the *segLinkSideLoopbackState* is ***good***. The value is ***unknown*** when the *endToEndLoopbackState* is either ***unknown*** or ***notApplicable*** and the *segLinkSideLoopbackState* is ***unknown***.
Mib	AtmCore
Values	unknown end2endUp end2endDown localUpEnd2endUnknown localDown
Default	No default

ATTRIBUTE Atmlf Vpt Vcc localFailureCause

Access	Read only

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Description	This attribute indicates the failure cause of the *Vcc, Vpc* or *Vpt* component. A value of ***noFailure*** indicates that there is currently no bandwidth related failure for this connection. A value of ***portDown*** indicates that the interface corresponding to the parent *AtmIf* is down. A value of ***localBwLoss*** indicates that the *AtmIf* has lost some, but not all bandwidth, and as a result, this connection has been released. A value of ***notAdmitted*** indicates that this connection has failed to be admitted by the Connection Admission Control (CAC) algorithm. A value of ***appNotRegistered*** indicates that there is no application registered to use this connection. This may be the case, for example when there is a *Vcc Test* application, but the test has not been started. Check the status of the application to determine why it is not functional. A value of ***disabledByApp*** indicates that the application using this connection has requested that the connection be disabled. An example is a connection used by a trunk application where the trunk has timed out on an attempt to stage. Check the application to determine why it is not fully functional. A value of ***bwReduced*** indicates that this connection is operating in a reduced bandwidth state. It is a bandwidth elastic connection which currently has been allocated less than the requested (equivalent) bandwidth. A value of ***vpDown*** indicates that this connection has been notified of a fault detected at the associated VP-layer. A value of ***vpDown*** is applicable for *Vpt Vcc*s only.
Mib	AtmCore
Values	noFailure localBwLoss portDown notAdmitted appNotRegistered disabledByApp bwReduced vpDown
Default	No default

ATTRIBUTE **Atmlf Vpt Vcc** **troubled**

Access	Read only
Description	This attribute indicates whether or not the connection is in a troubled state. Connections become troubled because of OAM failures; when one of the attributes *segLinkSideLoopbackState*, *segSwitchSideLoopbackState*,

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endToEndLoopbackState, *aisState* (when receiving AIS cells only) or *rdiState* go bad, this attribute is set to ***yes***; otherwise it is set to ***no***.

Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Vcc **segLinkSideLoopbackState (segLkLbkState)**

Access	Read only
Description	This attribute contains the current state of the link-side segment loopback for this connection. Link-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the link (port). The value of this attribute is dependent upon the current setting of the *segLinkSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the segment link side loopback is working. The value is ***bad*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the link side segment loopback is not working. The value is ***unknown*** when the *segLinkSideLoopback* is ***off***. The value is ***unknown*** when the value of the *segLinkSideLoopback* attribute is ***on***, the *connectionPointType* attribute is set to ***segmentEndPoint*** or ***connectionEndPoint***, and the segment link side loopback has not yet been determined. The state of this attribute determines, in part, the value of the *operStatus* attribute.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

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ATTRIBUTE Atmlf Vpt Vcc **segSwitchSideLoopbackState (segSwLbkState)**

Access	Read only
Description	This attribute contains the current state of the switch-side segment loopback for this connection. Switch-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the bus. The value of this attribute is dependent upon the current setting of the *segSwitchSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is only applicable when the *connectionPointType* is a ***segmentEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or ***connectionEndPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback is working. The value is ***bad*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the switch side segment loopback is not working. The value is ***unknown*** when the *segSwitchSideLoopback* is ***off***. The value is ***unknown*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback has not been determined.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Vcc **endToEndLoopbackState (eeLbkState)**

Access	Read only
Description	This attribute contains the current state of the end-to-end loopback for this connection. Its value is dependent upon the current setting of the *endToEndLoopback* provisionable attribute and the connection point type as specified by the *connectionPointType* attribute.

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The value is only applicable when the *connectionPointType* is a ***connectionEndPoint***.

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or s***egmentEndPoint***.

The value is ***notApplicable*** when the *distributionType* is a ***pointToMultipoint***.

The value is ***good*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is working.

The value is ***bad*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is not working.

The value is ***unknown*** when the *endToEndLoopback* is ***off***.

The value is ***unknown*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback status has not been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute.

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Vcc rxOamCellCongestionState (rxOamCongState)

Access	Read only
Description	This attribute contains the current state of the receive side OAM cell congestion for this connection. Its value reflects whether the rate of received OAM cells for this connection is below a specified threshold. The connection maintains a count of the number of OAM cells which are terminated per second. Once that count exceeds the specified threshold, extraction of all OAM cells for this connection is disabled for a period of one minute. This is a congestion management mechanism to prevent the processor from being overloaded with handling OAM cells for a particular connection. This mechanism ensures that tasks, such as trunks obtain enough processor cycles to remain in service, and are not adversely affected by excessive rate of OAM cells on a particular connection. The value is ***good*** when the rate of received OAM cells is less than the allowed threshold.

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The value is ***bad*** when the arrival rate has exceeded the allowed threshold. It remains ***bad*** for one minute, before returning to ***good*** again. During this timeout, extraction of all OAM cells is disabled for this connection. As a result, other loopback failure conditions may occur.

The value is ***unknown*** when the application has not yet begun to use this connection. An example is the *Test* component before a test has been started.

Each type of OAM cell is counted separately. The threshold for AIS cells is three cells per second. If more than three AIS cells are received within a one second interval, this attribute is set to ***bad***. The threshold for RDI cells and each loopback type is also three, but the threshold for trace cells is 250 per second.

The state of this attribute has no direct effect on the value of the *operStatus* attribute or on the number of troubled connections.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

Default: No default

ATTRIBUTE Atmlf Vpt Vcc **aisState**

Access: Read only

Description: This attribute contains the current state of the Alarm Indication Signal for this connection.

A value of ***good*** indicates that the connection's application is active and no alarm has occurred.

A value of ***bad*** indicates that the connection's application is active and an alarm has occurred.

A value of ***unknown*** indicates that the connection's application is inactive.

A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

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Default	No default

ATTRIBUTE Atmlf Vpt Vcc **rdiState**

Access	Read only
Description	This attribute indicates the current state of the Remote Defect Indication for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

GROUP Atmlf Vpt Vcc **Statistics (Stats)**

Properties	Operational
Description	This group contains traffic statistics for a *Vcc*, *Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc **txCell**

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection. The counter wraps to zero if it exceeds its maximum value of (2**64)-1. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this attribute does not include locally generated AIS cells. Specifically AIS cells generated on the destination side of a SPVC or SPVP will not be included in this attribute, nor will AIS cells generated on the link side of a PVC or PVP.
Mib	AtmCore
Values	Long Integer

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Default	No default

ATTRIBUTE Atmlf Vpt Vcc txCellClp (txClp)

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection with the CLP=1. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc txCellDiscard (txcd)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection that have been discarded. Discarded cells are not counted in the *txCell* attribute. Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscard* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc txCellDiscardClp (txcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection with CLP=1 that have been discarded.

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For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count is included in the *txCellDiscard* attribute. Discarded cells are not counted in the *txCellClp* attribute.

Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscardClp* values for all connections associated with the *Vpt*.

When both ingress and egress of a port is down, txcells are silently discarded.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE **AtmIf Vpt Vcc** **txFrameDiscard (txfd)**

Access	Read only
Description	This attribute counts the number of frames received from the backplane on this connection that have been discarded.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtmcards***, this attribute does not count frames discarded due to congestion at the main traffic management device toward the link.

This count is independent of the *txCell* or *txCellDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is

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applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscard* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscard* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc txFrameDiscardClp (txfdClp)

Access	Read only
Description	This attribute counts the number of discarded frames on this connection that were received from the backplane and composed of one or more CLP=1 cells. Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtmcards***, this attribute does not count frames discarded due to congestion at the main traffic management device toward the link. This count is included in the *txFrameDiscard* attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscardClp* values for all connections associated with the *Vpt*. Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscardClp* attribute.

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The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc **rxCell**

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells that have been discarded by the interface due to non-conformance with UPC. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down. For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when the PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down and is increased when either the SPVC or SPVP connection is down. For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted. For ***16pOC3PosAtm*** card, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

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ATTRIBUTE Atmlf Vpt Vcc **rxCellClp (rxClp)**

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection with the CLP=1. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc **rxCellDiscard (rxcd)**

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection that have been discarded. This count is included in the *rxCell* attribute. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells discarded due to non-conformance with UPC. For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscard* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscard* attribute. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic

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is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down, regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or only F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE Atmlf Vpt Vcc rxCellDiscardClp (rxcdClp)

Access — Read only

Description — This attribute counts the number of cells received from the interface on this connection with CLP=1 that have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes.

This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is

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not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscardClp* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE **AtmIf Vpt Vcc** **rxFrameDiscard (rxfd)**

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have been discarded. This count is independent of the *rxCellDiscard* attribute. This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute does not count frames discarded due to UPC. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscard* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

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ATTRIBUTE Atmlf Vpt Vcc **rxFrameDiscardClp (rxfdClp)**

Access	Read only
Description	This attribute counts the number of discarded frames on this connection that were received from the interface and composed of one or more CLP1 cells. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscard* attribute. This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute does not count frames discarded due to UPC. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscardClp* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc **rxUpcViolationOnEnforcer1 (rxEnforcer1)**

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored on the connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed. When the value of the *rxTrafficDescType* attribute for this connection is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections) Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1. When the value of the *rxTrafficDescType* attribute for this connection is 9

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(for ABR connections), Enforcer 1 performs the Dynamic Generic Cell Rate Algorithm (DGCRA) used for the Available Bit Rate (ABR) service category.

If UPC is enforced all non-conforming cells are discarded by this enforcer. These discarded cells are included in the *rxCellDiscard* attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer1* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE **Atmlf Vpt Vcc** **rxUpcViolationOnEnforcer2 (rxEnforcer2)**

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored on the connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed. This attribute is only applicable if the value of the *rxTrafficDescType* attribute for this connection is 4, 5, 6, 7, or 8. When the value of the *rxTrafficDescType* attribute is 4, or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0. When the value of the *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1. When the value of the *rxTrafficDescType* attribute is 7, or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0. If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* values of 4, 6, and 7. It tags non-conforming cells for *rxTrafficDescType* values of 5, and 8. Discarded cells are counted in the rxCellDiscard attribute. For basic *Vpt*s, this attribute provides an aggregated total of all

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rxUpcViolationOnEnforcer2 values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc rxAal5FrameError (rxfer)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have AAL5 length errors or AAL5 CRC errors. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed. AAL5 length or CRC errors typically occur because of cell discards due to congestion, UPC, or due to corruption of data between the AAL5 segmentation and reassembly end points. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameError* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc rxAal5FrameAbort (rxfa)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have the AAL5 length field set to zero. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

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An AAL5 length of zero is an indication by the far end segmentation point, to this reassembly point, that the frame is to be discarded without reassembly. This mechanism is typically used by a segmentation point if it detects an error in a frame after some of the cells belonging to that frame have already been transmitted.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameAbort* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

GROUP Atmlf Vpt Vcc Performance (Perf)

Properties	Operational
Description	This group contains operational attributes which keep performance statistics about the behavior of the connection.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc lastMinimumCtd (lastminctd)

Access	Read only
Description	This attribute indicates the minimum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working.

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The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.

Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpt Vcc **lastMaximumCtd (lastmaxctd)**

Access	Read only
Description	This attribute indicates the maximum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpt Vcc **lastAverageCtd (lastavectd)**

Access	Read only
Description	This attribute indicates the average of all calculated cell transfer delay values for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the

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	measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE **AtmIf Vpt Vcc** **currentCtd (currctd)**

Access	Read only
Description	This attribute indicates the most recent cell transfer delay value calculated for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

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ATTRIBUTE Atmlf Vpt Vcc lastCtdSampleSize (lastsamplectd)

Access	Read only
Description	This attribute indicates the number of loopback cells sampled for cell transfer delay calculations during the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval of TODA is disabled.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

COMPONENT Atmlf Vpt Vcc VirtualChannelDescriptor (Vcd)

Groups	GROUP Atmlf Vpt Vcc Vcd Loopback (Lbk) GROUP Atmlf Vpt Vcc Vcd Accounting (Acct)
Scope	Device
Description	*Atmlf/n Vcc/vpi.vci VirtualChannelDescriptor,* *Atmlf/n Vpt/vpi Vcc/vci VirtualChannelDescriptor* The *Vcd* component contains provisioning information about its parent *Vcc* component.
Mib	AtmCore
Subcomponents	COMPONENT Atmlf Vpt Vcc Vcd TrafficManagement (Tm)
Opt. Subcomp.	COMPONENT Atmlf Vpt Vcc Vcd PerformanceMonitoring (Pm)
Common Verbs	Help List Display

GROUP Atmlf Vpt Vcc Vcd Loopback (Lbk)

Properties	Provisioned
Description	This group contains the provisionable loopback attributes for a *Vcc, Vpc,* or *Vpt* component. Note that certain loopback requests may not be possible on a given connection. In such cases, the corresponding operational loopback attribute in the *Status* group of the *Vcc, Vpc,* or *Vpt* component indicates ***notApplicable*** and the requested loopback is not performed. If loopbacks are provisioned to be on, and for any reason the segment or end-to-end OAM loopback cells are not relayed, the connection component becomes troubled, and user cell traffic may be discarded. If loopbacks are provisioned to be on, all of the nodes in the segment, and external networks which are in the end-to-end connection must relay the OAM loopback cells.

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Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Vcd **segLinkSideLoopback (segLkLbk)**

Access	Read and write
Description	This attribute specifies whether link-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the link-side segment loopback insertion for the connection is based on the *segLinkSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has link-side segment loopback insertion turned on, then link-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means link-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that link-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***. Link-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *segLinkSideLoopbackState* attribute indicates ***notApplicable*** and link-side segment loopback insertion is not performed. Link-side segment loopback insertion is always possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Vcd **segSwitchSideLoopback (segSwLbk)**

Access	Read and write
Description	This attribute specifies whether switch-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the switch-side segment loopback insertion for the connection is based on the *segSwitchSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has switch-side segment loopback insertion turned on, then switch-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means switch-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

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Note that switch-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint*** or ***connectionEndPoint***. Switch-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint*** In such cases, the operational *segSwitchSideLoopbackState* attribute indicates ***notApplicable*** and switch-side segment loopback insertion is not performed.

Switch-side segment loopback is never possible on a *Vpt*.

Mib — AtmCore

Values
on
off
sameAsInterface

Default — sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Vcd **endToEndLoopback (eeLbk)**

Access — Read and write

Description — This attribute specifies whether end-to-end loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the end-to-end loopback insertion for the connection is based on the *endToEndLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has end-to-end loopback insertion turned on, then end-to-end loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means end-to-end loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that end-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *endToEndLoopbackState* attribute indicates ***notApplicable*** and end-to-end loopback insertion is not performed.

End-to-end loopback insertion is always possible on a *Vpt*.

Mib — AtmCore

Values
on
off
sameAsInterface

Default — sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Vcd **mCastConnectionType (connType)**

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Access	Read and write
Criticality	Component
Description	This attribute specifies if this *Vcc* or *Vpc* is part of point-to-point or point-to-multiPoint connection. A value of ***pointToMultiPointRoot*** must be set when this *Vcc* has an *Msrc* or an *Mnrp* subcomponent, or this *Vpc* has an *Mnrp* subcomponent. A value of ***pointToMultiPointLeaf*** must be set when this *Vcc* or *Vpc* has a *Nrp* subcomponent and its *nextHop* attribute is linked to a *Mnrp* component. Otherwise a value of ***pointToPoint*** must be set.
Mib	AtmCore
Values	pointToPoint (ptp) pointToMultipointRoot (pmpRoot) pointToMultipointLeaf (pmpLeaf)
Default	pointToPoint

GROUP Atmlf Vpt Vcc Vcd **Accounting (Acct)**

Properties	Provisioned
Description	This group contains the provisionable ATM accounting attributes for a *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Vcd **correlationTag (tag)**

Access	Read and write
Description	This attribute specifies a unique identifier for each end of a PVC. It that may be used by downstream processing systems to correlate accounting records issued at different nodes in the network. The attribute can be up to 64 bytes long. If it is less than 64 bytes, it is zero filled on the right to create a 64 byte value. The resulting value is recorded in the attribute *callConnId* for this PVC's ATM accounting records. If the value is a null string then this PVC does not have any accounting records generated for it.
Mib	AtmCore
Values	String (0..64, ASCII)
Default	""

COMPONENT Atmlf Vpt Vcc Vcd **TrafficManagement (Tm)**

Groups	GROUP Atmlf Vpt Vcc Vcd Tm Provisioned (Prov)

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Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd TrafficManagement,* *AtmIf/n Vpc/vci Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci Vcd TrafficManagement* This component contains provisioned traffic management attributes of a connection. It is added automatically when a *Vcc*, *Vpc,* or *Vpt* is added in provisioning mode. It is a mandatory subcomponent of the *Vcd* or *Vpd* component.
Mib	AtmCore
Opt. Subcomp.	COMPONENT AtmIf Vpt Vcc Vcd Tm AvailableBitRate (Abr)
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc Vcd Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains traffic related provisionable attributes for the *Vcc, Vpc,* and *Vpt* components. Changing any of the attributes in this group causes a service interruption on the *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm txTrafficDescType (txTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm fwdQosClass (fwdQos)

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Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmCore
Values	0 1 2 3 4
Default	0

ATTRIBUTE **AtmIf Vpt Vcc Vcd Tm txQueueLimit (txQlim)**

Access	Read and write
Criticality	Component
Description	This attribute specifies an override to the default transmit queue limit for this connection. A value of ***sameAsCa*** means that the default common or per-VC transmit queue limit, as defined by the CA service category, is used for this connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***sameAsCa*** must be specified. A value from 5 to 512,000 means that the connection transmit queue limit differs from the default common or per-VC transmit queue limit, as defined by the CA service category. A value other than ***sameAsCa*** is ignored for connections where common queuing is specified for the service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the per-VC utilization limit of the service category common queue.

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For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from 5 to 512000 inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

On all other cards, the valid range for this attribute is from 5 to 63488 inclusive.

The actual transmit queue limit for a connection is visible in the *Vcc Tm*, *Vpc Tm* or *Vpt txQueueThresholds* attribute.

This attribute is not applicable for basic *Vpt*s.

Mib	AtmCore
Values	Decimal (5..1011840) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE **AtmIf Vpt Vcc Vcd Tm** **holdingPriority (hpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. The default holding priority for a provisioned connection is higher then default holding priorities for dynamic (SVC) connections. The value of this attribute may be overridden by certain applications, for example *Vcc Test*, which use this connection. This attribute is not applicable for *Vpt Vcc*s.
Mib	AtmCore
Values	0 1 2 3 4
Default	2

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ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **rxTrafficDescType (rxTdt)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute. The value ***sameAsTx*** means the *rxTrafficDescType* as well as the *rxTrafficDescParm* attribute values are taken from the values of the *txTrafficDescType* and *txTrafficDescParm* attributes.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **bwdQosClass (bwdQos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

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The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib	AtmCore
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE **AtmIf Vpt Vcc Vcd Tm** **atmServiceCategory (service)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The value ***derivedFromBBC*** may only be used if the *Src* or *Dst* component is provisioned under this connection. Otherwise a specific ATM service category must be specified. A value of ***derivedFromBBC*** means the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. A value other than ***derivedFromBBC*** means the value of this attribute is used to override the provisioned BBC Information Element parameters. In this case, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. The ***rtVariableBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real-time VBR service may support statistical multiplexing of real-time sources. The ***nrtVariableBitRate*** service category is intended for non-real time

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applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non real-time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non real-time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) availableBitRate (abr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE **Atmlf Vpt Vcc Vcd Tm** **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. This attribute is ignored if the *atmServiceCategory* is ***availableBitRate***. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is ignored. A value of ***sameAsCa*** means traffic shaping for the connection is based on the value of the *trafficShaping* attribute of the connection's service category component under the *CA.* If the service category has *trafficShaping* set to ***enabled*** or ***inverseUpc***, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the

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trafficShaping operational attribute, which is under the *Vcc Tm, Vpc Tm,* or *Vpt Tm* components.

A value of ***disabled*** means traffic shaping for this connection is disabled regardless of the provisioning of the connection's service category component.

Mib: AtmCore

Values: disabled
sameAsCa

Default: sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **unshapedTransmitQueueing (unshap)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the transmit queuing method for this connection if it is unshaped. The two possible methods are per-VC queuing and common queuing. This attribute does not apply if the connection is shaped.

A value of ***sameAsCa*** means the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *CA*.

A value of ***common*** means transmit traffic on this unshaped connection is destined for the common queue.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm***, and ***4pMRPosAtm*** cards, this attribute must have the value ***sameAsCa***.

This attribute is ignored in the following situations:
- if the connection has *trafficShaping* ***enabled*** or ***inverseUpc***, or
- if the *atmServiceCategory* is ***availableBitRate***, or
- if the *atmServiceCategory* is ***constantBitRate***, or
- for basic *Vpt*s and standard *Vpt Vcc*s.

Mib: AtmCore

Values: common
sameAsCa

Default: sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **weight**

Access: Read and write

Criticality: Component

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Description	This attribute specifies an override for the weight of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, and basic *Vpt*s. A value of ***sameAsCa*** means the weight is determined by the *weightPolicy* attribute under the *CA* service category component for all but standard *Vpt Vcc*s. For standard *Vpt Vcc*s, the weight is determined by the *Vcc*'s service category, when the value is set to ***sameAsCa***. A value from 1 to 4095 means that value is used for the fairness weight of this connection relative to other connections. For all but standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the *Vpt*. A value of ***upToQueueLimit*** means the fairness weight is limited only by the *txQueueLimit*. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value ***upToQueueLimit*** is not permitted.
Mib	AtmCore
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE **AtmIf Vpt Vcc Vcd Tm** **forceTagging (tagging)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR service category. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, and for *Vpt*s, this attribute is not applicable and is ignored.

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A value of ***sameAsCa*** means the force tagging functionality is determined by the *forceTagging* attribute under the *CA* service category component.

A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection.

A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. In this case, cells which are tagged are counted in the *txCellClp* attribute.

Mib	AtmCore
Values	sameAsCa enabled disabled
Default	sameAsCa

ATTRIBUTE **AtmIf Vpt Vcc Vcd Tm** **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enables usage parameter control (UPC) when receiving traffic from the ATM interface. The value ***sameAsCa*** means UPC for the connection is based on the value of the *usageParameterControl* attribute of the service category component under the *AtmIf CA.* If the service category has UPC ***enforced*** or ***monitored***, then UPC is enabled on the connection. The value ***disabled*** means UPC for this connection is disabled regardless of the provisioning of the service category. The value ***enforced*** means UPC for this connection is enforced regardless of the provisioning of the service category. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. The value ***monitored*** means UPC for this connection is monitored regardless of the provisioning of the service category. When UPC is monitored, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged. Note that setting UPC to ***enforced*** or ***monitored*** may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc, Vpc,*

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and *Vpt* components.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported.

For ***1pOC48ChSmIrAtm*** cards, the values ***enforced***, and ***monitored***, are not supported.

Mib — AtmCore

Values — enforced
disabled
sameAsCa
monitored

Default — sameAsCa

ATTRIBUTE **AtmIf Vpt Vcc Vcd Tm** **bearerClassBbc (bcBbc)**

Access — Read and write

Criticality — Component

Description — This attribute specifies the bearer capability. This attribute is only used for SPVC and SPVP connections. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***) and timing requirements are user defined (that is, transparent to the network).When ***x*** is set the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

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Class **vp** service is used to specify a transparent VP service. When the value of this attribute is vp, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except or VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP connections.

Mib	AtmCore
Values	a c x vp derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE **Atmlf Vpt Vcc Vcd Tm** **transferCapabilityBbc (tcBbc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. Uni 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> 0: NoIndication, NoIndication 1: NoIndication, yes 2: NoIndication, no 5: CBR, yes 8: VBR, NoIndication 9: VBR, yes 10: VBR, no The value ***notApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data. The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing. The value yes for end-to-end timing indicates that end-to-end timing is required. The value no for end-to-end timing indicates that end-to-end timing is not required.

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The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmCore

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm txWredThreshold

Access: Read and write

Criticality: Component

Description

This attribute specifies the threshold for weighted random early detection (WRED). This threshold is calculated as a percentage of the early packet discard (EPD) threshold, which is 85% of the transmit queue length. When the value is ***25%***, WRED starts as soon as the queue is 25% of the way to the EPD threshold. When the value is ***50%***, WRED starts later, after the queue is 50% of the way to the EPD threshold. When the value is ***75%***, WRED starts only when the queue is 75% of the way to the EPD threshold.

This attribute is ignored if the value of the *txWredMode* or *txPacketWiseDiscard* attributes is ***disabled.***

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Mib: AtmCore

Values: Decimal (25; 50; 75)

Units: %

Default: 25

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm clippingBbc (cBbc)

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Access	Read and write
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **bestEffort**

Access	Read and write
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmCore
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **txPacketWiseDiscard (txpd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection.

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Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s.

Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD).

EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the “goodput” of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell.

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the packet-wise discard functions are PPD and EPD. PPD is applicable at cell-transfer points. PPD is not applicable at frame-to-cell conversion points, and is not applicable for *Vpc*s. PPD is configured by this attribute. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. EPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Both PPD and EPD are controlled by this attribute. This attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

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For ***16pOC3PosAtm***, ***4pMRPosAtm*** and ***1pOC48ChSmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points. This attribute may safely be set to ***enabled*** for VCCs since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE **AtmIf Vpt Vcc Vcd Tm** **rxPacketWiseDiscard (rxpd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s. Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD). PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted. For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***,

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3pDS1Atm, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD is available at all VCC connection points where UPC may be activated. PPD is not applicable for *Vpcs*. Packet-wise discards should only be enabled for connections carrying AAL5 segmentation traffic. Setting the value to ***enabled*** for any other traffic type may result in traffic being discarded. PPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, this attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***1pOC48ChSmIrAtm*** cards, this attribute may safely be set to ***enabled*** for VCCs, since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. A value of ***enabled*** for the *rxPacketWiseDiscard* attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in enabling packet-wise discard functions on these cards. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup.

The receive packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm rxPacketWiseDiscard* operational attribute.

Mib — AtmCore

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Values	disabled enabled
Default	disabled

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **txWredMode**

Access	Read and write
Criticality	Component
Description	This attribute specifies the activation of weighted random early detection (WRED) functionality. WRED is considered a packet-wise discard function and as such applies only to AAL5 frame traffic. WRED is applied in the transmit direction for this connection. WRED function should be enabled only for connections which are transferring TCP/IP traffic. WRED acts to prevent synchronization of multiple TCP/IP sources by randomly discarding a small percentage of frames when transmit queue congestion reaches the designated level. WRED may also be used to differentiate service on VCC's by preferentially discarding one VCC before another. Discards start at 0% of cells, when the queue is part-way to the Early Packet Discard (EPD) threshold, and rise to 100% of cells discarded at the EPD threshold. WRED discards all the cells in a frame. A value of ***enabled*** means WRED is enabled for all applications linked to the given *Vcc*. A value of ***perFlow*** means each TCP application has individual control over whether to enable or disable WRED. If the value of the *txPacketWiseDiscard* attribute is ***disabled***, or if the value of this attribute is ***disabled***, WRED functionality is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, the value of this attribute must be ***disabled***. If WRED is active, it is visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute. This attribute is not applicable for *Vpt*s or *Vpt Vcc*s.
Mib	AtmCore
Values	disabled enabled perFlow
Default	disabled

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **abrConnectionType (abrType)**

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Access	Read and write
Criticality	Component
Description	This attribute specifies the type of ABR behavior which is to be enforced at this connection. This attribute is only applicable if the value of the *atmServiceCategory* attribute is ***availableBitRate***. If the value of the *atmServicecategory* attribute is not ***availableBitRate***, this attribute is ignored. The value ***sameAsCa*** is used to request the default behavior as specified in the *CA Abr* component for this *Vcc*. Otherwise, this attribute overrides the default behavior. The value ***virtualSourceDest*** is used to request that this connection point function as a virtual source/virtual destination. The value ***sourceDest*** requires that this connection point function as a S/D for RM cells. S/D mode is automatically invoked at this connection point either if this is a connection end point, or if the next hop connection point is configured as ***nonAbrInterworking***. The value ***nonAbrInterworking*** is used to request that this connection point function as an interworking between ABR and non-ABR service categories. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***. The value ***abrSwitch*** is used to request ABR switch behavior for this connection point. The ABR switch behavior is first, to conform to ***virtualSourceDest*** or ***nonAbrInterworking*** setting on the next hop, and otherwise to implement ABR ER switch behavior. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the only allowable values are ***sameAsCa***, ***nonAbrInterworking*** or ***abrSwitch***. If ***abrSwitch*** is selected, EFCI marking behavior is implemented. For ***1pOC12SmLrAtm*** cards, the only allowable values are ***sameAsCa*** or ***abrSwitch.*** If ***abrSwitch*** is selected, EFCI marking behavior is implemented. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the only allowable value is ***sameAsCa***. The actual ABR functionality which is in effect is visible in the *Vcc/Vpc/Vpt Tm abrConnectionType* operational attribute.
Mib	AtmCore
Values	abrSwitch virtualSourceDest

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sourceDest
nonAbrInterworking
sameAsCa

Default sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **txTrafficDescParm (txTdp)**

Access Read and write

Criticality Component

Description This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR, MCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *txTrafficDescType* is 1 or 2, all of the parameters must be set to zero.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1

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traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 4 and parameter 5 represent are not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may be optionally zero.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate. When the *atmServiceCategory* is ***availableBitRate*** (ABR), the shaping rate is dynamically chosen, based on the ABR flow control mechanism, as a value between the MCR and the PCR or the requested shaping rate if applicable.

For *txTrafficDescType* 3, 4 and 5, the transmit traffic is shaped at the next available shaping rate less than the PCR.

For *txTrafficDescType* 6, 7 and 8 if linear traffic shaping is selected, the transmit traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

For *txTrafficDescType* 3 ,4,5,6,7 and 8, with ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, parameter 4 must be less than or equal to 643,000.

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For *txTrafficDescType* 6, 7 and 8 if inverse-UPC traffic shaping is selected, the transmit traffic is shaped at a variable rate which conforms to the PCR, SCR and MBS of the connection traffic descriptor.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **rxTrafficDescParm (rxTdp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. If the value of the *rxTrafficDescType* attribute is ***sameAsTx***, the values provisioned in this attribute are ignored. The traffic parameters for the receive direction are taken from the *txTrafficDescParm* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), and Minimum Cell Rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for usage parameter control (UPC). When *rxTrafficDescType* is 1 or 2, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must

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be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

If the value of CDVT either in parameter 2 or in parameter 4 is zero, the CDVT is taken from the *CA* defaults for the particular *atmServiceCategory* of this connection.

Parameter 5 of the *rxTrafficDescParm* is always unused.

When *rxTrafficDescriptorType* is 3 through 8, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware. The *check prov* command detects such cases and generates an error message. If this happens, adjust the parameters until they fall within the supported limits.
To calculate the limits, use the following formulae:
I1 = 1,000,000,000 / PCR
L1 = CDVT * 1000
I2 = 1,000,000,000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is 6 through 8.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, I1 and I2 must be less than or equal to 335,523,840. I1 + L1 must be less than or equal to 1,342,156,800. I2 + L2 must be less than or equal to 1,342,156,800. If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41,940,480 or
I2 > 41,940,480 or
I1 + L1 > 167,769,600 or
I2 + L2 > 167,769,600
then both I1 and I2 must be greater than 20,480.

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For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, L2 must be less than or equal to 2,674,011,406.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, L2 must be less than or equal to 17,179,869,180.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **fwdQosParameters (fqp)**

Access	Read and write
Criticality	Component
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The *cdv* element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR the CDV is irrelevant, and its value is forced to the default. The *ctd* specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end to end transit delay information element. For nrt-VBR and UBR the CTD is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm **bwdQosParameters (bqp)**

Access	Read and write
Criticality	Component

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Description	This attribute is a vector of two elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The *cdv* specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR, the CDV is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv clr
Default	(cdv: 16777215, clr: 255)

COMPONENT Atmlf Vpt Vcc Vcd Tm **AvailableBitRate (Abr)**

Groups	GROUP AtmIf Vpt Vcc Vcd Tm Abr Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd Tm AvailableBitRate,* *AtmIf/n Vpc/vci Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Vcd Tm AvailableBitRate* This component contains provisioned ABR-related attributes of a connection. It is an optional subcomponent of the *Vcd Tm* and *Vpd Tm* component. It is used to override DGCRA-related defaults in the *CA Abr* component. It contains the specific configuration for the ABR connection at this connection point. If this is the source of an SPVC connection, this component also contains the ABR parameters required for the SPVC call request.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Vcc Vcd Tm Abr **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioned attributes for the ABR ATM connections configured on an ATM interface.

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Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **initialCellRate (icr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. The value ***sameAsCa*** means the initial cell rate is determined by the *AtmIf CA Abr*/0 *icr* attribute. The value ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection. The value ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection. If the value is less than the MCR of the connection, then the MCR is used as the ICR. If the value is more than PCR of the connection, then PCR is used as the ICR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16777215) sameAsCa useMcr usePcr
Units	cell/s
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **transientBufferExposure (tbe)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the source to send during start-up periods, before the first Resource Management (RM) cell returns. TBE divided by *fixedRoundTripTime* determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. TBE divided by *maxCellsPerRmCell* specifies the operational value of

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forwardRmCellLimit, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* is set to ***erSwitch***.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	16777215

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **fixedRoundTripTime (frtt)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. The value of *transientBufferExposure* divided by the value of FRTT (in seconds) determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	5000000

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **rateDecreaseFactor (rdf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be

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reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib	AtmCore
Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **rateIncreaseFactor (rif)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **maxCellPerRmCell (nrm)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. A value of 2 is not recommended although it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly

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transmitted, and all data traffic is queued up indefinitely.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **maxTimeBetweenRmCells (trm)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the TRM parameter for this connection. TRM provides an lower bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least two other cells have been sent, then the next cell to be transmitted would be a forward RM cell. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***. The provisioned value of 781 is signaled as TRM = 0, in the ABR Additional Parameters Information Element. 1563 is signaled as TRM = 1. 3125 is signaled as TRM = 2. 6250 is signaled as TRM = 3. 12500 is signaled as TRM = 4 25000 is signaled as TRM = 5. 50000 is signaled as TRM = 6. 100000 is signaled as TRM = 7.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **cutoffDecreaseFactor (cdf)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is indicated by the *forwardRmCellLimit* attribute. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64) sameAsCa
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **acrDecreaseTimeFactor (adtf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the maximum time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..1023) sameAsCa
Units	centiseconds
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **dgcraMaximumDelay (dgcraMaxDelay)**

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Access	Read and write
Criticality	Component
Description	This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward direction). This upper bound may be approximated as the sum of the round trip fixed and propagation delays and the maximum queuing delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When there is a reduction in the Allowed Cell Rate (ACR), the policer waits for a correspondingly longer period of time before it enforces at the new cell rate. The value of this attribute must not be less than the *dgcraMinimumDelay* attribute.
Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **dgcraMinimumDelay (dgcraMinDelay)**

Access	Read and write
Criticality	Component
Description	This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward connection). This lower bound may be approximated as the sum of the round trip fixed and propagation delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A smaller value for this attribute implies a more lenient policer. When there is a increase in the Allowed Cell Rate (ACR), the policer waits for a correspondingly shorter period of time before it enforces at the new cell rate.
Mib	AtmCore

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Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **farEndAcrDecreaseTimeFactor (feAdtf)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) of the far end ABR source. The value specified should be the same as the ADTF parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the value of this attribute, the policer begins to limit enforce the incoming traffic at the initial cell rate (ICR) of the far end, as specified by the *farEndInitialCellRate* attribute.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	50

ATTRIBUTE Atmlf Vpt Vcc Vcd Tm Abr **farEndInitialCellRate (felcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) of the far end ABR source. The value specified should be the same as the ICR parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the *farEndAcrDecreaseTimeFactor* attribute, the policer begins to enforce the incoming traffic at the value of this attribute. If this attribute is specified less than the MCR of the connection, then the MCR is used as the *felcr*. If this attribute is more than the PCR of the connection, then PCR is used as the *felcr*.
Mib	AtmCore

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Values	Decimal (0..16777215)
Units	cell/s
Default	0

COMPONENT **AtmIf Vpt Vcc Vcd** **PerformanceMonitoring (Pm)**

Groups	GROUP AtmIf Vpt Vcc Vcd Pm Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/x.y Vcd PerformanceMonitoring* *AtmIf/n Vpt/x vcc/y Vcd PerformanceMonitoring* *AtmIf/n Vpc/x Vpd PerformanceMonitoring* This component represents the Performance Monitoring (Pm) function on a provisioned connection. No Performance Monitoring is done unless this component is present. The attribute values override corresponding values in the AtmIf Pm component. There can be a maximum of 255 Pms on one LP.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP **AtmIf Vpt Vcc Vcd Pm** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioned attributes which specify Performance Monitoring (PM) measurements, namely, Availability Ratio (AR) and Cell Loss Ratio (CLR), and control modes for the connection. The values specified in this group override those specified by the *AtmIf Pm* component.
Mib	AtmCore

ATTRIBUTE **AtmIf Vpt Vcc Vcd Pm** **segSwitchSideMeasurement (segSwitchSide)**

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the switch side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segSwitchSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no switch side PM measurements are done.

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Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

ATTRIBUTE Atmlf Vpt Vcc Vcd Pm **segLinkSideMeasurement (segLinkSide)**

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the link side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segLinkSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no link side PM measurements are done.
Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

ATTRIBUTE Atmlf Vpt Vcc Vcd Pm **controlMode (mode)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the control mode of Performance Monitoring (PM) measurements for the connection. A value of ***autoStart*** means that PM activation procedures will start when the provisioned data is activated. A value of ***onDemand*** means that PM activation procedures will start when the operator issues the *Start* command. The PM measurements in this mode will continue until the operator issues the *Stop* command. A value of ***sameAsInterface*** means that the behavior will be as specified by the *controlMode* attribute of the *AtmIf Pm* component.
Mib	AtmCore
Values	autoStart (auto) onDemand (onDemand) sameAsInterface (sameAsIf)
Default	sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Vcd Pm **switchSideClrType (clrType)**

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Access	Read and write
Description	This attribute specifies how the Cell Loss Ratio (CLR) Performance Monitoring (PM) is measured on a switch-side configuration for the connection. A value of ***complete*** indicates that egress discards at the segment end points are included in the CLR measurement as per ITU standards. A value of ***partial*** indicates that egress discards do not contribute to the CLR measurement. A value of ***sameAsInterface*** means that the behavior is as specified by the *switchSideClrType* attribute of the *AtmIf Pm* component.
Mib	AtmCore
Values	complete partial sameAsInterface (sameAsIf)
Default	sameAsInterface

COMPONENT Atmlf Vpt Vcc Loop (Loop)

Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Loop* The *Loop* component configures an ATM connection so that cells received from the ATM interface are retransmitted back to the interface through that connection. The *Loop* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Test*).
Mib	AtmCore
Common Verbs	Help List Display Add DELete

COMPONENT Atmlf Vpt Vcc NailedUpRelayPoint (Nrp)

Groups	GROUP Atmlf Vpt Vcc Nrp Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Nrp* This component is used to establish a single hop of a nailed-up ATM Bearer Service (ABS) connection. By linking together two *Nrp*s within a module, the associated connections are configured to relay ATM cells to one another. The *Nrp* component requires exclusive use of its parent *Vcc*

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	or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, and *Loop*).
Mib	AtmBearerService
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Vcc Nrp **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Nrp* component.
Mib	AtmBearerService

ATTRIBUTE AtmIf Vpt Vcc Nrp **nextHop (nextHop)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Nrp* component with which this *Nrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp.*
Mib	AtmBearerService
Values	Link (Service, nextHop)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Nrp **oamSegmentBoundary (sb)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Nrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.
Mib	AtmBearerService
Values	no yes sameAsInterface

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Default	sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Nrp **bandwidthElastic (bwElastic)**

Access	Read and write
Criticality	Component
Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Nrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid. A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority*.
Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Vcc Nrp **overrideHoldingPriority (ohpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3

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	4 noOverride
Default	noOverride

COMPONENT Atmlf Vpt Vcc NailedUpEndPoint (Nep)

Groups	GROUP AtmIf Vpt Vcc Nep Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Nep* The *NailedUpEndPoint* component is used to link a VCC to an application that sends and receives frames using the connection. The *Nep* component requires exclusive use of its parent *Vcc* and cannot co-exist with other ATM service components (such as *Nrp*, *Test*, and *Loop*).
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP Atmlf Vpt Vcc Nep Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *Nep* component.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Nep applicationName (appName)

Access	Read only
Description	This attribute specifies the application that sends and receives frames using the VCC. This attribute is set, for example, by provisioning the *Trunk AtmAccess AtmConnection* attribute. If it is properly configured, this attribute will show a value such as “Trk/22 AtmAccess”.
Mib	AtmCore
Values	Link (Service, atmConnection)
Default	No default

COMPONENT Atmlf Vpt Vcc Test (Test)

Groups	GROUP AtmIf Vpt Vcc Test OsiState (State) GROUP AtmIf Vpt Vcc Test Setup (Setup) GROUP AtmIf Vpt Vcc Test Results (Results)
Scope	Device

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Description	*AtmIf/n Vcc/vpi.vci Test* The *Test* component allows test traffic to be sent over an ATM connection. It is used to verify the integrity of hardware carrying ATM traffic, and provides test capabilities similar to those provided by non-ATM port and line tests. The *Test* component requires exclusive use of its parent *Vcc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Loop*). An ATM connection test circulates traffic through a VCC having a *Test* component at one end and the other end configured to loop back ATM cells. The *Test* component generates test frames, transforms them into ATM cells using AAL5 segmentation, and transmits them through the VCC; the returned cells are received by the *Test* component, reassembled back into frames, and the frames are consumed. The test frames generated by the test are grouped into two independent streams. 1) The loading frame stream circulates a set of “loading frames” through the connection as rapidly as possible. The intent of this stream is to verify the operation of the connection under a controlled load. 2) The verification stream transmits a series of “verification frames” through the connection; as each frame is returned, the *Test* component verifies its contents and the next verification frame in the series is transmitted. The intent of this stream is to verify that frames are not being corrupted. The test can be configured to send frames from either or both streams. The size and content of the test frames can also be controlled.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

VERB START **AtmIf Vpt Vcc Test**

Impact	Service
Description	*START AtmIf/n Vcc/vpi.vci Test* This verb invokes an ATM connection test. It has no effect when the test is already running.

VERB STOP **AtmIf Vpt Vcc Test**

Impact	Service
Description	*STOP AtmIf/n Vcc/vpi.vci Test* This verb stops an ATM connection test. It has no effect when the test is not running.

GROUP **AtmIf Vpt Vcc Test** **OsiState (State)**

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Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmCore
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Atmlf Vpt Vcc Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmCore

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Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Atmlf Vpt Vcc Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmCore
Values	idle active (activ) busy
Default	idle

GROUP Atmlf Vpt Vcc Test Setup (Setup)

Properties	Operational
Description	This group contains attributes that govern the operation of an ATM connection test. These attributes cannot be changed while the test is running.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Test frmTypes (types)

Access	Read and write
Description	This attribute specifies the types of the test frames to be transmitted during the ATM connection test. It must contain at least one of the following: ***loading***: A set of “loading frames” is circulated over the link as rapidly as possible. This frame type should be selected when the test is intended to verify the operation of the connection under a specified load. These frames are not checked for bit errors. ***verification***: A single “verification frame” is transmitted over the link; when the frame is returned, its contents are verified and the next verification frame in the series is transmitted. This frame type should be selected when the test is intended to verify that frames are not being corrupted as they pass over the connection.

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Mib	AtmCore
Set of	loading verification
Default	(loading, verification)

ATTRIBUTE Atmlf Vpt Vcc Test **frmSize (size)**

Access	Read and write
Description	This attribute defines the size of the test frames used in an ATM connection test.
Mib	AtmCore
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Atmlf Vpt Vcc Test **frmPatternType (fpt)**

Access	Read and write
Description	This attribute specifies the bit sequence used to fill the frames used in the ATM connection test. It must contain one of the following values: ***ccitt32kBitPattern***: a pseudo-random sequence of 32 Kbit is used ***ccitt8MBitPattern***: a pseudo-random sequence of 8Mbit is used ***customizedPattern***: the pattern defined in the *customizedPattern* attribute is used
Mib	AtmCore
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Atmlf Vpt Vcc Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute specifies a 32 bit sequence to be used to fill frames when the *framePatternType* attribute is set to ***customizedPattern***. The default value gives a pattern of alternating 0 and 1 bits.
Mib	AtmCore
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Atmlf Vpt Vcc Test **duration**

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Access	Read and write
Description	This attribute specifies the maximum number of minutes that the ATM connection test is allowed to run. The maximum allowed value permits the test to be run for up to 21 days.
Mib	AtmCore
Values	Decimal (1..30240)
Units	minutes
Default	1

ATTRIBUTE Atmlf Vpt Vcc Test **bandwidthElastic (bwElastic)**

Access	Read and write
Description	This attribute specifies whether the connection (*VCC*) should be configured with elastic bandwidth or not. Elastic bandwidth is of importance in conjunction with IMA links, where some links fail and the resulting bandwidth is less than the requested bandwidth for all connections. In that case, some connections may be reduced in bandwidth based on the setting of the *bwElastic* attribute. If this attribute is set to ***yes***, the Test application signals to the connection that the bandwidth for this connection is elastic, and may be reduced in the case of IMA link failures. If the bandwidth is reduced, the rate of test cells which can be handled by the connection will also be reduced. If this attribute is set to ***no***, the Test application signals to the connection that the bandwidth for this connection must be maintained at the requested level. If the connection cannot maintain the full bandwidth, the connection may be released (cleared) based on the holding priority of the connection.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Vcc Test **overrideHoldingPriority (ohpri)**

Access	Read and write
Description	This attribute specifies the override holding priority which should be signaled to the *VCC* connection at the start of the test. Holding priority is of importance in conjunction with IMA links, where some links fail and the resulting bandwidth is less than the requested bandwidth for all connections. In that case, some connections may be released based on the connection's holding priority. ***Zero*** (0) is the highest holding priority, and ***four*** (4) is the lowest priority. A setting of ***zero*** to ***four*** overrides whatever holding priority that has been

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configured at the connection (*VCC*). A setting of ***noOverride*** means that the connection should use its internally configured holding priority.

Mib	AtmCore
Values	0 1 2 3 4 noOverride
Default	noOverride

GROUP **Atmlf Vpt Vcc Test** **Results (Results)**

Properties	Operational
Description	This group contains attributes that show the result of an ATM connection test; if no test is running, the attribute group contains the results of the most recently completed test. The attributes of the *Results* group are reset to their initial values whenever a test is started or any attribute of the *Setup* group is set.
Mib	AtmCore

ATTRIBUTE **Atmlf Vpt Vcc Test** **elapsedTime**

Access	Read only
Description	This attribute displays the number of minutes that the test has been running.
Mib	AtmCore
Values	Decimal (0..30240)
Units	minutes
Default	0

ATTRIBUTE **Atmlf Vpt Vcc Test** **timeRemaining**

Access	Read only
Description	This attribute displays the number of minutes that the test will continue to run before stopping automatically.
Mib	AtmCore
Values	Decimal (0..30240)
Units	minutes
Default	0

ATTRIBUTE **Atmlf Vpt Vcc Test** **causeOfTermination**

Access	Read only

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Description	This attribute displays the reason the test ended. It contains one of the following values. ***testTimeExpired***: the test ran for the specified duration ***stoppedByOperator***: a *STOP* command was issued ***neverStarted***: the test has not been started ***testRunning***: the test is currently running
Mib	AtmCore
Values	testTimeExpired stoppedByOperator neverStarted testRunning
Default	neverStarted

ATTRIBUTE Atmlf Vpt Vcc Test **bytesTx**

Access	Read only
Description	This attribute displays the number of bytes sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Test **bytesRx**

Access	Read only
Description	This attribute displays the number of bytes received during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Test **loadingFrmTx**

Access	Read only
Description	This attribute displays the number of loading frames sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Test **loadingFrmRx**

Access	Read only

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Description	This attribute displays the number of loading frames received during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Test **loadingFrmLost**

Access	Read only
Description	This attribute displays the number of loading frames that were lost during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Test **verificationFrmTx**

Access	Read only
Description	This attribute displays the number of verification frames sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Test **verificationFrmRx**

Access	Read only
Description	This attribute displays the number of verification frames received during the test (including errored verification frames). The counter wraps to zero if it exceeds its maximum value of (2**64)-1. Note that the number of verification frames lost during the test can be computed by the expression *verificationFrmTx* - *verificationFrmRx*.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Test **verificationFrmBad**

Access	Read only

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Description	This attribute displays the number of errored verification frames received during the test. A verification frame is considered to be errored if it contains a recognizable verification frame header, but does not match the transmitted frame bit for bit. (Thus, a verification frame that returns after the succeeding verification frame has been transmitted is considered to be errored.) The counter wraps to zero if it exceeds its maximum value of (2**64)-1. Note that the number of correct verification frames received during the test can be computed by the expression *verificationFrmRx* - *verificationFrmBad*.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Test **unrecognizableFrmRx**

Access	Read only
Description	This attribute displays the number of frames received during the test which do not contain a valid loading frame header or verification frame header. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

COMPONENT Atmlf Vpt Vcc **TrafficManagement (Tm)**

Groups	GROUP AtmIf Vpt Vcc Tm Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpc/vpi TrafficManagement,* *AtmIf/n Vcc/vpi.vci TrafficManagement,* *AtmIf/n Vpt/vpi TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci TrafficManagement* The *Tm* subcomponent contains the operational traffic management attributes of a connection. It is created dynamically for each activated *Vcc*, *Vpc,* or *Vpt* component.
Mib	AtmCore
Dyn. Subcomp.	COMPONENT AtmIf Vpt Vcc Tm AvailableBitRate (Abr)
Common Verbs	Help List Display

GROUP Atmlf Vpt Vcc Tm **Operational (Oper)**

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Properties	Operational
Description	This group contains attributes for the *Tm* component to reflect operational traffic attributes.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Tm **txTrafficDescType (txTdt)**

Access	Read only
Description	T his attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm **txQosClass (txQos)**

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

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Mib	AtmCore
Values	0 1 2 3 4 notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm txQueueLength (txQLen)

Access	Read only
Description	This attribute indicates the current number of cells in the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the length of the common queue which is used for this ATM service category. If this connection has *unshapedTransmitQueueing* attribute displayed as ***fifo***, this attribute indicates the number of cells for this connection which are enqueued in a first-in-first-out queuing method for this ATM service category. This will only occur for connections on ATM IP cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the length of the per-VC queue. For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current number of cells in the link class queue used by this connection to buffer its traffic. This attribute does not apply to basic *Vpt*s.
Mib	AtmCore
Values	Decimal (0..1011840)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm txQueueCongestionState (txQCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the congestion state of the common queue. If this connection has *unshapedTransmitQueueing* attribute

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displayed as ***perVc*** or as ***notApplicable***, this attribute displays the congestion state of the per-VC queue.

The congestion state of a queue is indicated by a numeric value ranging from 0 to 3. When a queue is in a congested state x, only traffic with discard priority (DP) 0 to x are enqueued. Traffic with DP > x is discarded.

For example, if the congestion state is 3, there is no congestion and all traffic is enqueued. Likewise, when the congestion state is 0, there is maximum congestion and only traffic with DP=0 is enqueued on that queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current congestion state of the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib — AtmCore

Values — Decimal (0..3)

Default — No default

ATTRIBUTE **Atmlf Vpt Vcc Tm holdingPriority (hpri)**

Access — Read only

Description — This attribute indicates the actual holding priority in effect for this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. Some applications, for example *Vcc Test*, may override the provisioned holding priority.

A value of ***notApplicable*** is displayed when this is an elastic connection. Holding priority does not apply to bandwidth elastic connections.

Holding priority has no effect if the equivalent cell rate (ECR) for a connection is zero.

This attribute does not apply to *Vpt Vcc*s.

Mib — AtmCore

Values — 0
1
2
3
4
notApplicable

Default — No default

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ATTRIBUTE Atmlf Vpt Vcc Tm **rxTrafficDescType (rxTdt)**

Access	Read only
Description	This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm **rxQosClass (rxQos)**

Access	Read only
Description	This attribute indicates the quality of service for the called to calling direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	0 1 2

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3
4
notApplicable
sameAsFwd

Default — No default

ATTRIBUTE Atmlf Vpt Vcc Tm **atmServiceCategory (service)**

Access — Read only

Description — This attribute indicates the ATM service category used for traffic in both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications; that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are

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made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr) availableBitRate (abr)
Default	No default

ATTRIBUTE **AtmIf Vpt Vcc Tm** **trafficShaping (trShaping)**

Access	Read only
Description	This attribute indicates the traffic shaping state of the connection. A value of ***notApplicable*** indicates that traffic shaping is not applicable or not supported for this connection. This is the case: - when the *txTrafficDescType* is 1 or 2. - for standard *Vpt Vcc*s and basic *Vpt*s. - for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, when the *atmServiceCategory* is ***constantBitRate***. In these cases, the value of ***notApplicable*** is indicated regardless of whether traffic shaping is enabled or disabled in the provisioning data. A value of ***disabled*** indicates that traffic shaping is applicable and supported for the type of connection but has been turned off in the provisioning data. A value of ***linear*** or ***inverseUpc*** indicates that traffic shaping is applicable and supported for the type of connection and has been turned on in the provisioning data. This is the only case that indicates that traffic shaping is performed on the connection. In this case, the actual shaping rate is reflected in the *txTrafficDescParm* attribute, parameter number 4. A value of ***linear*** indicates that traffic is being shaped at the constant rate indicated in *txTrafficDescParm* 4. A value of ***inverseUpc*** indicates that the shaper strictly conforms to the requirements of a dual leaky bucket UPC enforcer. This value is indicated if traffic shaping is enabled, and the *txTrafficDescType* for this connection is 6, 7 or 8. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is always ***disabled***. Traffic shaping for connections with *atmServiceCategory* as ***availableBitRate*** (*txTrafficDescType* 9) depends upon the *abrConnectionType* attribute. If *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, the value of this attribute is ***linear***. If

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abrConnectionType is ***erSwitch*** or ***efciSwitch***, this attribute is ***notApplicable***.

Mib: AtmCore

Values:
disabled
linear
inverseUpc
notApplicable

Default: No default

ATTRIBUTE Atmlf Vpt Vcc Tm bearerClassBbc (bcBbc)

Access: Read only

Description: This attribute indicates the bearer capability for this connection.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class vp service is used to indicate a transparent VP service when the user is requesting an ATM only service from the network. In this case, the network does not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except for VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP and SVP connections.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
a
c
x

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vp
notApplicable

Default — No default

ATTRIBUTE Atmlf Vpt Vcc Tm transferCapabilityBbc (tcBbc)

Access — Read only

Description — This attribute indicates the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance, or in the case that the transfer capability in the call request was set to NoIndication.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required for the connection.

The value no for end-to-end timing indicates that end-to-end timing is not required for the connection.

Mib — AtmCore

Values —
0
1
2
5
8
9
10
notApplicable

Default — No default

ATTRIBUTE Atmlf Vpt Vcc Tm clippingBbc (cBbc)

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Access	Read only
Description	This attribute indicates the value of the clipping susceptibility parameter in the broadband bearer capability (BBC) Information Element. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	no yes notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm **unshapedTransmitQueueing (unshap)**

Access	Read only
Description	This attribute indicates the unshaped transmit queuing state of the connection. A value of ***common*** indicates that transmit traffic is being enqueued onto the common transmit queue for this service category. The *txQueueLength* attribute indicates the current length of the common transmit queue. A value of ***fifo*** indicates that transmit traffic is being queued in a first-in-first-out basis for this service category. This is similar to ***common*** queuing, but the *txQueueLength* attribute indicates the number of cells in this connection queue. A value of ***fifo*** will only be indicated for connections on ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***. A value of ***perVc*** indicates that transmit traffic is being enqueued onto a per-VC queue for this connection. A value of ***notApplicable*** indicates that transmit traffic is being shaped for this connection, or that unshaped transmit queuing is not applicable for this type of connection. Transmit traffic for a shaped connection is enqueued onto a per-VC queue, but this attribute is only applicable for unshaped connections. Unshaped transmit queuing is not applicable for basic *Vpt*s.
Mib	AtmCore

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Values	perVc common notApplicable fifo
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm bestEffort

Access	Read only
Description	This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	indicated notIndicated notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm forceTagging (tagging)

Access	Read only
Description	This attribute indicates the state of force tagging option for this connection. Force tagging refers to setting the CLP bit for all cells on a connection. A value of ***enabled*** indicates that the CLP bit is being set to 1 for all cells in the transmit direction on this connection. A value of ***disabled*** indicates that the CLP bit is unchanged for cells in the transmit direction on this connection. The value ***disabled*** is always displayed for *Vpt*s since forced tagging is applied on a per *Vpt Vcc* basis.
Mib	AtmCore
Values	disabled enabled
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm weight

Access	Read only

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Description	This attribute indicates the relative weight of this unshaped connection. Connections with a larger weight get a larger proportion of the link bandwidth or in the case of standard *Vpt Vcc*s, the *Vpt* bandwidth. For all but standard *Vpt Vcc*s, the default connection weight is determined by the weight policy for a service category and the traffic descriptor for a connection. For standard *Vpt Vcc*s, the default connection weight is determined by the *Vcc*'s service category. A value from 1 to 4095 indicates an actual weight. The value ***upToQueueLimit*** indicates that the weight of a connection is up to the transmit queue limit for this connection and is used for connections which have the value of the *unshapedTransmitQueueing* attribute displayed as ***fifo***. This attribute has a displayed value of ***notApplicable*** in the following cases: - This connection has the value of the *trafficShaping* attribute displayed as either ***linear*** or ***inverseUpc***. - This connection has the value of the *trafficShaping* attribute displayed as ***disabled***, but the connection's service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc***. - This connection has the value of the *unshapedTransmitQueueing* attribute displayed as ***common***. - This is a basic *Vpt* connection. - For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, since per-connection weight is not supported.
Mib	AtmCore
Values	Decimal (1..4095) upToQueueLimit notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm usageParameterControl (upc)

Access	Read only
Description	This attribute indicates the UPC state of the connection. A value of ***notApplicable*** indicates that UPC is not applicable or not supported for the connection. This is the case: - when the connection's *rxTrafficDescType* is 1 or 2. - for standard *Vpt Vcc*s and basic *Vpt*s. A value of ***notApplicable*** is set regardless of whether UPC is disabled or enabled in provisioning data. A value of ***disabled*** indicates that UPC is applicable and supported for the type of connection but has been turned off in the provisioning data.

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A value of ***enforced*** indicates that UPC is actively checking conformance for the connection and is discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. On some ATM cards, the counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

A value of ***monitored*** indicates that UPC is actively checking conformance for the connection and counting the violations, but is not discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. The counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt. rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

If the *atmServiceCategory* for this connection is ***availableBitRate***, a value of ***enforced*** indicates that Dynamic Generic Cell Rate Algorithm (DGCRA) is active for the connection. The traffic descriptor parameters used for DGCRA enforcement are reflected in the *rxTrafficDescParm* of the connection.

Mib	AtmCore
Values	enforced disabled monitored notApplicable
Default	No default

ATTRIBUTE **AtmIf Vpt Vcc Tm txPacketWiseDiscard (txpd)**

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point. This attribute is not applicable for *Vpt*s. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements. A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. A value of ***wred*** indicates that Weighted Random Early Detection is in effect at this connection point. W-RED can be enabled by provisioning for PVCs and SPVCs.

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For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Packet-wise functions are not applicable to virtual path connections (VPCs) on these cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points.

For ***16pOC3PosAtm***, ***4pMRPosAtm*** and ***1pOC48ChSmIrAtm*** cards, packet-wise discard functions apply to individual VCCs, as well as VCCs within VPCs at the VPC termination points, known as VPTs. PPD and EPD do not apply to tandem VPC connection points.

Mib — AtmCore

Set of — ppd
epd
wred

Default — No default

ATTRIBUTE Atmlf Vpt Vcc Tm **rxPacketWiseDiscard (rxpd)**

Access — Read only

Description — This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point.

This attribute is not applicable for *Vpt*s.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, packet-wise

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functions are not applicable to virtual path connections (VPCs).

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch, 4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, packet-wise discard functions apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs.

For ***1pOC48ChSmIrAtm*** card, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Note that a provisioned value of ***enabled*** for the *Vcc/Vpc Vcd/Vpd Tm rxPacketWiseDiscard* provisionable attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in actually enabling packet-wise discard functions in the receive data direction of a connection locally on these cards, thus does not affect the operational value displayed.

Mib — AtmCore

Set of — ppd
epd

Default — No default

ATTRIBUTE Atmlf Vpt Vcc Tm **bandwidthElastic (bwElastic)**

Access — Read only

Description — This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application (for example, *Trunk*) running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced is displayed in the *bandwidthReduction* attribute.

A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection is not released.

A value of ***no*** indicates that the bandwidth for this connection is not reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Bandwidth elasticity has no effect for connections which have an

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equivalent cell rate (ECR) of zero.

This attribute is not applicable for *Vpt*s and *Vpt Vcc*s.

Mib — AtmCore

Values — no
yes

Default — No default

ATTRIBUTE Atmlf Vpt Vcc Tm bandwidthReduction (bwReduction)

Access — Read only

Description — This attribute shows the amount by which the bandwidth has been reduced for this connection. This value is non-zero only for connections which have *bandwidthElastic* displayed as ***yes***, and which are also operating in a reduced bandwidth mode. This is typically the case for selected connections running over an IMA link. This attribute takes a value from 0 (no reduction) up to the ECR. For all connections which are running at their full allocated bandwidth, *bwReduction* has the value 0. Connections which have been reduced in allocated bandwidth have a positive number for this attribute. The *bwReduction* may be subtracted from the ECR (which is displayed as *txTrafficDescParm* 5) to determine the actual bandwidth allocated to this connection.

Mib — AtmCore

Values — Decimal (0..2147483647)

Units — cell/s

Default — No default

ATTRIBUTE Atmlf Vpt Vcc Tm abrConnectionType (abrType)

Access — Read only

Description — This attribute indicates the type of ABR behavior which is in effect at this connection. This attribute is only applicable if the *atmServiceCategory* attribute is ***availableBitRate***. If the *atmServiceCategory* attribute is not ***availableBitRate***, this attribute value is set to ***notApplicable***.

For ATM cards which do not support ABR connections, the possible values for this attribute are ***notApplicable***, ***efciSwitch***, or ***nonAbrInterworking***. In EFCI marking mode, the Explicit Forward Congestion Indication (EFCI) field in the data cell headers is used to indicate transmit queue congestion.

For ATM cards which do support ABR connections, if the *connectionPointType* is ***connectionEndPoint***, the value of this attribute is ***sourceDest***. In this mode, the ABR Source and Destination behavior is in effect at this connection. This attribute is also ***sourceDest*** in the case where the next hop connection is specified as ***nonAbrInterworking***. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of

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the *Nrp* or *Rp* component.

If the *connectionPointType* is not ***connectionEndPoint***, the value of this attribute depends upon the *abrConnectionType* provisioning and the card type to which the traffic is forwarded on the backplane. The default *abrConnectionType* is provisioned at the *CA Abr abrConnectionType* attribute, and may be overridden for a provisioned connection in the *Vcd Tm abrConnectionType* or *Vpd Tm abrConnectionType* attribute. If the *CA Abr abrConnectionType* attribute is ***virtualSourceDest*** at either one of the two connection points, and if both the connection points are defined on ATM cards which support ABR connections, virtual source and destination behavior is applied to the connection. In this instance, the attribute displays the value ***virtualSourceDest***.

This attribute has the value ***erSwitch*** if ABR explicit rate functionality is in effect at this connection. In this mode, the switch may modify the Explicit Rate (ER) field of backward Resource Management (RM) cells to indicate the status of congestion at this connection point.

This attribute has the value ***nonAbrInterworking*** in the case where this connection point is functioning as an SPVC origin for an ABR connection where the link side of this connection is configured as a non-ABR ATM service category. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

Mib: AtmCore

Values:
erSwitch
efciSwitch
virtualSourceDest
sourceDest
nonAbrInterworking
notApplicable

Default: No default

ATTRIBUTE Atmlf Vpt Vcc Tm txTrafficDescParm (txTdp)

Access: Read only

Description: This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR), actual cell rate (ACR), explicit rate (ER), equivalent cell rate (ECR), and actual shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds.

When *txTrafficDescType* is 1 or 2, parameters 1 through 5 are unused.

In this description, PCR is the greater of either the PCR or the requested

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shaping rate (parameter 1 or parameter 5) specified in the *txTrafficDescParm* attribute under the *Vcd Tm* or *Vpd Tm* component.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, parameter 4 reflects the actual shaping rate in cell/s for this connection. For CQC-based ATM cards, the set of available shaping rates is based on the number of interfaces doing shaping (attribute *perVcQueueInterfaces*), and the *shapingScalingFactor* attribute of the *Arc Cqc Override* component. A rate of zero (0) indicates that shaping is not performed, or that the interface is down.

When *txTrafficDescType* is 9***,*** parameter 1 represents the PCR; parameter 2 represents the Cell Delay Variation Toleration (CDVT); parameter 3 represents the Minimum Cell Rate (MCR); the meaning of parameter 4 depends upon the value of the *abrConnectionType* attribute. if *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, parameter 4 represents the Allowed Cell Rate (ACR); If *abrConnectionType* is ***erSwitch***, parameter 4 represents the Explicit Rate (ER); and if *abrConnectionType* is ***efciSwitch***, parameter 4 reflects the actual shaping rate in cell/s for this connection.

When *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9, parameter 5 reflects the equivalent cell rate in cell/s for this connection as determined by the Connection Admission Control (CAC) algorithm. The equivalent cell rate is useful in determining the admission characteristics of this connection.

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Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm **txQueueThresholds (txQThresh)**

Access	Read only
Description	This attribute indicates the queue limit and the discard thresholds for the transmit queue of this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the thresholds of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the thresholds of the per-VC queue. The first element indicates the queue limit. The provisioned value of the transmit queue limit is derived from the *txQueueLimit* attribute under the service category subcomponents of the *CA* component for the service category of this connection. The second element is the threshold that marks the transition from congestion state 1 to congestion state 0. This is the threshold at which traffic with discard priority (DP) = 1 is discarded. This threshold is set at approximately 90 percent of the first parameter, the operational queue limit. The third element is the threshold that marks the transition from congestion state 2 to congestion state 1. This is the threshold at which traffic with DP = 2 is discarded. This threshold is set at approximately 75 percent of the first parameter, the operational queue limit. The fourth element is the threshold that marks the transition from congestion state 3 to congestion state 2. This is the threshold at which traffic with DP = 3 is discarded. This threshold is set at approximately 35 percent of the first parameter, the operational queue limit. For ***1pOC48ChSmIrAtm*** cards, this attribute displays the thresholds of the link class queue used by this connection to buffer it traffic. This attribute does not apply to basic *Vpt*s.
Mib	AtmCore
Vector of	Decimal (0..1011840)
Units	cells
Index	Decimal (0..3)

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Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm **rxTrafficDescParm (rxTdp)**

Access	Read only
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. Cell delay variation tolerance (CDVT) is expressed in microseconds. When *rxTrafficDescType* is 1 or 2, none of the parameters are used. When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; parameter 4 represents the CDVT. When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; parameter 4 represents the CDVT. When *rxTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents CDVT; parameter 3 represents the MCR; parameter 4 is not used. If *upc* is ***disabled*** for this connection, the values of PCR, SCR, MBS and CDVT are the provisioned parameters. If *upc* is ***enabled***, the values of PCR, SCR, MBS, and CDVT are exactly the values used by the usage parameter control hardware in policing the arriving traffic. These may vary slightly from the provisioned values due to granularity of the hardware. In the case where the PCR is equal to the SCR, the effective MBS is zero.

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Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm txQosParameters (tqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm rxQosParameters (rqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.

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Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

COMPONENT Atmlf Vpt Vcc Tm **AvailableBitRate (Abr)**

Groups	GROUP AtmIf Vpt Vcc Tm Abr Operational (Oper)
Scope	Device
Description	*AtmIf/n Vpc/vpi Tm AvailableBitRate,* *AtmIf/n Vcc/vpi.vci Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Tm AvailableBitRate* This component contains ABR-related operational attributes of a connection. It is dynamically created for connections where the value of the *atmServiceCategory* attribute is ***availableBitRate***, and where the value of the *abrConnectionType* attribute is ***sourceDest***, or ***virtualSourceDest***.
Mib	AtmCore
Common Verbs	Help List Display

GROUP Atmlf Vpt Vcc Tm Abr **Operational (Oper)**

Properties	Operational
Description	This group contains operational attributes for connections using ABR service category.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **initialCellRate (icr)**

Access	Read only
Description	This attribute indicates the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. For nailed-up connections, this attribute is determined by the provisioned value of the *initialCellRate* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element. The ICR for a connection is a value between the MCR and the PCR. Furthermore, ICR has an upper bound determined by the *transientBufferExposure* divided by *fixedRoundTripTime*.

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Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **transientBufferExposure (tbe)**

Access	Read only
Description	This attribute indicates the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the resource to send during start-up periods, before the first Resource Management (RM) cell returns. For nailed-up connections, this attribute is determined by the provisioned value of the *transientBufferExposure* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **fixedRoundTripTime (frtt)**

Access	Read only
Description	This attribute indicates the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. For nailed-up connections, this attribute is determined by the provisioned value of the *fixedRoundTripTime* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **rateDecreaseFactor (rdf)**

Access	Read only
Description	This attribute indicates the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256.

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RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

For nailed-up connections, this attribute is determined by the provisioned value of the *rateDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

Mib AtmCore

Values Decimal (0..15)

Default No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **rateIncreaseFactor (rif)**

Access Read only

Description This attribute indicates the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64.

RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR.

For nailed-up connections, this attribute is determined by the provisioned value of the *rateIncreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

Mib AtmCore

Values Decimal (0..15)

Default No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **maxCellPerRmCell (nrm)**

Access Read only

Description This attribute indicates the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell.

For nailed-up connections, this attribute is determined by the provisioned

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	value of the *maxCellsPerRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256)
Units	cells
Default	No default

ATTRIBUTE **Atmlf Vpt Vcc Tm Abr** **maxTimeBetweenRmCell (trm)**

Access	Read only
Description	This attribute indicates the TRM parameter for this connection. TRM provides an upper bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxTimeBetweenRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
Units	microsec
Default	No default

ATTRIBUTE **Atmlf Vpt Vcc Tm Abr** **cutoffDecreaseFactor (cdf)**

Access	Read only
Description	This attribute indicates the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the *forwardRmCellLimit* attribute, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *cutoffDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

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Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **acrDecreaseTimeFactor (adtf)**

Access	Read only
Description	This attribute indicates the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. For nailed-up connections, this attribute is determined by the provisioned value of the *acrDecreaseTimeFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **forwardRmCellLimit (crm)**

Access	Read only
Description	This attribute indicates the CRM parameter for this connection. CRM is the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is obtained as *transientBufferExposure* divided by *maxCellsPerRmCell*.
Mib	AtmCore
Values	Decimal (1; 3; 7; 15; 31; 63; 127; 255; 511; 1023; 2047; 4095)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **txRateChangeInfo (txrci)**

Access	Read only

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Description	This attribute indicates the rate change information put into the last forward Resource Management (RM) cell turned around as a backward-RM cell. For connections configured as an ABR Source or Destination, the turned around backward-RM cell is sent over the interface. For connections configured as an ABR Virtual Source or Virtual Destination, the turned around backward-RM cell is sent over the backplane.
Mib	AtmCore
Values	congestionIndicated noIncreaseIndicated explicitRateIndicated
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **acrRateChangeInfo (arci)**

Access	Read only
Description	This attribute indicates the type of change in the Allowed Cell Rate (ACR) as a result of the information in the last backward Resource Management (B-RM) cell received from the interface. This attribute value is only applicable when the *Vcc Tm* or *Vpc Tm* *abrConnectionType* attribute is ***sourceDest*** or ***VirtualSourceDest***. In all other cases, this attribute value is ***notApplicable***. A value of ***noChange*** indicates that the rate did not change as a result of the last backward RM cell received. A value of ***decreasedByRdf*** or ***increasedByRif*** indicates that the ACR was increased or decreased by the corresponding factor. This change is as a result of the CI or NI bit setting in the last backward RM cell, or an ADTF timeout. A value of ***setToExplicitRate*** indicates that the ACR was set to the ER value in the last backward RM cell.
Mib	AtmCore
Values	noChange decreasedByRdf increasedByRif setToExplicitRate notApplicable
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr **txFwdRmCells**

Access	Read only
Description	This attribute counts the number of forward Resource Management (RM) cells sent over the interface since the last backward RM-cell was received from the interface. If the value of this attribute is greater than or equal to

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	the value of *forwardRmCellLimit*, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. This counter is reset to zero each time a backward-RM cell is received. This counter does not wrap to zero if it reaches its maximum value of 4095 in order to indicate that no backward RM cell has been received.
Mib	AtmCore
Values	Decimal (0..4095)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Tm Abr rxEfci

Access	Read only
Description	This attribute indicates the value of the Explicit Forward Congestion Indication (EFCI) bit of the last data cell received from the interface. When a forward Resource Management (RM) cell is turned around as a backward-RM cell, the Congestion Indication (CI) field of the backward-RM cell is set to 1, if the value of this attribute is ***indicated***. This attribute is set to ***notIndicated*** each time a backward-RM cell is transmitted.
Mib	AtmCore
Values	notIndicated indicated
Default	No default

COMPONENT Atmlf Vpt Vcc SourcePvc (Src)

Groups	GROUP Atmlf Vpt Vcc Src Provisioned (Prov) GROUP Atmlf Vpt Vcc Src Operational (Oper) GROUP Atmlf Vpt Vcc Src OsiState (State) GROUP Atmlf Vpt Vcc Src CallRedirectionOper (RedirectOp)
Scope	Device
Description	*Atmlf/n Vcc/vpi.vci SrcPvc* *Atmlf/n Vpt/vpi Vcc/vci SrcPvc*

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This component represents the source end of a soft PVC.

Mib	AtmNetworking
Opt. Subcomp.	COMPONENT AtmIf Vpt Vcc Src CallRedirection (Redirect) COMPONENT AtmIf Vpt Vcc Src ManualDtl (Mdtl) COMPONENT AtmIf Vpt Vcc Src RerouteOverride (RerOv)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP AtmIf Vpt Vcc Src Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SourcePvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src callingAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the calling address of the soft PVC. If it is a null string, then the calling address is the address of the current interface (that is, where the soft PVC originates).
Mib	AtmNetworking
Values	String (0..20, Hex)
Default	""

ATTRIBUTE AtmIf Vpt Vcc Src calledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the called (remote) address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

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ATTRIBUTE AtmIf Vpt Vcc Src **calledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the remote VPI and VCI of the soft PVC.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src **adminControl**

Access	Read: All Write: All
Description	This attribute specifies the initial state of the connection. If this attribute is set to ***permLocked***, the connection initially remains down following activation. Setting this attribute to ***unlocked*** causes the connection to be established when it is activated.
Mib	AtmNetworking
Values	permLocked unlocked
Default	unlocked

ATTRIBUTE AtmIf Vpt Vcc Src **aisGeneration (ais)**

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC when the SPVC is not up. The only exception is that when the source SPVC attribute *adminControl* is set to ***permLocked***, OAM-AIS cells are not generated for the source SPVC. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

GROUP AtmIf Vpt Vcc Src **Operational (Oper)**

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Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvp* or *SrcPvc* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc Src **retryCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed attempts to set up the soft PVP or soft PVC since the last time the connection failed.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Vpt Vcc Src **lastFailureCauseCode**

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages. The default value for this attribute is set to 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src **lastFailureDiagCode**

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

GROUP Atmlf Vpt Vcc Src **OsiState (State)**

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc Src **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Atmlf Vpt Vcc Src **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmNetworking
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Atmlf Vpt Vcc Src **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmNetworking
Values	idle active (activ) busy
Default	idle

GROUP Atmlf Vpt Vcc Src **CallRedirectionOper (RedirectOp)**

Properties	Operational
Description	This group contains the operational attributes associated with the *CallRedirection* subcomponent.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc Src **currentDestination**

Access	Read: All Write: Illegal
Description	This attribute indicates the current destination of the soft PVC or soft PVP. A ***notConnected*** status indicates that the connection is not established. A ***primary*** status indicates that the connection is established to the remote destination specified by *calledAddress* and *calledVpiVci/calledVpi* attributes under *Atmif Vcc Src* or *Atmif Vpc Src* or *Atmif Vpt Vcc Src* Component. A ***secondary*** status indicates that the connection is established to the remote destination specified by *secondaryCalledAddress* and *secondaryCalledVpiVci/secondaryCalledVpi* attributes under *Atmif Vcc Src CallRedirection* or *Atmif Vpc Src CallRedirection* or *Atmif Vpt Vcc Src CallRedirection* Component.
Mib	AtmNetworking
Values	notConnected primary secondary

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Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src **primaryAdminState**

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the primary destination. The value ***locked*** indicates that the primary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the primary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src **secondaryAdminState**

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the secondary destination. The value ***locked*** indicates that the secondary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the secondary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src **lastSecondaryFailureCauseCode**

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code value of the last signalling message to the secondary destination which contained the CAUSE information element. If there has been no previous failure, the value for this attribute is 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src **lastSecondaryFailureDiagCode**

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Access	Read: All Write: Illegal
Description	This attribute indicates the diagnostic code associated with the *lastSecondaryFailureCauseCode* attribute. If the diagnostic code was not provided with that CAUSE information element or if there has been no previous failure, this attribute is empty.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT **AtmIf Vpt Vcc Src** **CallRedirection (Redirect)**

Groups	GROUP AtmIf Vpt Vcc Src Redirect Provisioned (Prov)
Scope	Device
Description	*Atmif/n Vcc/vpi.vci SrcPvc CallRedirection* *Atmif/n Vpt/vpi Vcc/vci SrcPvc CallRedirection* This component represents the secondary destination information for the source end of a soft PVC. The addition of this subcomponent is not critical to the parent SPVC. Deletion of this subcomponent or changes to its attributes will impact service of the SPVC if it is established to the secondary destination.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

VERB LOCK **AtmIf Vpt Vcc Src Redirect**

Impact	Service
Description	*Lock Atmif Vcc Src CallRedirection* *Lock -primary Atmif Vcc Src CallRedirection* *Lock -secondary Atmif Vcc Src CallRedirection* *Lock Atmif Vpt Vcc Src CallRedirection* *Lock -primary Atmif Vpt Vcc Src CallRedirection* *Lock -secondary Atmif Vpt Vcc Src CallRedirection* This verb selectively precludes a provisioned destination address from consideration during call setup attempts for a Src PVC. If [*-primary*] option is present, then the primary destination address is

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precluded from call setup attempts. If the connection is established to the primary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the secondary destination address.

If [*-secondary*] option is present, then the secondary destination address is precluded from call setup attempts. If the connection is established to the secondary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the primary destination address.

If no option is present, the secondary destination is locked. This command will have the same effect as providing the *secondary* option.

Only one of the primary or the secondary addresses may be locked at any given time.

VERB UNLOCK **Atmlf Vpt Vcc Src Redirect**

Impact: Service

Description:

Unlock Atmif Vcc Src CallRedirection
Unlock -primary Atmif Vcc Src CallRedirection
Unlock -secondary Atmif Vcc Src CallRedirection
Unlock -primary -secondary Atmif Vcc Src CallRedirection

Unlock Atmif Vpt Vcc Src CallRedirection
Unlock -primary Atmif Vpt Vcc Src CallRedirection
Unlock -secondary Atmif Vpt Vcc Src CallRedirection
Unlock -primary -secondary Atmif Vpt Vcc Src CallRedirection

This verb selectively unlocks a destination address. The indicated address will be considered in subsequent call setup attempts.

If [*-primary*] option is present, then the primary destination address is unlocked and it is considered for subsequent call setup attempts. This action does not have any impact on established connections.

If [*-secondary*] option is present, then the secondary destination address is unlocked and it is considered in subsequent call setup attempts. This action does not have any impact on established connections.

If no option is present the secondary destination address is unlocked. This command will have the same effect as providing the *secondary* option.

If both options are provided, either of the primary or the secondary address which may have been locked will be unlocked.

GROUP **Atmlf Vpt Vcc Src Redirect** **Provisioned (Prov)**

Properties: Provisioned

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Description	This group contains the provisionable attributes of the Source PVC *CallRedirection* component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc Src Redirect **secondaryCalledAddress**

Access	Read: All Write: All
Description	This attribute specifies the secondary called address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src Redirect **secondaryCalledVpiVci**

Access	Read: All Write: All
Description	This attribute specifies the secondary called VPI and VCI of the soft PVC.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

COMPONENT Atmlf Vpt Vcc Src **ManualDtl (Mdtl)**

Groups	GROUP Atmlf Vpt Vcc Src Mdtl Provisioned (Prov) GROUP Atmlf Vpt Vcc Src Mdtl Operational (Oper)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc ManualDtl* *AtmIf/n Vpc/vpi SrcPvp ManualDtl* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc ManualDtl* This component represents the ability to specify the PNNI path on a per connection basis for provisioned SPVC and SPVP connections. The addition or deletion of this component is critical to the parent SPVC or SPVP. Changes to the attributes contained under this component are not critical.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

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VERB REConnect **AtmIf Vpt Vcc Src Mdtl**

Impact	Service
Description	*REConnect AtmIf/n Vcc/vpi.vci Src Mdtl* *REConnect -primary AtmIf/n Vcc/vpi.vci Src Mdtl* *REConnect -alternate AtmIf/n Vcc/vpi.vci Src Mdtl* *REConnect -automatic AtmIf/n Vcc/vp.vci Src Mdtl* This command is used to trigger a connection to attempt to connect using the requested path. The behavior of this command differs for connections which do and do not subscribe to Path Optimization capabilities provided by rerouting services. To summarize: 1. Non-reroute Subscribed connections A reconnect comand will result in the connection being taken down and re-establishment attempts being made. By default (if no option is specified), the primary path is attempted first otherwise the path specified by the option is first attempted. In the event of reconnect failure, subsequent re-establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths. 2. Reroute Subscribed connections A reconnect comand will utilize make-before-break functionality. If an option is specified then only that path will be attempted. If a connection can be established, then datapath switching will be used to replace the existing connection minimizing cell loss. If no option is specified, the connection establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths only until such time that a successfully established connection would be deemed more optimal than the incumbent. For instance, if a reconnect command is issued for a connection which is on it's alternate path and establishment on the primary path fails then the reconnect operation is considered complete and the connection will remain on the alternate path.

GROUP **AtmIf Vpt Vcc Src Mdtl** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the Manual DTL selection paths for provisioned connections. The normal sequence for connection retry is: First try to establish the connection using the *primaryPath*. If the connection is not successful and if the *alternatePath* has been provisioned, try to connect using the *alternatePath*. If the connection is still unsuccessful, use the PNNI routing protocol to generate the path.
Mib	AtmNetworking

ATTRIBUTE **AtmIf Vpt Vcc Src Mdtl** **primaryPath (priPath)**

Access	Read and write

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Description	This attribute specifies the name of the primary MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni*.
Mib	AtmNetworking
Values	String (1..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src Mdtl **alternatePath (altPath)**

Access	Read and write
Description	This attribute specifies the name of the alternate MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni.* An empty string disables the alternate path.
Mib	AtmNetworking
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src Mdtl **automaticFallback (auto)**

Access	Read and write
Description	This attribute specifies whether PNNI routing is to be used to establish a connection if connection attempts using the primary and alternate paths fail. If the value is ***enable***, PNNI routing will be attempted; if the value is ***disable***, it will not.
Mib	AtmNetworking
Values	disable enable
Default	enable

ATTRIBUTE Atmlf Vpt Vcc Src Mdtl **mdtlVersion (vers)**

Access	Read and write
Description	This attribute indicates a version number for Specified Paths and will ensure that the reroute behaviors (not subscribed) are maintained following a software migration to a software version where global rerouting is supported for Specified Path connections. This is an internal attribute intended for the above purpose only and should not be altered.
Mib	AtmNetworking
Values	notRerouteCapable rerouteCapable
Default	notRerouteCapable

GROUP Atmlf Vpt Vcc Src Mdtl **Operational (Oper)**

Properties	Operational

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Description	This attribute group contains the operational attributes associated with the *atmSrcMdtl* component
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc Src Mdtl **currentPath (curPath)**

Access	Read: All Write: Illegal
Description	This attribute indicates the current connection status of the Specified Path connection. A ***not connected*** status indicates that the connection is not established. The retry sequence did not succeed. The network operator can issue the *Reconnect* command to restart the retry sequence. A ***primary*** status indicates that the connection is using the path specified by the *primaryPath* attribute. An ***alternate*** status indicates that the connection is using the path specified by the *alternatePath* attribute. An ***automatic*** status indicates that the connection is using the path generated by the PNNI routing protocol. An ***unknown*** status indicates that the provisioning data for the path upon which the connection is established has been altered. A ***waiting connection*** status indicates that the connection is in a retry phase.
Mib	AtmNetworking
Values	not connected primary alternate automatic unknown waiting connection
Default	"not connected"

ATTRIBUTE Atmlf Vpt Vcc Src Mdtl **primaryPathFailCause (priPathFail)**

Access	Read: All Write: Illegal
Description	This attribute identifies the last cause code failure for the primary path. The value is reset to zero when the *primaryPath* attribute is set to a new value.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Src Mdtl **alternatePathFailCause (altPathFail)**

Access	Read: All Write: Illegal

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Description	This attribute identifies the last cause code failure for the alternate path. The value is set to zero when the *alternatePath* attribute is set to a new value.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

COMPONENT Atmlf Vpt Vcc Src RerouteOverride (RerOv)

Groups	GROUP AtmIf Vpt Vcc Src RerOv Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc RerouteOverride* *AtmIf/n Vpc/vpi SrcPvp RerouteOverride* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc RerouteOverride* *FrAtm/n Dlci/x Siwf RerouteOverride* This component represents the ability to override rerouting capability subscription options on a per connection basis for provisioned SPVC and SPVP connections. The addition of this component and changes to the attributes contained in this component are critical to the parent SPVC or SPVP. However, the deletion of this component is not a critical change for the connection. If this component is deleted, the connection remains active with the last provisioned subscription options. Subscription is lost when the connection goes down and re-establishes.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE **AtmIf Vpt Vcc Src RerOv**

Impact	Service
Description	*OPTimize AtmIf/n Vcc/<vpi.vci> Src RerOv* *OPTimize AtmIf/n Vpc/<vpi> Src RerOv* *OPTimize AtmIf/n Vpt/<vpi> Vcc/<vci> Src RerOv* *OPTimize FrAtm/n Dlci/x Siwf RerOv* This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is cancelled. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP **AtmIf Vpt Vcc Src RerOv** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes related to rerouting subscription options for provisioned connections.
Mib	AtmNetworking

ATTRIBUTE **AtmIf Vpt Vcc Src RerOv** **protocol**

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by the connection segment. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsInterface***: The requested rerouting protocols are specified by the *protocol* attribute under the *Reroute Ov* component for the interface. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr***: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmNetworking

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Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Src RerOv **localConnectionRecoverySubscr (lRecSub)**

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription. If the connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted. One of the following values can be specified: ***sameAsInterface***: The subscription rule is determined by the *localConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local connection recovery, otherwise the connection segment does not request subscription. ***yes:*** The connection segment requests subscription to local connection recovery. ***no***: The connection segment does not request subscription to local connection recovery.
Mib	AtmNetworking
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Src RerOv **localPathOptimizationSubscr (lOptSub)**

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

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If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local path optimization.
no: The connection segment does not request subscription to local path optimization.

Mib — AtmNetworking

Values
no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Src RerOv **globalConnectionRecoverySubscr (gRecSub)**

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR connection recovery.
no: The connection segment does not request subscription to global or EBR connection recovery.

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Mib	AtmNetworking
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Src RerOv **globalPathOptimizationSubscr (gOptSub)**

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. If the connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription. If the connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted. One of the following values can be specified: ***sameAsInterface***: The subscription rule is determined by the *globalPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise the connection segment does not request subscription. ***yes:*** The connection segment requests subscription to global or EBR path optimization. ***no***: The connection segment does not request subscription to global or EBR path optimization.
Mib	AtmNetworking
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

COMPONENT AtmIf Vpt Vcc **EndPoint (Ep)**

Groups	GROUP AtmIf Vpt Vcc Ep Operational (Oper)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Ep* *AtmIf/n Vpt/vpi Vcc/vci Ep* The *EndPoint* component of the application associated with the VCC is

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	used to link a switched VCC to an application that sends and receives frames using the connection.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc Ep Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the AtmEndPoint component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Ep applicationName

Access	Read only
Description	This attribute indicates the component name associated with the application associated with the switched VCC.
Mib	AtmNetworking
Values	The name of the component
Default	No default

COMPONENT AtmIf Vpt Vcc RelayPoint (Rp)

Scope	Device
Description	*AtmIf/n Vpc/vpi Rp* *AtmIf/n Vcc/vpi.vci Rp* *AtmIf/n Vpt/vpi Vcc/vci Rp* The *RelayPoint* component is used to establish a single hop of a Switched connection. When linked together, two *Rp*s within a module, the associated connections are configured to relay ATM cells to one another.
Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT AtmIf Vpt Vcc Rp NextHop
Common Verbs	Help List Display

COMPONENT AtmIf Vpt Vcc Rp NextHop

Instance	Decimal (1..300)
Groups	GROUP AtmIf Vpt Vcc Rp NextHop Operational (Oper)

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Scope	Device
Description	*AtmIf/n Vpc/vpi Rp nextHop/n* *AtmIf/n Vcc/vpi.vci Rp nextHop/n* *AtmIf/n Vpt/vpi Vcc/vci Rp nextHop/n* The *RelayPointNextHop* component indicates the hops associated with this Rp component. There can be more than one component listed if the Vcc "*distributionType"* is ***"pointToMultipoint"*** and the "*callDirection"* is ***"fromLink"***.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP Atmlf Vpt Vcc Rp NextHop Operational (Oper)

Properties	Operational
Description	This attribute group contains an operational attribute for the AtmRelayPointNextHop component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc Rp NextHop nextHopValue

Access	Read only
Description	This attribute indicates the component name of the Rp component with which this Rp component is associated.
Mib	AtmNetworking
Values	The name of the component
Default	No default

COMPONENT Atmlf Vpt Vcc DestinationPvc (Dst)

Groups	GROUP Atmlf Vpt Vcc Dst Operational (Oper) GROUP Atmlf Vpt Vcc Dst OsiState (State)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci DstPvc* *AtmIf/n Vpt/vpi Vcc/vci DstPvc* This component represents the destination end of a soft PVC. This component can be dynamically created or provisioned. When this component is dynamically created, it implicitly indicates that a connection has been established. This dynamically created component does not exist when there is no connection.

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When this component is provisioned, it does not imply that a connection has been established. The existence of a provisioned *destinationPVC* component allows the possibility of generating OAM-AIS cells when the SPVC is down. The attribute *aisGeneration* under component *Configuration* is used to specify AIS generation at the destination end of a soft PVC.

Mib	AtmNetworking
Subcomponents	COMPONENT AtmIf Vpt Vcc Dst Configuration (Config)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Vcc Dst Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *DestinationPvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Dst calledAddress

Access	Read: All Write: Illegal
Description	This attribute represents the called address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Dst callingAddress

Access	Read: All Write: Illegal
Description	This attribute represents the remote address of the soft PVC. If the address in not known, then the value of this address is ***Unknown***.
Mib	AtmNetworking
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Dst callingVpiVci

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute represents the remote VPI and VCI of the soft PVC. If the VPI and VCI values are not known, this attribute is set to ***Unknown***.
Mib	AtmNetworking
Values	String (7..9, ASCII)
Default	No default

GROUP Atmlf Vpt Vcc Dst **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc Dst **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Atmlf Vpt Vcc Dst **operationalState (osiOper)**

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Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Atmlf Vpt Vcc Dst usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT Atmlf Vpt Vcc Dst Configuration (Config)

Groups	GROUP Atmlf Vpt Vcc Dst Config DstProv
Scope	Device
Description	*Atmif/n Vcc/x.y Dst Override* This *Override* component contains provisioned attributes for this destination SPVC.

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If this component does not exist, the destination SPVC behaves as if this component had been provisioned with default values for all its attributes.

Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc Dst Config DstProv

Properties	Provisioned
Description	This group contains provisionable attributes for destination SPVC/Ps.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Dst Config aisGeneration (ais)

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC or SPVP is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC or SPVP when the SPVC or SPVP is not up. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

COMPONENT AtmIf Vpt Vcc MulticastNailedUpRelayPoint (Mnrp)

Groups	GROUP AtmIf Vpt Vcc Mnrp Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Mnrp* This component is used to establish a root of a multicast nailed-up ATM Bearer Service (ABS) connection. By linking a *Mnrp* to a *Nrp*, the associated connections are configured to relay ATM cells from *Mnrp* to *Nrp*. The *Mnrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, *Nrp* and *Loop*). This component is supported only on

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4pOC3SmIrAtm and 4pOC3MmAtm cards.This component is not supported under *Vpt Vcc* and *Vpt Vpc*.

Mib: AtmBearerService

Common Verbs: Help, List, Display, Add, DELete

GROUP Atmlf Vpt Vcc Mnrp **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Mnrp* component.

Mib: AtmBearerService

ATTRIBUTE Atmlf Vpt Vcc Mnrp **oamSegmentBoundary (sb)**

Access: Read and write

Criticality: Component

Description: This attribute specifies the OAM segment boundary desired for a *Mnrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute.
The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.

Mib: AtmBearerService

Values: no, yes, sameAsInterface

Default: sameAsInterface

ATTRIBUTE Atmlf Vpt Vcc Mnrp **bandwidthElastic (bwElastic)**

Access: Read and write

Criticality: Component

Description: This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the

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bandwidthReduction attribute.
A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Mnrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid.
A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE Atmlf Vpt Vcc Mnrp **overrideHoldingPriority (ohpri)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3 4 noOverride
Default	noOverride

ATTRIBUTE Atmlf Vpt Vcc Mnrp **nextHop (nextHop)**

Access	Read and write
Description	This attribute specifies the list of *Nrp* components with which this *Mnrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp.* This attribute must be provisioned with at least one Nrp component under a compatible connection type.
Mib	AtmBearerService
List of	Link (Service, nextHop)

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Default	No default

COMPONENT **Atmlf Vpt Vcc** **PerformanceMonitoring (Pm)**

Instance	linkSide switchSide
Groups	GROUP Atmlf Vpt Vcc Pm PmStatus (Status) GROUP Atmlf Vpt Vcc Pm FwdClrMeasurements (FwdClr) GROUP Atmlf Vpt Vcc Pm BwdClrMeasurements (BwdClr) GROUP Atmlf Vpt Vcc Pm ArMeasurements (Ar)
Scope	Device
Description	*AtmIf/n Vcc/x.y PerformanceMonitoring* *AtmIf/n Vpt/x Vcc/y PerformanceMonitoring* *AtmIf/n Vpc/x PerformanceMonitoring* This component contains operational attributes for Performance Monitoring (PM) measurements on the connection. It also allows starting and stopping PM measurements when the *controlMode* attribute in the *AtmIf Pm* or *AtmIf Vcc Vcd Pm* or *AtmIf Vpc Vpd Pm* component is set to ***onDemand***.
Mib	AtmCore
Common Verbs	Help List Display

VERB START **Atmlf Vpt Vcc Pm**

Impact	Service
Description	*Start AtmIf/n Vcc/x.y PerformanceMonitoring* *Start AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) activation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when the connection is idle, PM has already been started or the *controlMode* attribute for the PM measurements has a value of ***autoStart***. The measurements will continue until the *Stop* verb is issued.

VERB STOP **Atmlf Vpt Vcc Pm**

Impact	Service
Description	*Stop AtmIf/n Vcc/x.y PerformanceMonitoring* *Stop AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) deactivation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when PM is not running or the *controlMode* attribute for the PM measurements has a value of ***autoStart***.

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GROUP Atmlf Vpt Vcc Pm PmStatus (Status)

Properties	Operational
Description	This group contains attributes indicating the status of each Performance Monitoring (PM) measurement.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Pm clrMeasurementStatus (clr)

Access	Read only
Description	This attribute displays the Cell Loss Ratio (CLR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE Atmlf Vpt Vcc Pm arMeasurementStatus (arStatus)

Access	Read only
Description	This attribute indicates the Availability Ratio (AR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for the failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE Atmlf Vpt Vcc Pm failureCause (cause)

Access	Read only

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Description	This attribute indicates the failure cause of Performance Monitoring (PM) measurements. The following are possible causes: The value ***noError*** indicates no error. The value ***unknownCause*** indicates unknown failure cause. The value ***softwareResourcesUnavailable*** indicates software resources reserved for a maximum of 255 active PMs on the local FP card have been used up. The value ***hardwareResourcesUnavailable*** indicates hardware resources reserved for a maximum of 512 active PMs CLR card have been used up on the Link Side local card. The value ***remoteEndNoResponse*** indicates no response from remote end during activation. The value ***activationCollision*** indicates activation collision was detected. Usually this is caused by both ends of the connection being provisioned to request PM. Only one end should be so provisioned. The value ***remoteEndRejectedActivation*** indicates the remote end has rejected an activation request. Usually this is due to the remote end reaching a resource limit. The value ***pcrUnsupported*** indicates the Tx or Rx PCR is out of range. The PCR value must be between 0 and 409601. The value ***nextHopConnectionUnsupported*** indicates the next hop card type or connection type do not allow access to the necessary hardware to support PM measurements. The value ***upcNotDisabled*** indicates UPC is not disabled on the local next hop card for this connection. PM measurements are not supported when UPC is either enforced or monitored.
Mib	AtmCore
Values	noError unknownCause softwareResourcesUnavailable hardwareResourcesUnavailable remoteEndNoResponse activationCollision remoteEndRejectedActivation pcrUnsupported nextHopConnectionUnsupported upcNotDisabled
Default	noError

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ATTRIBUTE Atmlf Vpt Vcc Pm clrEnhancementStatus (enhanced)

Access	Read only
Description	This attribute indicates an enhanced mode of operation for Cell Loss Ratio (CLR) measurements by including cell discards from the remote segment end point which are not covered by the performance measurement (PM) cell. The value ***inactive*** indicates that CLR enhanced mode of operation has not been activated. The value ***active*** indicates that discards at the remote segment end point are being included in CLR measurements. The value ***remoteEndNotProvidingStatistics*** indicates that the remote end is not replying to proprietary requests for additional discard counts. This occurs when the remote end does not have the software necessary to recognize these requests.
Mib	AtmCore
Values	inactive active remoteEndNotProvidingStatistics
Default	inactive

GROUP Atmlf Vpt Vcc Pm FwdClrMeasurements (FwdClr)

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the forward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Pm fwdTotalClrInterval

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) has been calculated in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm fwdTotalUserCellsRx0

Access	Read only

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Description	This attribute indicates the number of cells with CLP=0 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **fwdTotalUserCellsTx0**

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the local end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **fwdTotalUserCellsRx01**

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **fwdTotalUserCellsTx01**

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the local end over the total CLR measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

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ATTRIBUTE Atmlf Vpt Vcc Pm **fwdPmCellDiscardCount**

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **fwdClr0**

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **fwdClr01**

Access	Read only
Description	This attribute indicates the CLR for CLP=0+1 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP Atmlf Vpt Vcc Pm **BwdClrMeasurements (BwdClr)**

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the backward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Pm **bwdTotalClrInterval**

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) measurement has been calculated in the backward direction.
Mib	AtmCore

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Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm bwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm bwdTotalUserCellsTx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm bwdTotalUserCellsRx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm bwdTotalUserCellsTx01

Access	Read only

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Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **bwdPmCellDiscardCount**

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **bwdClr0**

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **bwdClr01**

Access	Read only
Description	This attribute displays the CLR for CLP=0+1 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP Atmlf Vpt Vcc Pm **ArMeasurements (Ar)**

Properties	Operational
Description	This group contains Availability Ratio (AR) measurements of the connection.

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Mib	AtmCore

ATTRIBUTE Atmlf Vpt Vcc Pm **currentAvailabilityStatus**

Access	Read only
Description	This attribute indicates the current status of the bidirectional connection for purposes of Availability Ratio (AR) computation. The value ***notApplicable*** means AR measurement was not requested on this connection. The value ***available*** means AR is running and considers the connection available (that is, the *arAvailableTime* attribute is being incremented). The value ***unavailable*** means AR measurement was requested but the connection is currently unavailable.
Mib	AtmCore
Values	notApplicable available unavailable
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **arTotalTime**

Access	Read only
Description	This attribute indicates the total time used for calculating Availability Ratio (AR) of the bi-directional connection.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **arAvailableTime**

Access	Read only
Description	This attribute indicates the total time the connection was available.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Atmlf Vpt Vcc Pm **arAvailabilityRatio**

Access	Read only

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Description	This attribute indicates the ratio of network availability representing the ratio of available time to the total time of the connection.
Mib	AtmCore
Values	Decimal (0.0000000..1.0000000)
Default	No default

COMPONENT Atmlf Vpt Vcc PathTraceRecord (PTRecord)

Groups	GROUP Atmlf Vpt Vcc PTRecord Operational (Oper)
Scope	Device
Description	*Atmlf/n Vcc/x.y PTRecord* *Atmlf/n Vpc/n PTRecord* *Atmlf/n Vpt/n Vcc/x.y PTRecord* This component represents the path trace records for this connection. If the connection is deleted, this component is also deleted.
Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT Atmlf Vpt Vcc PTRecord Hop
Common Verbs	Help List Display

GROUP Atmlf Vpt Vcc PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.

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Mib	AtmNetworking
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord **timeStamp**

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	String (40, ASCII)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord **causeCode**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord **diagCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT Atmlf Vpt Vcc PTRecord **Hop**

Instance	Decimal (0..200)
Groups	GROUP Atmlf Vpt Vcc PTRecord Hop Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord Hop/n* *Atmlf/n Iisp Ptf PTRecord Hop/n* *Atmlf/n Uni Ptf PTRecord Hop/n* *Atmlf/n Pnni Ptf PTRecord Hop/n* *Atmlf/n Vpt/n Aini Ptf PTRecord Hop/n* *Atmlf/n Vpt/n Iisp Ptf PTRecord Hop/n* *Atmlf/n Vpt/n Uni Ptf PTRecord Hop/n* *Atmlf/n Vpt/n Pnni Ptf PTRecord Hop/n* *Atmlf/n Vcc/x.y PTRecord Hop/n* *Atmlf/n Vpc/n PTRecord Hop/n* *Atmlf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record.

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Depending on the hops, different attributes are present.

Mib	AtmNetworking
Dyn. Subcomp.	COMPONENT AtmIf Vpt Vcc PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **nodeName**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **portId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **portName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.

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Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information.

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	This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **blockedNodeId (bNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

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This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.

Mib AtmNetworking

Values String (22, Hex)

Default No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord Hop **blockedLinkPortId (bPortId)**

Access Read: All
Write: Illegal

Criticality Component

Description This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Mib AtmNetworking

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord Hop **blockedLinkSucceedingNodeId (sNodeId)**

Access Read: All
Write: Illegal

Criticality Component

Description This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Mib AtmNetworking

Values String (22, Hex)

Default No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord Hop **dstVpiVci**

Access Read: All
Write: Illegal

Criticality Component

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Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord Hop **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc PTRecord Hop **dstEndPointReference (depr)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE **AtmIf Vpt Vcc PTRecord Hop** **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	no yes
Default	no

COMPONENT **AtmIf Vpt Vcc PTRecord Hop** **VendorSpecificInfo (Vsi)**

Instance	Decimal (0..10)
Groups	GROUP AtmIf Vpt Vcc PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other

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than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.

Mib: AtmNetworking

Common Verbs: Help, List, Display

GROUP AtmIf Vpt Vcc PTRecord Hop Vsi Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop Vsi length

Access: Read: All
Write: Illegal

Description: This attribute indicates the length of the vendor-specific information group.

Mib: AtmNetworking

Values: Decimal (0..11)

Default: No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop Vsi organizationUniqueId (oui)

Access: Read: All
Write: Illegal

Description: This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.

Mib: AtmNetworking

Values: String (3, Dashed Hex)

Default: No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop Vsi data

Access: Read: All
Write: Illegal

Description: This attribute indicates the contents of the vendor-specific information group.

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Mib	AtmNetworking
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Vpt Vcc RerouteInfo (RerInfo)

Groups	GROUP AtmIf Vpt Vcc RerInfo Operational (Oper) GROUP AtmIf Vpt Vcc RerInfo EbrOperational (EOper) GROUP AtmIf Vpt Vcc RerInfo LocalOperational (LOper) GROUP AtmIf Vpt Vcc RerInfo GlobalOperational (GOper) GROUP AtmIf Vpt Vcc RerInfo EbrStatistics (EStats) GROUP AtmIf Vpt Vcc RerInfo LocalStatistics (LStats) GROUP AtmIf Vpt Vcc RerInfo GlobalStatistics (GStats)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci RerouteInfo* *AtmIf/n Vpc/vpi RerouteInfo* *AtmIf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo* This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc RerInfo Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes that indicate rerouting activities at the connection level.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo lastOptimizationMetric (lOptMet)

Access	Read only
Description	This attribute indicates which optimization metric was last used to select a path for the connection segment.
Mib	AtmNetworking
Values	cdv maxCtd

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	aw specifiedPath
Default	No default

GROUP Atmlf Vpt Vcc RerInfo **EbrOperational (EOper)**

Properties	Operational
Description	This group contains attributes that indicate the EBR rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the EBR rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc RerInfo **ebrRecoverySubscribed (eRecSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **ebrOptimizationSubscribed (eOptSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR path optimization. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **ebrOptimizationMetricValue (eOptVal)**

Access	Read only
Description	This attribute indicates the EBR optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and

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rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib: AtmNetworking

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **ebrOptimalMetricValue (eOptMetVal)**

Access: Read only

Description: This attribute indicates the EBR optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib: AtmNetworking

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **ebrOptimizationState (eOptSt)**

Access: Read only

Description: This attribute indicates the current EBR optimization state of the connection segment.

One of the following values is indicated:
optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment

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	has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo **ebrTimeOfLastRecovery (eTime)**

Access	Read only
Description	This attribute indicates the date and time of the last EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP AtmIf Vpt Vcc RerInfo **LocalOperational (LOper)**

Properties	Operational
Description	This group contains attributes that indicate the local rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo **localRecoverySubscribed (lRecSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	no yes

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Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **localOptimizationSubscribed (lOptSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local path optimization. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **localOptimizationMetricValue (lOptVal)**

Access	Read only
Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. A value of ***undefined*** indicates that the local optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **localOptimalMetricValue (lOptMetVal)**

Access	Read only
Description	This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking

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Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **localOptimizationState (lOptSt)**

Access	Read only
Description	This attribute indicates the current local optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **localTimeOfLastRecovery (lTime)**

Access	Read only
Description	This attribute indicates the date and time of the last local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP Atmlf Vpt Vcc RerInfo **GlobalOperational (GOper)**

Properties	Operational

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Description	This group contains attributes that indicate the global rerouting characteristics of a connection. This group is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc RerInfo **globalRecoverySubscribed (gRecSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **globalOptimizationSubscribed (gOptSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global path optimization. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **globalOptimizationMetricValue (gOptVal)**

Access	Read only
Description	This attribute indicates the global optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking

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Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **globalOptimalMetricValue (gOptMetVal)**

Access	Read only
Description	This attribute indicates the global optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***globalOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.The ***primary*** and ***alternate*** values are used to denote the optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **globalOptimizationState (gOptSt)**

Access	Read only
Description	This attribute indicates the current global optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking

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Values	optimal recovered optimized
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **globalTimeOfLastRecovery (gTime)**

Access	Read only
Description	This attribute indicates the date and time of the last global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP Atmlf Vpt Vcc RerInfo **EbrStatistics (EStats)**

Properties	Operational
Description	This group contains statistics related to Ebr rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc RerInfo **totalEbrConnectionRecoveries (eConnRec)**

Access	Read only
Description	This attribute counts successful EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **totalEbrPathOptimizations (ePathOpt)**

Access	Read only
Description	This attributes counts successful EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **totalEbrOptimizationAttempts (eOptAtt)**

Access	Read only
Description	This attribute counts the total number of EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Vcc RerInfo **LocalStatistics (LStats)**

Properties	Operational
Description	This group contains statistics related to local rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc RerInfo **totalLocalConnectionRecoveries (lConnRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **totalLocalPathOptimizations (lPathOpt)**

Access	Read only
Description	This attributes counts successful local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **totalLocalOptimizationAttempts (lOptAtt)**

Access	Read only
Description	This attribute counts the total number of local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Vpt Vcc RerInfo **GlobalStatistics (GStats)**

Properties	Operational
Description	This group contains statistics related to global rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE Atmlf Vpt Vcc RerInfo **totalGlobalConnectionRecoveries (gConnRec)**

Access	Read only
Description	This attribute counts successful global connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Vpt Vcc RerInfo **totalGlobalPathOptimizations (gPathOpt)**

Access	Read only
Description	This attributes counts successful global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE AtmIf Vpt Vcc RerInfo **totalGlobalOptimizationAttempts (gOptAtt)**

Access	Read only
Description	This attribute counts the total number of global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf **EmissionPriority (Ep)**

Instance	Decimal (2..7)
Groups	GROUP AtmIf Ep Provisioned (Prov)
Scope	Device
Description	*AtmIf/n EmissionPriority/n* This component controls the characteristics of an emission priority for an *AtmIf* component. This component is optional for an *AtmIf* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, this component is not permitted. There are eight emission priorities (EP). EP 0 is the highest priority and EP 7 is the lowest priority. Normally, link bandwidth is allocated in strict precedence of emission priority. All traffic at EP 0 is transmitted on the link first. Then, when there is an unused cell opportunity, a cell from EP 1 is transmitted. When EP 0 and 1 have nothing to send, then EP 2 gets the transmit cell opportunities. Each emission priority 2 through 7 has a corresponding *Ep* component with instance number 2 through 7. Emission priorities 0 and 1 do not have corresponding *Ep* components since there is no configuration which is relevant for those EPs. Traffic is associated with an EP in the following way. Each *Vcc* or *Vpc* has an associated *atmServiceCategory*. Under the *AtmIf* component there is a service category component which provides default characteristics for that service category. For example, *AtmIf*/n *CA Cbr*/0 defines the default characteristics for connections of the CBR service category. Each service category has an *emissionPriority* (*ep*) attribute, for example *AtmIf*/n *CA Cbr*/0 *ep*. The value provisioned in that *ep* attribute maps to the corresponding *Ep* component. If the value of the *AtmIf*/n *CA Cbr*/0 *ep* attribute is ***2***, the CBR service category is associated with *AtmIf*/n *Ep*/2. EP 0 and EP 1 are in the absolute priority range. Traffic in the absolute priority range always gets first choice for a transmit cell opportunity. EP 2

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through EP 7 are in the guaranteed bandwidth range. Traffic at EP 3 through EP 7, in the guaranteed bandwidth range, may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned for the *Ep*.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, EPs 5 and 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, EP 0 and EP 1 are in the absolute priority range while EP 2 through EP 7 are allocated link bandwidth using a conventional Weighted Fair Queue (WFQ) discipline. EP 2 through EP 7 have their service preference over one another determined by their minimum bandwidth guarantee. Link bandwidth is first allocated to EP 0 and EP 1 in absolute priority fashion. Any remaining bandwidth is distributed to EP 2 through EP 7 in proportion to the minimum bandwidth guarantee provisioned for the *Ep*. The default values of the *minimumBandwidthGuarantee* attribute for the *Ep* components emulate the strict precedence of emission priority.

Mib: AtmCore

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Ep Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which specify the behavior of an emission priority for the ATM interface.

Mib: AtmCore

ATTRIBUTE AtmIf Ep minimumBandwidthGuarantee (minBw)

Access: Read and write

Criticality: Process

Description: This attribute specifies the minimum bandwidth guarantee associated with this *EmissionPriority.* A minimum bandwidth guarantee is designed to prevent starvation of traffic at this EP by traffic at higher EPs. Minimum bandwidth guarantees only operate for EPs within the guaranteed bandwidth range 2 through 7.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, EPs 5 and 6 are not supported.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***,

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3pDS3Atm2, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmlrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmlrAtm*** cards, the following description applies:

The minimum bandwidth guarantee specified is a percentage of the bandwidth which remains after all traffic at EP 0 and EP 1 is served. For example, if EP 0 and EP 1 traffic consumes 20% of the link bandwidth, the minimum bandwidth guarantee applies to the remaining 80% of the link bandwidth. A minimum bandwidth guarantee of 2% would actually result in this EP getting 2% of 80% for a total 1.6% of the link bandwidth. If this EP uses less than this link bandwidth, the extra opportunities are allocated to the other EPs in priority. Due to scheduling and cell arrival times, traffic at this EP may not necessarily achieve full utilization of its minimum bandwidth guarantee.

The value ***priority*** specifies that this *Ep* gets bandwidth based solely on the hierarchy of emission priorities. In this case, there is no minimum bandwidth guarantee.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the following description applies:

The minimum bandwidth guarantee specified is the proportion of the bandwidth which remains after all traffic at EP 0 and EP 1 is served. In other words, the bandwidth allocated to an EP is:
(bandwidth unused by EP 0 and 1) * *minimumBandwidthGuarantee*
(the sum of the values of the *minimumBandwidthGuarantee* attributes for all active EPs*)*

For example, if EP 0 and EP 1 traffic consumes 20% of the link bandwidth, the minimum bandwidth guarantee applies to the remaining 80% of the link bandwidth. Assume *Ep/2*, *Ep/3*, and *Ep/4* have a *minimumBandwidthGuarantee* attribute value of ***70***, ***20***, and ***10*** respectively.

If all EPs are actively sending traffic, then the bandwidth is allocated as follows:
- EP 2 = 80% * 70/(70+20+10) = 56% of the link bandwidth
- EP 3 = 80% * 20/(70+20+10) = 16% of the link bandwidth
- EP 4 = 80% * 10/(70+20+10) = 8% of the link bandwidth

If some time later EP 3 has no traffic to send, then its share of the bandwidth is allocated to EP 2 and EP 4 in proportion to their *minimumBandwidthGuarantee* attribute values as follows:
- EP 2 = 80% * 70/(70+10) = 70% of the link bandwidth
- EP 4 = 80% * 10/(70+10) = 10% of the link bandwidth

If some time later only one out the EP 2, EP 3, and EP 4 has traffic to send, then it would be allocated the entire 80% of the link bandwidth. Additionally, if both EP 0, and EP 1 have no traffic to send, the remaining active EP would be allocated 100% of the link bandwidth irrespective of

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the value of its *minimumBandwidthGuarantee* attribute.

The value ***priority*** emulates the strict precedence of emission priority by assigning default values to the *minimumBandwidthGuarantee* attribute. Depending on how many EPs are in use in the guaranteed bandwidth range 2 through 7, these default values change:
- For one EP, the value is ***100***.
- For two EPs, the values are ***99***, and ***1***.
- For three EPs, the values are ***90***, ***9***, and ***1***.
- For four EPs, the values are ***77***, ***18***, ***4***, and ***1***.

For all cards, when specifying a value for the *minimumBandwidthGuarantee* attribute, consider the effect on cell delay variation (CDV) of traffic which would normally be of higher priority. For example, if *RtVbr* service category traffic is assigned to *Ep*/2 and *Ubr* traffic is assigned on *Ep*/7 where *Ep*/7 has a *minimumBandwidthGuarantee* of ***25***, there can be a large impact on the CDV of the *RtVbr* traffic. Traffic of the *Cbr* or *RtVbr* service category which is sensitive to CDV, and is of known volume, can be assigned on EP 0 or EP 1 which are independent of the effects of minimum bandwidth guarantee.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***2pSTM1Ch***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, the allowed values of this attribute are ***priority***, or a numeric value between ***1*** and ***48***.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the allowed values of this attribute are ***priority***, or a numeric value between ***1*** and ***100***.

For all cards, the sum of the values of the *minimumBandwidthGuarantee* attribute for all *Ep*s under an *AtmIf* component must not exceed 100%.

Mib	AtmCore
Values	Decimal (1..100) priority
Units	%
Default	priority

COMPONENT Atmlf PerformanceMonitoring (Pm)

Groups	GROUP AtmIf Pm Provisioned (Prov)
Scope	Device
Description	*AtmIf/n PerformanceMonitoring* This component provides the default Performance Monitoring (PM) measurements and control modes for all *AtmIf Vcc* and *AtmIf Vpc*

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connections on the ATM interface. For provisioned connections, PM is done only if a PM component is provisioned under the *Vcc Vcd* or *Vpc Vpd* component. For all switched connections, PM will be done as specified by this component subject to resource limits.

Only the following card types support Performance Monitoring: ***2pOC3SmAtm2, 2pOC3MmAtm2, 2pSTM1eAtm, 3pDS3Atm2, 3pE3Atm2, 32pDS1MsaMt, 32pDS1MsaSt, 32pE1MsaMt, 32pE1MsaSt, 32pDS1MsaMtp, 32pDS1MsaStp, 32pE1MsaMtp, 32pE1MsaStp, 32pDS1Msa, 32pE1Msa.***

Mib — AtmCore

Common Verbs — Help, List, Display

GROUP Atmlf Pm Provisioned (Prov)

Properties — Provisioned

Description — This group contains provisioned attributes which specify the default Performance Monitoring (PM) measurements, namely, Cell Loss Ratio (CLR) and Availability Ratio (AR), and control modes for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface.

Mib — AtmCore

ATTRIBUTE Atmlf Pm segSwitchSideMeasurement (segSwitchSide)

Access — Read and write

Description — This attribute specifies the default Performance Monitoring (PM) measurements on the switch side configuration for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface.

Mib — AtmCore

Set of — availabilityRatio (ar)
cellLossRatio (clr)

Default — No default

ATTRIBUTE Atmlf Pm segLinkSideMeasurement (segLinkSide)

Access — Read and write

Description — This attribute specifies the default Performance Monitoring (PM) measurements on the link side configuration for all *AtmIf Vcc* and *AtmIf Vpc* connections, on the ATM interface.

Mib — AtmCore

Set of — availabilityRatio (ar)
cellLossRatio (clr)

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Default	No default

ATTRIBUTE AtmIf Pm controlMode (mode)

Access	Read and write
Criticality	Component
Description	This attribute specifies the default control mode of Performance Monitoring (PM) measurements for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface. ***autoStart*** means Performance Monitoring (PM) measurements start when the provisioned data is activated. ***onDemand*** means PM measurements start when the operator issues the *Start* command. The PM measurements in this mode continue until the operator issues the *Stop* command.
Mib	AtmCore
Values	autoStart (auto) onDemand (onDemand)
Default	autoStart

ATTRIBUTE AtmIf Pm switchSideClrType (clrType)

Access	Read and write
Description	This attribute specifies how the Cell Loss Ratio (CLR) Performance Monitoring (PM) is measured on a switch side configuration for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface. ***complete*** indicates that egress discards at the segment end points are included in the CLR measurement as per ITU standards. ***partial*** indicates that egress discards do not contribute to the CLR measurement.
Mib	AtmCore
Values	complete partial
Default	complete

COMPONENT AtmIf LinkTxUtilization (Ltu)

Groups	GROUP AtmIf Ltu Provisioned (Prov) GROUP AtmIf Ltu Operational (Oper)
Scope	Device
Description	*AtmIf/n LinkTxUtilization* This component allows the users to specify whether alarms should be

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generated when the ATM link transmit utilization exceeds provisioned threshold *criticalTxUtilAlarmThreshold*.

The ATM link transmit utilization is calculated once per minute over the preceding one minute interval. The decision to set or clear an alarm is made at every sample period except the first 2 minutes right after the measurement starts.

When three consecutive measurements of the ATM link transmit utilization are above the provisioned threshold, a SET alarm is generated if there is no outstanding SET alarm.

When three consecutive measurements of the ATM link transmit utilization are at or below the provisioned threshold, and there is an outstanding SET alarm, a CLEAR alarm is generated.

Mib AtmCore

Common Verbs
Help
List
Display
Add
DELete

GROUP Atmlf Ltu Provisioned (Prov)

Properties Provisioned

Description This group contains provisioned attributes to control ATM link transmit utilization alarms.

Mib AtmCore

ATTRIBUTE Atmlf Ltu criticalTxUtilAlarmThreshold (critThresh)

Access Read and write

Description This attribute specifies the critical alarm threshold for the ATM link transmit utilization.

A value of ***disabled*** means the ATM link transmit utilization is not measured and no alarms are generated.

A change from ***disabled*** to a numeric value resets the value of the *lastAlarmPeakTxUtilization* attribute to zero and starts the ATM link transmit utilization measurement.

When three consecutive samples of the ATM link transmit utilization, over the 3-minute sliding window, are above the provisioned threshold and there is no outstanding alarm, a critical alarm is generated. While the alarm is outstanding, the value of the *lastAlarmPeakTxUtilization* attribute indicates the peak sample of the ATM link transmit utilization.

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When three consecutive samples of the ATM link transmit utilization, over the 3-minute sliding window, are at or below the provisioned threshold, any outstanding alarm is cleared. The value of the *lastAlarmPeakTxUtilization* attribute is not reset when the alarm is cleared.

A change from one numeric value to another restarts the ATM link transmit utilization measurement with a new 3-minute probation period. The value of the *lastAlarmPeakTxUtilization* attribute is not affected by this change.

A change from a numeric value to ***disabled*** causes any outstanding alarm to be cleared immediately. The value of the *lastAlarmPeakTxUtilization* attribute is not affected by this change.

Mib	AtmCore
Values	Decimal (1..99) disabled
Units	%
Default	80

GROUP Atmlf Ltu Operational (Oper)

Properties	Operational
Description	This group of attributes contains statistics on the ATM link transmit utilization.
Mib	AtmCore

ATTRIBUTE Atmlf Ltu lastAlarmPeakTxUtilization (lastAlarmPeakTxUtil)

Access	Read only
Description	This attribute indicates the peak value of the ATM link transmit utilization during the most recent (or current) period in which the transmit utilization alarm has been active. The value of this attribute is reset to zero when the ATM link transmit utilization measurement is initiated.
Mib	AtmCore
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Atmlf Aini

Groups	GROUP AtmIf Aini Provisioned (Prov) GROUP AtmIf Aini AccountingOptions (AcctOpt)
Scope	Device
Description	*AtmIf/n Aini* This component represents an ATM Inter-Network Interface (AINI)

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signaling interface. If this component is provisioned, the *Uni, Iisp,* or *Pnni* component can not be provisioned under the same *AtmIf* component. If this component is deleted, then all associated *Vcc* components are deleted.

Mib	AtmAini
Subcomponents	COMPONENT AtmIf Aini Signalling (Sig)
Opt. Subcomp.	COMPONENT AtmIf Aini CallingAddressScreening (CallingAScr) COMPONENT AtmIf Aini CalledAddressScreening (CalledAScr) COMPONENT AtmIf Aini PathTraceFilter (Ptf) COMPONENT AtmIf Aini ServiceTrace (SrvTrace) COMPONENT AtmIf Aini Reroute
Dyn. Subcomp.	COMPONENT AtmIf Aini PathTraceTestConnection (Ptt)
Dyn. Subcomp.	COMPONENT AtmIf Aini Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Aini Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Aini* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmAini
Values	networkSide userSide
Default	networkSide

ATTRIBUTE AtmIf Aini softPvpAndPvcRetryPeriod (sRetryPeriod)

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can

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	take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmAini
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Aini softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmAini
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE AtmIf Aini passAlongRequest

Access	Read: All Write: All
Description	This attribute specifies whether unrecognized messages and information elements with the pass along request set are accepted when received at the interface. If they are not allowed, then they are discarded and the procedures specified by the message or information element's action indicator field are followed.
Mib	AtmAini
Values	allowed discarded
Default	allowed

GROUP AtmIf Aini AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmAini

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ATTRIBUTE AtmIf Aini accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	AtmAini
Set of	bill test study audit force
Default	No default

ATTRIBUTE AtmIf Aini accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***. If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.
Mib	AtmAini
Values	origTerm intermediate

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Default	intermediate

ATTRIBUTE AtmIf Aini accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

ATTRIBUTE AtmIf Aini serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf Aini Signalling (Sig)

Groups	GROUP AtmIf Aini Sig Provisioned (Prov) GROUP AtmIf Aini Sig OsiState (State) GROUP AtmIf Aini Sig Operational (Oper) GROUP AtmIf Aini Sig Statistics (Stats)
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling*

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	This component represents the signaling entities for the interface.
Mib	AtmAini
Opt. Subcomp.	COMPONENT AtmIf Aini Sig VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP AtmIf Aini Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmAini
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Aini Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmAini

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Values	none nativeE164 nsap
Default	none

ATTRIBUTE Atmlf Aini Sig **operatingMode**

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmAini
Values	normal provisionedOnly
Default	normal

GROUP Atmlf Aini Sig **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Sig **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmAini
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Aini Sig operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmAini
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Aini Sig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmAini
Values	idle active (activ) busy
Default	idle

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GROUP Atmlf Aini Sig Operational (Oper)

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Sig lastTxCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Aini Sig lastTxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmAini
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE Atmlf Aini Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Aini Sig lastRxDiagCode

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Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmAini
Values	Hex (H.0..H.ff)
Default	No default

GROUP Atmlf Aini Sig **Statistics (Stats)**

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Sig **peakConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Sig **successfulConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Sig **failedConnections**

Access	Read: All Write: Illegal

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Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Sig **txPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Sig **rxPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Sig **currentPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Sig **peakPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.

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Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to-point connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Aini Sig VirtualChannelDescriptor (Vcd)

Groups	GROUP AtmIf Aini Sig Vcd Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor*

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AtmIf/n Aini Sig VirtualChannelDescriptor
AtmIf/n Iisp Sig VirtualChannelDescriptor
AtmIf/n Pnni Sig VirtualChannelDescriptor
AtmIf/n Pnni Rcc VirtualChannelDescriptor
AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor

This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).

Mib	AtmAini
Common Verbs	Help List Display Add DELete

GROUP Atmlf Aini Sig Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmAini
Values	3 6 7 8
Default	6
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Aini Sig Vcd atmServiceCategory (service)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.
Mib	AtmAini
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Aini Sig Vcd** **weight**

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Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmAini
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Aini Sig Vcd** **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video).

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Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video).

Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib	AtmAini
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf Aini Sig Vcd trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components. When ***disabled*** is selected, traffic shaping for this connection is disabled.
Mib	AtmAini
Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE AtmIf Aini Sig Vcd unshapedTransmitQueueing (unshap)

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Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*. When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmAini
Values	common sameAsCa
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Aini Sig Vcd** **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmAini

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Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE **AtmIf Aini Sig Vcd trafficDescParm (tdp)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2. When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2. When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to

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0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

COMPONENT Atmlf Aini Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate default]
Groups	GROUP Atmlf Aini Addr Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type* *AtmIf/n Pnni Address/address,type* *AtmIf/n Vpt/m Aini Address/address,type* *AtmIf/n Vpt/m Iisp Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* *AtmIf/n Vpt/m Pnni Address/address,type*

This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard ('?'), and a type. The type identifies whether the *Address* component is for

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a ***primary***, ***alternate***, ***registered***, or ***default*** address.

The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of
type ***default***.

The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib	AtmAini
Opt. Subcomp.	COMPONENT AtmIf Aini Addr TerminateSPvpAndSPvc (TermSP) COMPONENT AtmIf Aini Addr PnniInfo
Common Verbs	Help List Display Add DELete

GROUP AtmIf Aini Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Addr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.
Mib	AtmAini
Values	Signed (-1..104)

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Default	No default

ATTRIBUTE Atmlf Aini Addr **reachability (reach)**

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmAini
Values	internal exterior
Default	No default

COMPONENT Atmlf Aini Addr **TerminateSPvpAndSPvc (TermSP)**

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc* The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.
Mib	AtmAini
Common Verbs	Help List Display Add DELete

COMPONENT Atmlf Aini Addr **PnniInfo**

Groups	GROUP AtmIf Aini Addr PnniInfo Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Aini Addr/address,type PnniInfo* *AtmIf/n Iisp Addr/address,type PnniInfo* *AtmIf/n Uni Addr/address,type PnniInfo*

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AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.

Mib: AtmAini

Common Verbs: Help, List, Display, Add, DELete

GROUP AtmIf Aini Addr PnniInfo Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.

Mib: AtmAini

ATTRIBUTE AtmIf Aini Addr PnniInfo scope

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.

Mib: AtmAini

Values: Signed (-1..104)

Default: -1

ATTRIBUTE AtmIf Aini Addr PnniInfo reachability (reach)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is

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	directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmAini
Values	internal exterior
Default	internal

COMPONENT AtmIf Aini CallingAddressScreening (CallingAScr)

Groups	GROUP AtmIf Aini CallingAScr Provisioned (Prov) GROUP AtmIf Aini CallingAScr Statistics (Stat)
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n Iisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not provisioned, all call requests are accepted and no calling address screening takes place.
Mib	AtmAini
Opt. Subcomp.	COMPONENT AtmIf Aini CallingAScr Address (Addr)
Common Verbs	Help List Display Add DELete

GROUP AtmIf Aini CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini CallingAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***.

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	If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected If the value is ***disabled***, no calling address screening is performed.
Mib	AtmAini
Values	enabled disabled
Default	disabled

ATTRIBUTE **AtmIf Aini CallingAScr** **defaultInsertionAddress (defInsAddr)**

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	AtmAini
Values	String (0..20, Hex)
Default	""

GROUP **AtmIf Aini CallingAScr** **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmAini

ATTRIBUTE **AtmIf Aini CallingAScr** **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Atmlf Aini CallingAScr **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Atmlf Aini CallingAScr **unmatchedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

COMPONENT Atmlf Aini CallingAScr **Address (Addr)**

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that

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address is rejected.
For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib AtmAini

Common Verbs
Help
List
Display
Add
DELete

COMPONENT Atmlf Aini CalledAddressScreening (CalledAScr)

Groups GROUP AtmIf Aini CalledAScr Provisioned (Prov)
GROUP AtmIf Aini CalledAScr Statistics (Stat)

Scope Device

Description *AtmIf/n Aini CalledAddressScreening*
AtmIf/n Uni CalledAddressScreening
AtmIf/n Iisp CalledAddressScreening
This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.

Mib AtmAini

Opt. Subcomp. COMPONENT AtmIf Aini CalledAScr Address (Addr)

Common Verbs
Help
List
Display
Add
DELete

GROUP Atmlf Aini CalledAScr Provisioned (Prov)

Properties Provisioned

Description This attribute group contains the provisionable attributes for the *CalledAScr* component.

Mib AtmAini

ATTRIBUTE Atmlf Aini CalledAScr adminStatus

Access Read: All
Write: All

Description This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***.
If the value is ***enabled***, incoming SVC calls will be screened against

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provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected.
If the value is ***disabled***, no called address screening is performed.

Mib	AtmAini
Values	enabled disabled
Default	disabled

GROUP **AtmIf Aini CalledAScr** **Statistics (Stat)**

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmAini

ATTRIBUTE **AtmIf Aini CalledAScr** **acceptedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf Aini CalledAScr** **rejectedCalls**

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **AtmIf Aini CalledAScr** **unmatchedCalls**

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Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Aini CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	AtmAini
Common Verbs	Help List Display Add DELete

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COMPONENT AtmIf Aini PathTraceFilter (Ptf)

Groups	GROUP AtmIf Aini Ptf Criteria GROUP AtmIf Aini Ptf Operational (Oper) GROUP AtmIf Aini Ptf RecordControl (Record)
Scope	Device
Description	*AtmIf/n Aini PathTraceFilter* *AtmIf/n Iisp PathTraceFilter* *AtmIf/n Uni PathTraceFilter* *AtmIf/n Pnni PathTraceFilter* *AtmIf/n Vpt/vpi Aini PathTraceFilter* *AtmIf/n Vpt/vpi Iisp PathTraceFilter* *AtmIf/n Vpt/vpi Uni PathTraceFilter* *AtmIf/n Vpt/vpi Pnni PathTraceFilter* This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced. When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop,* and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared. Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted. The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.
Mib	AtmAini
Dyn. Subcomp.	COMPONENT AtmIf Aini Ptf PathTraceRecord (PTRecord)
Common Verbs	Help List Display Add DELete

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VERB START **AtmIf Aini Ptf**

Impact Service

Description

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP **AtmIf Aini Ptf**

Impact Service

Description

STOP AtmIf/n Aini PathTraceFilter
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

VERB CLEAR **AtmIf Aini Ptf**

Impact Service

Description

CLEAR AtmIf/n Aini PathTraceFilter
CLEAR AtmIf/n Iisp PathTraceFilter
CLEAR AtmIf/n Uni PathTraceFilter
CLEAR AtmIf/n Pnni PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter
CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP **AtmIf Aini Ptf** **Criteria**

Properties Operational

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Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmAini
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE AtmIf Aini Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmAini
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf callingPartyPrefix (clgPref)

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Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmAini
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Aini Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE Atmlf Aini Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE Atmlf Aini Ptf serviceCategory (svcCat)

Access	Read: All Write: All

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Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP Atmlf Aini Ptf **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Ptf **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmAini
Values	active inactive
Default	inactive

ATTRIBUTE Atmlf Aini Ptf **recordCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	AtmAini
Values	Decimal (0..200)

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Default	No default

ATTRIBUTE Atmlf Aini Ptf **matchedConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmAini
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Atmlf Aini Ptf **elapsedTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmAini
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE Atmlf Aini Ptf **timeRemaining**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmAini
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP Atmlf Aini Ptf **RecordControl (Record)**

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Ptf **traceTimeout**

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Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmAini
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE AtmIf Aini Ptf **maxTraceRecords (mRecords)**

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmAini
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Aini Ptf **PathTraceRecord (PTRecord)**

Groups	GROUP AtmIf Aini Ptf PTRecord Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord* This component represents the path trace record for the last failed connection against this filter.
Mib	AtmAini
Dyn. Subcomp.	COMPONENT AtmIf Aini Ptf PTRecord Hop
Common Verbs	Help List Display

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GROUP Atmlf Aini Ptf PTRecord **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Ptf PTRecord **status**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmAini
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE Atmlf Aini Ptf PTRecord **timeStamp**

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmAini
Values	Time (DHMS)
Default	No default

ATTRIBUTE Atmlf Aini Ptf PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.

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Mib	AtmAini
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmAini
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord **diagCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmAini
Values	String (0..8, ASCII)
Default	No default

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COMPONENT AtmIf Aini Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	GROUP AtmIf Aini Ptf PTRecord Hop Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmAini
Dyn. Subcomp.	COMPONENT AtmIf Aini Ptf PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP AtmIf Aini Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.

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Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmAini
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages.

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	The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmAini
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **portId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **portName**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE **AtmIf Aini Ptf PTRecord Hop** **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmAini
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE **AtmIf Aini Ptf PTRecord Hop** **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmAini
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE **AtmIf Aini Ptf PTRecord Hop** **blockedNodeId (bNodeId)**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Aini Ptf PTRecord Hop** **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Aini Ptf PTRecord Hop** **blockedLinkPortId (bPortId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **blockedLinkSucceedingNodeId (sNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **dstVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **dstDlci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmAini
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmAini
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop **specifiedPath**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	no yes

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Default	no

COMPONENT AtmIf Aini Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	GROUP AtmIf Aini Ptf PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information. All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmAini
Common Verbs	Help List Display

GROUP AtmIf Aini Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmAini
Values	Decimal (0..11)

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Default	No default

ATTRIBUTE Atmlf Aini Ptf PTRecord Hop Vsi **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmAini
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Aini Ptf PTRecord Hop Vsi **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmAini
Values	String (1..8, Hex)
Default	No default

COMPONENT Atmlf Aini **PathTraceTestConnection (Ptt)**

Groups	GROUP Atmlf Aini Ptt Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini PathTraceTestConnection* *Atmlf/n Iisp PathTraceTestConnection* *Atmlf/n Uni PathTraceTestConnection* *Atmlf/n Pnni PathTraceTestConnection* *Atmlf/n Vpt/vpi Aini PathTraceTestConnection* *Atmlf/n Vpt/vpi Iisp PathTraceTestConnection* *Atmlf/n Vpt/vpi Uni PathTraceTestConnection* *Atmlf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test

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connection responds with the trace results collected during a complete or partial trace.

Mib — AtmAini

Common Verbs — Help, List, Display

VERB TRACE Atmlf Aini Ptt

Impact — Passive

Description — *TRACE AtmIf/n Aini AtmPathTraceTest*
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf Aini Ptt Operational (Oper)

Properties — Operational

Description — This group contains the operational attributes for the *AtmPathTraceTest* component.

Mib — AtmAini

ATTRIBUTE Atmlf Aini Ptt traceCrankback

Access — Read: All
Write: All

Description — This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.

Mib — AtmAini

Values — no
yes

Default — no

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ATTRIBUTE Atmlf Aini Ptt **txTrafficDescType (txTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmAini
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE Atmlf Aini Ptt **rxTrafficDescType (rxTdt)**

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	AtmAini
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE Atmlf Aini Ptt **atmServiceCategory (service)**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications. The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS. The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.
Mib	AtmAini
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE **Atmlf Aini Ptt** **fwdQosClass (fwdQos)**

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmAini
Values	0 1 2 3 4
Default	0

ATTRIBUTE **Atmlf Aini Ptt** **bwdQosClass (bwdQos)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

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Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmAini

Values:
0
1
2
3
4
sameAsFwd

Default: sameAsFwd

ATTRIBUTE Atmlf Aini Ptt bearerClassBbc (bcBbc)

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting

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an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmAini

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Aini Ptt transferCapabilityBbc (tcBbc)

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. UNI 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

NotApplicable specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to

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derivedFromServiceCategory or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmAini

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Aini Ptt **clippingBbc (cBbc)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

Mib: AtmAini

Values:
no
yes

Default: no

ATTRIBUTE Atmlf Aini Ptt **bestEffort**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

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	The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmAini
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Aini Ptt **testCalledAddress**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmAini
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptt **testCalledVpiVci**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Aini Ptt **testSpecifiedPath**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmAini

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Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Aini Ptt **bwdQosParameters (bqp)**

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE Atmlf Aini Ptt **fwdQosParameters (fqp)**

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and

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nrt-VBR connections. It is signaled through the extended QoS information element.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE **AtmIf Aini Ptt** **txTrafficDescParm (txTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR.

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Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if

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there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **AtmIf Aini Ptt** **rxTrafficDescParm (rxTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2. When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be

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greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)

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Default	([5] 0)

COMPONENT Atmlf Aini ServiceTrace (SrvTrace)

Groups	GROUP AtmIf Aini SrvTrace Operational
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmAiniTrace
Common Verbs	Help List Display Add DELete

VERB Start Atmlf Aini SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop Atmlf Aini SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP Atmlf Aini SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.

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Mib	AtmAiniTrace

ATTRIBUTE AtmIf Aini SrvTrace **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmAiniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini SrvTrace **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmAiniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Aini SrvTrace **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmAiniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Aini SrvTrace **session**

Access	Read only

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Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmAiniTrace
Values	The name of the component
Default	No default

COMPONENT Atmlf Aini Reroute

Groups	GROUP AtmIf Aini Reroute LocalOperational (LOper) GROUP AtmIf Aini Reroute GlobalOperational (GOper) GROUP AtmIf Aini Reroute Statistics (Stats)
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmAini
Subcomponents	COMPONENT AtmIf Aini Reroute Ov
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE Atmlf Aini Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Uni Reroute* *Optimize [-all] AtmIf/n Aini Reroute* *Optimize [-all] AtmIf/n Iisp Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Uni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Aini Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Iisp Reroute* This command triggers path optimization for the connection segments managed by the Reroute component. By default, only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection. The -all option causes all connection segments subscribed to path optimization to be considered. Using the Optimize command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP Atmlf Aini Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute localEligibleRecoveredCon (lerc)

Access	Read only

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Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **localIneligibleRecoveredCon (lirc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **localLastRrCauseCode (lrrcc)**

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **localPathsOptimized (lPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Aini Reroute **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.

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Mib	AtmAini

ATTRIBUTE Atmlf Aini Reroute **globalSubscribedConnections (gsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **globalEligibleRecoveredCon (gerc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **globalIneligibleRecoveredCon (girc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **globalLastRrCauseCode (grrcc)**

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **globalPathsOptimized (gPathsOpt)**

Access	Read only

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Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Aini Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Atmlf Aini Reroute **totalGlobalConnectionRecoveries (tGConRec)**

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **totalGlobalFailedRecoveries (gFailedRec)**

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **totalGlobalPathOptimizations (tGPathOpt)**

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Aini Reroute **totalOptimizationPasses (optPass)**

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

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COMPONENT AtmIf Aini Reroute Ov

Groups	GROUP AtmIf Aini Reroute Ov Provisioned (Prov) GROUP AtmIf Aini Reroute Ov LocalProvisioned (LProv) GROUP AtmIf Aini Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmAini
Common Verbs	Help List Display

GROUP AtmIf Aini Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.

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globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
localEbr: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmAini

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Atmlf Aini Reroute Ov **numOptAttempts**

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmAini

Values:
Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default: sameAs

ATTRIBUTE Atmlf Aini Reroute Ov **moduleOptimizationConnections**

Access: Read and write

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Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified: ***sameAsARtgPnniReroute***: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute. ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection ***allSubscribed***: All connection segments subscribed to path optimization are considered.
Mib	AtmAini
Values	none recoveredOnly allSubscribed sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE **AtmIf Aini Reroute Ov** **switchoverMechanism**

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute. ***standard***: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”. ***rcl***: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.
Mib	AtmAini
Values	standard rcl sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

GROUP **AtmIf Aini Reroute Ov** **LocalProvisioned (LProv)**

Properties	Provisioned

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Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Reroute Ov **localConnectionRecoverySubscr (lConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute:*** If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values. ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.
Mib	AtmAini
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Aini Reroute Ov **localPathOptimizationSubscr (lPathOpt)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or

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localOnly protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib	AtmAini
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

GROUP Atmlf Aini Reroute Ov **GlobalProvisioned (GProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	AtmAini

ATTRIBUTE Atmlf Aini Reroute Ov **globalConnectionRecoverySubscr (gConRec)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection

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recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib — AtmAini

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Aini Reroute Ov **globalPathOptimizationSubscr (gPathOpt)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP

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	connection segments request subscription to global or EBR path optimization. ***transitSpvcSpvp***: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.
Mib	AtmAini
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT Atmlf Pnni

Groups	GROUP AtmIf Pnni Provisioned (Prov) GROUP AtmIf Pnni AdminWeights GROUP AtmIf Pnni AccountingOptions (AcctOpt) GROUP AtmIf Pnni Operational GROUP AtmIf Pnni Threshold GROUP AtmIf Pnni TraceProv (Trace) GROUP AtmIf Pnni LrbgProv (Lrbg)
Scope	Device
Description	*AtmIf/n Pnni* This component represents an ATM Private Network-Network Interface (PNNI) interface. If this component is provisioned, the *Uni, Aini,* or *Iisp c*omponent cannot be provisioned under the same *AtmIf* component. Also, the *Artg Pnni* component and the *ConfiguredNode* component corresponding to the participation of the this node in a lowest level peer group must already exist before provisioning *Pnni* under an *AtmIf*

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component. If this component is deleted, then all associated Vcc components are deleted.

Mib	AtmPnni
Subcomponents	COMPONENT AtmIf Pnni Signalling (Sig) COMPONENT AtmIf Pnni RoutingControlChannel (Rcc)
Opt. Subcomp.	COMPONENT AtmIf Pnni PathTraceFilter (Ptf) COMPONENT AtmIf Pnni ServiceTrace (SrvTrace)
Dyn. Subcomp.	COMPONENT AtmIf Pnni PathTraceTestConnection (Ptt)
Dyn. Subcomp.	COMPONENT AtmIf Pnni Address (Addr) COMPONENT AtmIf Pnni Reroute
Common Verbs	Help List Display Add DELete

GROUP Atmlf Pnni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni softPvpAndPvcRetryPeriod

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmPnni
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE Atmlf Pnni softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take

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	from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmPnni
Values	Decimal (0; 50..20000)
Units	msec
Default	0

GROUP Atmlf Pnni AdminWeights

Properties	Provisioned
Description	This group contains the provisionable administrative weights for the *Pnni* component. These weights will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni cbrWeight (cbrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Constant Bit Rate (CBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE Atmlf Pnni rtVbrWeight (rtVbrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Real-Time Variable Bit Rate (RT-VBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)

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Default	5040

ATTRIBUTE Atmlf Pnni nrtVbrWeight (nrtVbrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Non Real-Time Variable Bit Rate (NRT-VBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE Atmlf Pnni ubrWeight (ubrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Unspecified Bit Rate (UBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

GROUP Atmlf Pnni AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations:

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- on a TODA changeover if TODA is enabled;
- every 12 hours (per connection) if TODA is disabled;
- on every call clear (a call record with final cell counts).

If none of the reasons is present, then accounting will be suppressed.

The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.

Mib: AtmPnni

Set of:
bill
test
study
audit
force

Default: No default

ATTRIBUTE Atmlf Pnni accountConnectionType (act)

Access:
Read: All
Write: All

Description: This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records.

If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***.

If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.

Mib: AtmPnni

Values:
origTerm
intermediate

Default: intermediate

ATTRIBUTE Atmlf Pnni accountClass (acl)

Access:
Read: All
Write: All

Description: This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator.

Its value is simply recorded in the accounting records generated by this

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	interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmPnni
Values	Decimal (0..255)
Default	0

ATTRIBUTE Atmlf Pnni serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmPnni
Values	Decimal (0..255)
Default	0

GROUP Atmlf Pnni Operational

Properties	Operational
Description	This group contains the operational attributes for a *Pnni* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni portId

Access	Read: All Write: Illegal
Description	This attribute indicates the port id of the PNNI interface, which is the parent *AtmIf*'s instance number.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Pnni Threshold

Properties	Provisioned
Description	This group contains the provisionable attributes for the change threshold for the *Atmif Pnni* component.
Mib	AtmPnni

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ATTRIBUTE Atmlf Pnni avcrMt

Access	Read: All Write: All
Description	This attribute, multiplied by the Maximum Cell Rate, specifies the minimum threshold used in the algorithms that determine significant change for average cell rate parameters for this interface. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrMt*.
Mib	AtmPnni
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

ATTRIBUTE Atmlf Pnni avcrPm

Access	Read: All Write: All
Description	This attribute multiplied by the current Available Cell Rate (AvCr) specifies the threshold used in the algorithms that determine significant change for AvCR parameters for this interface. If the resulting threshold is lower than the AvCr, the minimum threshold (*Atmif pnni avcrMt*) is used. Increasing the value of the attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrPm*.
Mib	AtmPnni
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

GROUP Atmlf Pnni TraceProv (Trace)

Properties	Provisioned
Description	This group contains the provisionable trace attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni traceDestination (tDst)

Access	Read: All Write: All

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Description	This attribute specifies if this node is a trace destination. A PNNI interface may be a trace destination interface. By default, it's not. If an operator wants to trace only until this PNNI interface, this interface can be set to trace destination by setting this attribute.
Mib	AtmPnni
Values	no yes
Default	no

GROUP AtmIf Pnni LrbgProv (Lrbg)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni loadReBalancingGroupLink (lrbgLink)

Access	Read: All Write: Illegal
Description	This attribute indicates the Artg Pnni Lrbg Link component associated with this particular Atmif Pnni component.
Mib	AtmPnni
Values	Link
Default	No default

COMPONENT AtmIf Pnni Signalling (Sig)

Groups	GROUP AtmIf Pnni Sig Provisioned (Prov) GROUP AtmIf Pnni Sig OsiState (State) GROUP AtmIf Pnni Sig Operational (Oper) GROUP AtmIf Pnni Sig Statistics (Stats)
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling*

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This component represents the signaling entities for the interface.

Mib	AtmPnni
Opt. Subcomp.	COMPONENT AtmIf Pnni Sig VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP AtmIf Pnni Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Pnni Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmPnni

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Values	none nativeE164 nsap
Default	none

ATTRIBUTE Atmlf Pnni Sig operatingMode

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmPnni
Values	normal provisionedOnly
Default	normal

GROUP Atmlf Pnni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — AtmPnni

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Atmlf Pnni Sig operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — AtmPnni

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Atmlf Pnni Sig usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — AtmPnni

Values — idle
active (activ)
busy

Default — idle

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GROUP Atmlf Pnni Sig Operational (Oper)

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Sig lastTxCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Pnni Sig lastTxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmPnni
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE Atmlf Pnni Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Pnni Sig lastRxDiagCode

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Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmPnni
Values	Hex (H.0..H.ff)
Default	No default

GROUP Atmlf Pnni Sig **Statistics (Stats)**

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Sig **peakConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig **successfulConnections**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig **failedConnections**

Access	Read: All Write: Illegal

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Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig **txPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig **rxPdus**

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig **currentPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig **peakPmpConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.

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Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to-point connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Pnni Sig VirtualChannelDescriptor (Vcd)

Groups	GROUP Atmlf Pnni Sig Vcd Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor*

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AtmIf/n Aini Sig VirtualChannelDescriptor
AtmIf/n Iisp Sig VirtualChannelDescriptor
AtmIf/n Pnni Sig VirtualChannelDescriptor
AtmIf/n Pnni Rcc VirtualChannelDescriptor
AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor

This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).

Mib: AtmPnni

Common Verbs:
Help
List
Display
Add
DELete

GROUP Atmlf Pnni Sig Vcd Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable traffic attributes for a control channel.

Mib: AtmPnni

ATTRIBUTE Atmlf Pnni Sig Vcd trafficDescType (tdt)

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib: AtmPnni

Values:
3
6
7
8

Default: 6

Flags: HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Sig Vcd atmServiceCategory (service)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.
Mib	AtmPnni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Pnni Sig Vcd** **weight**

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Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmPnni
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Pnni Sig Vcd** **qosClass (qos)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video).

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Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video).

Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmPnni

Values:
0
1
2
3
4

Default: 2

Flags: HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Sig Vcd **trafficShaping (trShaping)**

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib: AtmPnni

Values:
disabled
sameAsCa

Default: disabled

Flags: HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Sig Vcd **unshapedTransmitQueueing (unshap)**

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Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*. When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni
Values	common sameAsCa
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Pnni Sig Vcd** **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni

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Values	disabled sameAsCa
Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Sig Vcd **trafficDescParm (tdp)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2. When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2. When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to

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0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

COMPONENT Atmlf Pnni RoutingControlChannel (Rcc)

Groups	GROUP AtmIf Pnni Rcc Provisioned (Prov) GROUP AtmIf Pnni Rcc HelloParms (HlParms) GROUP AtmIf Pnni Rcc OsiState (State) GROUP AtmIf Pnni Rcc Operational (Oper) GROUP AtmIf Pnni Rcc Statistics (Stats)
Scope	Device
Description	*AtmIf/n Pnni RoutingControlChannel* *AtmIf/n Vpt/m Pnni RoutingControlChannel* This component represents the Routing Control Channel (RCC)

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	associated with a PNNI interface. The RCC is used to exchange routing information between nodes in a peer group.
Mib	AtmPnni
Opt. Subcomp.	COMPONENT AtmIf Pnni Rcc VirtualChannelDescriptor (Vcd)
Common Verbs	Help List Display

GROUP AtmIf Pnni Rcc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the generic provisionable attributes of an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Rcc vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the VCI for the Routing Control Channel (RCC). The value should not be changed from the default of 18 unless absolutely necessary. If a different VCI is specified, ensure that the RCC at the far end is provisioned to use the same VCI, otherwise the RCC will not come up.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	18

ATTRIBUTE AtmIf Pnni Rcc aggregationToken

Access	Read: All Write: All
Description	This attribute specifies the aggregation token for this interface at the local end of the link. The aggregation tokens at both ends are use to form the *derivedAggregationToken* for the link. The aggregation token controls how links are aggregated together. Except for the lowest level nodes, links between two logical nodes are aggregated together if they have the same aggregation token. Link aggregation is not done at the lowest level node, except in the degenerate node situation, where the lowest level node is a neighbor to an LGN. The value is ignored for links having a type value of ***unknown*** or ***lowestLevelHorizLink***.
Mib	AtmPnni

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Values	Decimal (0..4294967295)
Default	0

GROUP Atmlf Pnni Rcc HelloParms (HIParms)

Properties	Provisioned
Description	This group contains the provisionable Hello protocol parameters for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Rcc helloHoldDown (hhd)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the rate at which this node sends out Hello packets. It specifies the default minimum length of time between successive Hellos used by routing control channels on this node. A provisioning check is made to ensure that this value cannot be greater than *helloInterval*. A value of 0 specifies that the value provisioned for the *helloHoldDown* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni
Values	Decimal (0.0..65535.0)
Units	seconds
Default	0.0

ATTRIBUTE Atmlf Pnni Rcc helloInterval (hli)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the default duration of the Hello Timer for routing control channels on this node. Every *helloInterval* seconds, this node sends out a Hello packet to the neighbor node, subject to the *helloHoldDown* timer having expired at least once since the last Hello packet was sent. A provisioning check is made to ensure that this value cannot be less than *helloHoldDown*. A value of 0 specifies that the value provisioned for the *helloInterval* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni

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Values	Decimal (0..65535)
Units	seconds
Default	0

ATTRIBUTE Atmlf Pnni Rcc helloInactivityFactor (hif)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the number of Hello intervals allowed to pass without receiving a Hello from a neighbor, before an attempt is made to stage the RCC to that neighbor. The hello inactivity timer is enabled when the *helloState* is one of ***oneWayInside***, ***twoWayInside***, ***oneWayOutside***, ***twoWayOutside*** or ***commonOutside***. A value of 0 specifies that the value provisioned for the *helloInactivityFactor* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	0

GROUP Atmlf Pnni Rcc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Rcc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — AtmPnni

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Atmlf Pnni Rcc operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — AtmPnni

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Atmlf Pnni Rcc usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — AtmPnni

Values — idle
active (activ)
busy

Default — idle

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GROUP Atmlf Pnni Rcc Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Rcc type

Access	Read: All Write: Illegal
Description	This attribute indicates the role of this link in the PNNI hierarchy. The following values are possible: ***unknown***: the Hello protocol has not yet determined the role of the link. ***lowestLevelHorizLink***: the link is a horizontal link between two lowest level nodes. ***lowestLevelOutsideLink***: the link is an outside link between two border nodes. ***horizontalLinkToLgn***: the link is a horizontal link to a Logical Group Node (LGN). ***uplink***: the link is a uplink to a higher level LGN.
Mib	AtmPnni
Values	unknown lowestLevelHorizLink lowestLevelOutsideLink horizontalLinkToLGN uplink
Default	No default

ATTRIBUTE Atmlf Pnni Rcc negotiatedVersion

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI version negotiated with the neighbor node.
Mib	AtmPnni
Values	unsupported version1point0
Default	No default

ATTRIBUTE Atmlf Pnni Rcc helloState

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Access	Read: All Write: Illegal
Description	This attribute indicates the state of the Hello protocol exchange over this link. The following are the possible values for this attribute: ***down***: the link is down. No PNNI routing packets are sent or received over such a link. This is the initial state of the Hello Finite State Machine, and can also be reached when lower-level protocols have indicated that the link is not usable. ***attempt***: no Hello packets or Hello packets, with mismatched information, have been received recently from the neighbor. Attempts are made to contact the neighbor node by sending out Hello packets every *helloInterval* seconds. ***oneWayInside***: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of the same peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero. A Hello packet is sent to the neighbor and the Hello timer is restarted. ***twoWayInsid***e: Bidirectional communication over this link between this node and the neighbor node has been achieved. ***oneWayOutside***: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of a different peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero. ***twoWayOutside***: Hello packets have recently been received from the neighbor indicating that the neighbor node belongs to a different peer group. The correct remote node ID and remote port ID fields were included in the Hello packet, but the nodal hierarchy list did not include any common peer group. This state can also be reached if a hierarchy mismatch occurs while in the ***commonOutside*** state. ***commonOutside***: A common level of the routing hierarchy has been found, in addition to achieving full bidirectional communication between the two nodes.
Mib	AtmPnni
Values	notApplicable down attempt oneWayInside twoWayInside oneWayOutside twoWayOutside commonOutside

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Default	No default

ATTRIBUTE Atmlf Pnni Rcc **remoteNodeId**

Access	Read: All Write: Illegal
Description	This attribute indicates the node id at the far end of the link.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE Atmlf Pnni Rcc **remotePortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the Port ID of the neighboring node, which is an unsigned integer of 32 bits. When the remote end of a PNNI physical link is terminated by a Nortel Networks Multiservice Switch, the first 16 bits of the hex encoded format represent the *AtmIf* instance of the PNNI link of the remote node, the next 12 bits correspond to the VPI of the PNNI link and the last 4 bits are unspecified (that is, it provide no value for physical interpretation).
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Rcc **derivedAggregationToken**

Access	Read: All Write: Illegal
Description	This attribute indicates the derived aggregation token value used on this link. The algorithm for computing the value of the derived aggregation token is: 1. If neighbors exchange identical values of the configured aggregation token, that value is the derived aggregation token value. 2. If the configured aggregation token value of one neighbor is zero (default), and that of the other neighbor is non-zero, the non-zero value is the derived aggregation token value. 3. If the configured aggregation token values of the neighbors are different and both non-zero, the derived aggregation token value is zero. The attribute is not displayed for links having a type value of ***unknown*** or ***lowestLevelHorizLink***.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Atmlf Pnni Rcc **remoteNodeName**

Access	Read: All Write: Illegal
Description	This attribute indicates the node name and the hierarchy level for the node at the far end of the link. A typical value for this attribute has the following form: ***OBELIX@96***. Here, ***OBELIX*** is the node name and ***96*** is the hierarchy level for the up node. The ***@*** symbol is used to separate the node name from the hierarchy level in the display. The value of this attribute is an empty string if the far end is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (1..16, ASCII)
Default	No default

ATTRIBUTE Atmlf Pnni Rcc **remoteInterfaceName**

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name of the node at the far end of the link. When the far end of the link is a Nortel Networks Multiservice Switch, this attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string if the far end is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (0..19, ASCII)
Default	No default

GROUP Atmlf Pnni Rcc **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistical attributes for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Rcc **helloPacketsRx**

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Access	Read: All Write: Illegal
Description	This attribute counts the total number of Hello packets received across this RCC, including bad and mismatched Hello packets. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Rcc **helloPacketsTx**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Hello packets transmitted across this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Rcc **mismatchedHelloPacketsRx**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of mismatched Hello packets received over this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Rcc **badHelloPacketsRx**

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bad Hello packets received over this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Pnni Rcc **VirtualChannelDescriptor (Vcd)**

Groups	GROUP AtmIf Pnni Rcc Vcd Provisioned (Prov)

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Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmPnni
Common Verbs	Help List Display Add DELete

GROUP Atmlf Pnni Rcc Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Rcc Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmPnni
Values	3 6 7 8

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Default	6
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Rcc Vcd **atmServiceCategory (service)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.
Mib	AtmPnni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)

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Default	rtVariableBitRate
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Rcc Vcd **weight**

Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmPnni
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Rcc Vcd **qosClass (qos)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmPnni
Values	0 1 2 3 4
Default	2
Flags	HCA_SUPPORT

ATTRIBUTE **Atmlf Pnni Rcc Vcd** **trafficShaping (trShaping)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components. When ***disabled*** is selected, traffic shaping for this connection is disabled.
Mib	AtmPnni
Values	disabled sameAsCa

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Default	disabled
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Rcc Vcd **unshapedTransmitQueueing (unshap)**

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator*. When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni
Values	common sameAsCa
Default	sameAsCa
Flags	HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Rcc Vcd **usageParameterControl (upc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled.

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The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib — AtmPnni

Values — disabled
sameAsCa

Default — disabled

Flags — HCA_SUPPORT

ATTRIBUTE Atmlf Pnni Rcc Vcd **trafficDescParm (tdp)**

Access — Read: All
Write: All

Criticality — Component

Description — This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to

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parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)
Flags	HCA_SUPPORT

COMPONENT Atmlf Pnni Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate registered default]
Groups	GROUP AtmIf Pnni Addr Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type* *AtmIf/n Pnni Address/address,type* *AtmIf/n Vpt/m Aini Address/address,type* *AtmIf/n Vpt/m Iisp Address/address,type*

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AtmIf/n Vpt/m Uni Address/address,type
AtmIf/n Vpt/m Pnni Address/address,type

This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard ('?'), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address.

The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of
type ***default***.

The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib	AtmPnni
Opt. Subcomp.	COMPONENT AtmIf Pnni Addr TerminateSPvpAndSPvc (TermSP) COMPONENT AtmIf Pnni Addr PnniInfo
Common Verbs	Help List Display Add DELete

GROUP AtmIf Pnni Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Addr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no

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PnniInfo subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.

Mib AtmPnni

Values Signed (-1..104)

Default No default

ATTRIBUTE Atmlf Pnni Addr reachability (reach)

Access Read: All
Write: Illegal

Description This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib AtmPnni

Values internal
exterior

Default No default

COMPONENT Atmlf Pnni Addr TerminateSPvpAndSPvc (TermSP)

Scope Device

Description *AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc*
AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc

The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib AtmPnni

Common Verbs Help
List
Display
Add
DELete

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COMPONENT AtmIf Pnni Addr PnniInfo

Groups	GROUP AtmIf Pnni Addr PnniInfo Provisioned (Prov)
Scope	Device
Description	*AtmIf/n Aini Addr/address,type PnniInfo* *AtmIf/n Iisp Addr/address,type PnniInfo* *AtmIf/n Uni Addr/address,type PnniInfo* *AtmIf/n Pnni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Aini Addr/address,type PnniInfo* *AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo* *AtmIf/n Vpt/m Uni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo* This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.
Mib	AtmPnni
Common Verbs	Help List Display Add DELete

GROUP AtmIf Pnni Addr PnniInfo Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Addr PnniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmPnni
Values	Signed (-1..104)
Default	-1

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ATTRIBUTE AtmIf Pnni Addr PnniInfo reachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmPnni
Values	internal exterior
Default	internal

COMPONENT AtmIf Pnni PathTraceFilter (Ptf)

Groups	GROUP AtmIf Pnni Ptf Criteria GROUP AtmIf Pnni Ptf Operational (Oper) GROUP AtmIf Pnni Ptf RecordControl (Record)
Scope	Device
Description	*AtmIf/n Aini PathTraceFilter* *AtmIf/n Iisp PathTraceFilter* *AtmIf/n Uni PathTraceFilter* *AtmIf/n Pnni PathTraceFilter* *AtmIf/n Vpt/vpi Aini PathTraceFilter* *AtmIf/n Vpt/vpi Iisp PathTraceFilter* *AtmIf/n Vpt/vpi Uni PathTraceFilter* *AtmIf/n Vpt/vpi Pnni PathTraceFilter* This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced. When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop,* and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared. Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

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The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib AtmPnni

Dyn. Subcomp. COMPONENT AtmIf Pnni Ptf PathTraceRecord (PTRecord)

Common Verbs
Help
List
Display
Add
DELete

VERB START **AtmIf Pnni Ptf**

Impact Service

Description

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP **AtmIf Pnni Ptf**

Impact Service

Description

STOP AtmIf/n Aini PathTraceFilter
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

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VERB CLEAR Atmlf Pnni Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP Atmlf Pnni Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmPnni
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

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ATTRIBUTE Atmlf Pnni Ptf **calledPartyPrefix (cldPref)**

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmPnni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf **callingPartyPrefix (clgPref)**

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmPnni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf **connectionType (type)**

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE Atmlf Pnni Ptf **connectionConfiguration (config)**

Access	Read: All Write: All

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Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE Atmlf Pnni Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP Atmlf Pnni Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Ptf state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmPnni
Values	active inactive

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Default	inactive

ATTRIBUTE Atmlf Pnni Ptf **recordCount**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	AtmPnni
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf **matchedConnections**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmPnni
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf **elapsedTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmPnni
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE Atmlf Pnni Ptf **timeRemaining**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmPnni
Values	Decimal (0..70560)

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Units	minutes
Default	No default

GROUP Atmlf Pnni Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Ptf traceTimeout

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmPnni
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE Atmlf Pnni Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmPnni
Values	Decimal (1..200)
Default	2

COMPONENT Atmlf Pnni Ptf PathTraceRecord (PTRecord)

Groups	GROUP Atmlf Pnni Ptf PTRecord Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini Ptf PTRecord* *Atmlf/n Iisp Ptf PTRecord* *Atmlf/n Uni Ptf PTRecord* *Atmlf/n Pnni Ptf PTRecord* *Atmlf/n Vpt/n Aini Ptf PTRecord* *Atmlf/n Vpt/n Iisp Ptf PTRecord*

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AtmIf/n Vpt/n Uni Ptf PTRecord
AtmIf/n Vpt/n Pnni Ptf PTRecord

This component represents the path trace record for the last failed connection against this filter.

Mib	AtmPnni
Dyn. Subcomp.	COMPONENT AtmIf Pnni Ptf PTRecord Hop
Common Verbs	Help List Display

GROUP AtmIf Pnni Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally**:* The trace completed normally. ***Incomplete**:* Partial trace returned. ***Exceeded information element length limitations**:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations**:* The message length exceeded the maximum allowed size.
Mib	AtmPnni
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord timeStamp

Access	Read: All Write: Illegal

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Description	This attribute records the date and time of when the trace is completed.
Mib	AtmPnni
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord **srcPortId**

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmPnni
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord **srcPortName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmPnni
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord **causeCode**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord **diagCode**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmPnni
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Pnni Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	GROUP AtmIf Pnni Ptf PTRecord Hop Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmPnni
Dyn. Subcomp.	COMPONENT AtmIf Pnni Ptf PTRecord Hop VendorSpecificInfo (Vsi)
Common Verbs	Help List Display

GROUP AtmIf Pnni Ptf PTRecord Hop Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop **ingressVpiVci (vpiVci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop **ingressDlci (dlci)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop **ingressCallReference (callref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value

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Mib	AtmPnni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop **ingressEndPointReference (epref)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmPnni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop **nodeId**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop **nodeName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop **portId**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop **portName**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop **pnniTraceContRefusalIndPresent (refusal)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop **crankbackDestNodeIndPresent (dest)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback

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	Received at Trace Destination Node" indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop **pnniCrankbackGapIndPresent (gap)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the "PNNI Crankback Gap" indicator is present. The "PNNI Crankback Gap" indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop **crankBackCause (cause)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmPnni
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop **blockedTransitType (type)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type.

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	This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmPnni
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE **AtmIf Pnni Ptf PTRecord Hop** **blockedNodeId (bNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Pnni Ptf PTRecord Hop** **blockedLinkPrecedingNodeId (pNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Pnni Ptf PTRecord Hop** **blockedLinkPortId (bPortId)**

Access	Read: All Write: Illegal
Criticality	Component

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Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE **AtmIf Pnni Ptf PTRecord Hop** **blockedLinkSucceedingNodeId (sNodeId)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE **AtmIf Pnni Ptf PTRecord Hop** **dstVpiVci**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE **AtmIf Pnni Ptf PTRecord Hop** **dstDlci**

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Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop **dstCallReference (dcr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmPnni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop **dstEndPointReference (depr)**

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmPnni
Values	Hex (H.0..H.ffff)
Default	No default

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ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	no yes
Default	no

COMPONENT AtmIf Pnni Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	GROUP AtmIf Pnni Ptf PTRecord Hop Vsi Operational (Oper)
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information. All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmPnni
Common Verbs	Help List Display

GROUP AtmIf Pnni Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop Vsi **length**

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmPnni
Values	Decimal (0..11)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop Vsi **organizationUniqueId (oui)**

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE Atmlf Pnni Ptf PTRecord Hop Vsi **data**

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmPnni
Values	String (1..8, Hex)
Default	No default

COMPONENT Atmlf Pnni **PathTraceTestConnection (Ptt)**

Groups	GROUP Atmlf Pnni Ptt Operational (Oper)
Scope	Device
Description	*Atmlf/n Aini PathTraceTestConnection* *Atmlf/n Iisp PathTraceTestConnection* *Atmlf/n Uni PathTraceTestConnection* *Atmlf/n Pnni PathTraceTestConnection* *Atmlf/n Vpt/vpi Aini PathTraceTestConnection* *Atmlf/n Vpt/vpi Iisp PathTraceTestConnection* *Atmlf/n Vpt/vpi Uni PathTraceTestConnection*

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AtmIf/n Vpt/vpi Pnni PathTraceTestConnection

This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface.

The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.

Mib: AtmPnni

Common Verbs:
Help
List
Display

VERB TRACE **AtmIf Pnni Ptt**

Impact: Passive

Description:
TRACE AtmIf/n Aini AtmPathTraceTest
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP **AtmIf Pnni Ptt** **Operational (Oper)**

Properties: Operational

Description: This group contains the operational attributes for the *AtmPathTraceTest* component.

Mib: AtmPnni

ATTRIBUTE **AtmIf Pnni Ptt** **traceCrankback**

Access:
Read: All
Write: All

Description: This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is

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recorded. If the connection fails to reached the destination, no path information is returned.

Mib: AtmPnni

Values:
no
yes

Default: no

ATTRIBUTE Atmlf Pnni Ptt txTrafficDescType (txTdt)

Access:
Read: All
Write: All

Description: This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.

Mib: AtmPnni

Values:
1
2
3
4
5
6
7
8
9

Default: 1

ATTRIBUTE Atmlf Pnni Ptt rxTrafficDescType (rxTdt)

Access:
Read: All
Write: All

Description: This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute

When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.

Mib: AtmPnni

Values:
1
2
3
4
5
6

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	7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE Atmlf Pnni Ptt atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications. The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS. The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.
Mib	AtmPnni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr)

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nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default — unspecifiedBitRate

ATTRIBUTE Atmlf Pnni Ptt **fwdQosClass (fwdQos)**

Access — Read: All
Write: All

Criticality — Component

Description — This attribute specifies the quality of service for the forward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib — AtmPnni

Values — 0
1
2
3
4

Default — 0

ATTRIBUTE Atmlf Pnni Ptt **bwdQosClass (bwdQos)**

Access — Read: All
Write: All

Criticality — Component

Description — This attribute specifies the quality of service for the backward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

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Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmPnni

Values:
0
1
2
3
4
sameAsFwd

Default: sameAsFwd

ATTRIBUTE Atmlf Pnni Ptt **bearerClassBbc (bcBbc)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on

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it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmPnni

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Pnni Ptt **transferCapabilityBbc (tcBbc)**

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. UNI 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

NotApplicable specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

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The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmPnni

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Atmlf Pnni Ptt clippingBbc (cBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

Mib: AtmPnni

Values:
no
yes

Default: no

ATTRIBUTE Atmlf Pnni Ptt bestEffort

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this

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connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmPnni
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE Atmlf Pnni Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmPnni
Values	String (20, Hex)
Default	No default

ATTRIBUTE Atmlf Pnni Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE Atmlf Pnni Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component

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Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmPnni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Atmlf Pnni Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE Atmlf Pnni Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the

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end-to-end transit delay information element.

The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE **Atmlf Pnni Ptt** **txTrafficDescParm (txTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP

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equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

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For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE **Atmlf Pnni Ptt** **rxTrafficDescParm (rxTdp)**

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2. When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for

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CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

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Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT Atmlf Pnni Reroute

Groups	GROUP AtmIf Pnni Reroute DomainOperational (DOper) GROUP AtmIf Pnni Reroute LocalOperational (LOper) GROUP AtmIf Pnni Reroute GlobalOperational (GOper) GROUP AtmIf Pnni Reroute Statistics (Stats)
Scope	Device
Description	*AtmIf/n Pnni Reroute* *AtmIf/n Vpt/vpi Pnni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmPnni
Subcomponents	COMPONENT AtmIf Pnni Reroute Ov
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE **AtmIf Pnni Reroute**

Impact	Service
Description	*Optimize [-all] AtmIf/n Pnni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Pnni Reroute* This command triggers path optimization for the connection segments managed by the *Reroute* component. By default, only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection. The *-all* option causes all connection segments subscribed to path optimization to be considered. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP **AtmIf Pnni Reroute** **DomainOperational (DOper)**

Properties	Operational
Description	This group contains the operational attributes specific to rerouting activities on a PNNI interface.
Mib	AtmPnni

ATTRIBUTE **AtmIf Pnni Reroute** **localDomainLink (domain)**

Access	Read only
Description	This attribute indicates the local PNNI domain link type. One of the following values is indicated: ***intraDomainLink***: The PNNI interface is not a local domain edge node. ***interDomainLink***: The PNNI interface acts as a local domain edge node.
Mib	AtmPnni
Values	intraDomainLink interDomainLink
Default	No default

GROUP **AtmIf Pnni Reroute** **LocalOperational (LOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.

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Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Reroute **localSubscribedConnections (lsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **localEligibleRecoveredCon (lerc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **localIneligibleRecoveredCon (lirc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **localLastRrCauseCode (lrrcc)**

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **localPathsOptimized (lPathsOpt)**

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Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Pnni Reroute **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Reroute **globalSubscribedConnections (gsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **globalEligibleRecoveredCon (gerc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **globalIneligibleRecoveredCon (girc)**

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Atmlf Pnni Reroute **globalLastRrCauseCode (grrcc)**

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **globalPathsOptimized (gPathsOpt)**

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP Atmlf Pnni Reroute **Statistics (Stats)**

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Reroute **totalLocalConnectionRecoveries (tLConRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **totalLocalFailedRecoveries (lFailedRec)**

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.

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Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **totalLocalPathOptimizations (tLPathOpt)**

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **totalGlobalConnectionRecoveries (tGConRec)**

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **totalGlobalFailedRecoveries (gFailedRec)**

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **totalGlobalPathOptimizations (tGPathOpt)**

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Atmlf Pnni Reroute **totalOptimizationPasses (optPass)**

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Atmlf Pnni Reroute **Ov**

Groups	GROUP AtmIf Pnni Reroute Ov DomainProvisioned (DProv) GROUP AtmIf Pnni Reroute Ov Provisioned (Prov) GROUP AtmIf Pnni Reroute Ov LocalProvisioned (LProv) GROUP AtmIf Pnni Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*AtmIf/n Pnni Reroute Ov* *AtmIf/n Vpt/vpi Pnni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmPnni
Common Verbs	Help List Display

GROUP Atmlf Pnni Reroute Ov **DomainProvisioned (DProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes specific to rerouting on a PNNI interface.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Reroute Ov **localDomainLink (domain)**

Access	Read and write
Description	This attribute specifies the method used to identify the type of local domain link. One of the following values can be specified: ***sameAsARtgPnniReroute***: The type of the local domain link is

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determined by the exchange of the *ARtg Pnni Reroute localDomain* value with the PNNI neighbor.
intraDomainLink: The result of the exchange of the *localDomain* is ignored. The local domain link type is set to intra-domain link.
interDomainLink: The result of the exchange of the *localDomain* is ignored. The local domain link type is set to inter-domain link.

Mib AtmPnni

Values sameAsARtgPnniReroute (sameAs)
intraDomainLink (intra)
interDomainLink (inter)

Default sameAsARtgPnniReroute

GROUP AtmIf Pnni Reroute Ov Provisioned (Prov)

Properties Provisioned

Description This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.

Mib AtmPnni

ATTRIBUTE AtmIf Pnni Reroute Ov protocol

Access Read and write

Description This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning.

One of the following values can be specified:
sameAsARtgPnniReroute: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
localEbr: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib AtmPnni

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Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE Atmlf Pnni Reroute Ov **numOptAttempts**

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.
Mib	AtmPnni
Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE Atmlf Pnni Reroute Ov **moduleOptimizationConnections**

Access	Read and write
Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified: ***sameAsARtgPnniReroute***: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute. ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments that are using a path with a

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greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib	AtmPnni
Values	none recoveredOnly allSubscribed sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE Atmlf Pnni Reroute Ov **switchoverMechanism**

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute. ***standard***: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”. ***rcl***: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.
Mib	AtmPnni
Values	standard rcl sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

GROUP Atmlf Pnni Reroute Ov **LocalProvisioned (LProv)**

Properties	Provisioned
Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	AtmPnni

ATTRIBUTE Atmlf Pnni Reroute Ov **localConnectionRecoverySubscr (lConRec)**

Access	Read and write

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Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute:*** If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values. ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.
Mib	AtmPnni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE **AtmIf Pnni Reroute Ov** **localPathOptimizationSubscr (lPathOpt)**

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization. Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute***: If this value is set, the local path optimization

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subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib — AtmPnni

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

GROUP Atmlf Pnni Reroute Ov GlobalProvisioned (GProv)

Properties — Provisioned

Description — This group contains the provisionable attributes for the global and EBR rerouting protocol.

Mib — AtmPnni

ATTRIBUTE Atmlf Pnni Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments

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request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib — AtmPnni

Set of — sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default — (sameAsARtgPnniReroute)

ATTRIBUTE Atmlf Pnni Reroute Ov **globalPathOptimizationSubscr (gPathOpt)**

Access — Read and write

Description — This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

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Mib	AtmPnni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT AtmIf Pnni ServiceTrace (SrvTrace)

Groups	GROUP AtmIf Pnni SrvTrace Operational
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmPnniTrace
Common Verbs	Help List Display Add DELete

VERB Start AtmIf Pnni SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

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VERB Stop **AtmIf Pnni SrvTrace**

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP **AtmIf Pnni SrvTrace** **Operational**

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmPnniTrace

ATTRIBUTE **AtmIf Pnni SrvTrace** **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmPnniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE **AtmIf Pnni SrvTrace** **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmPnniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE **AtmIf Pnni SrvTrace** **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is

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	exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmPnniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Pnni SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmPnniTrace
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Atmlf

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - AtmMpe

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COMPONENT AtmMultiprotocolEncapsulation (AtmMpe)

Instance	Decimal (0..2047)
Groups	GROUP AtmMpe CustomerIdentifierData (CidData) GROUP AtmMpe IfEntryProv (IfEntry) GROUP AtmMpe Provisioned (Prov) GROUP AtmMpe MediaProvisioned (MediaProv) GROUP AtmMpe OsiState (State) GROUP AtmMpe OperationalStatus (OperStatus)
Scope	Application
Description	*AtmMpe/n* This component represents a logical interface between the Virtual Router and an ATM media (*AtmIf*). Multiprotocol Encapsulation as specified in RFC1483 is used to transfer higher-layer protocol data across virtual channels in an ATM network. *AtmMpe* components provide a means to associate multiple ATM virtual channel connections with a single *VirtualRouter ProtocolPort*. The *AtmMpe* component is associated with a *ProtocolPort* via a linkage attribute and virtual channel connections via a linkage attribute in each *AtmConnection* subcomponent.
Mib	AtmMpe
Subcomponents	COMPONENT AtmMpe AtmConnection (Ac)
Opt. Subcomp.	COMPONENT AtmMpe SpvcTerminationPoint (Stp)
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP AtmMpe CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	AtmMpe

ATTRIBUTE AtmMpe customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	AtmMpe
Values	Decimal (0; 1..8191)
Default	0

GROUP AtmMpe IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	AtmMpe

ATTRIBUTE AtmMpe ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	AtmMpe
Values	up down testing

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Default	up

ATTRIBUTE AtmMpe ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	AtmMpe
Values	Decimal (1..65535)
Default	No default

GROUP AtmMpe Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmMpe* component.
Mib	AtmMpe

ATTRIBUTE AtmMpe maxTransmissionUnit (mtu)

Access	Read and write
Description	This attribute sets the size of the largest datagram which can be sent on the interface. This includes the size of the Logical Link Control header (if applicable) as well as the protocol data unit.
Mib	AtmMpe
Values	Decimal (256..9188)
Units	octets
Default	9188

ATTRIBUTE AtmMpe encapType (etype)

Access	Read and write
Criticality	Component
Description	This attribute specifies the RFC-1483 encapsulation type to be used for the *AtmConnections* under this *AtmMpe*. Specifying ***llcEncap*** allows multiplexing of multiple protocols over the *VCCs*. The protocol of the carried PDU will be identified by an IEEE 802.2 Logical Link Control header. If Inverse ARP is to be carried over a VCC, ***llcEncap*** must be used. If the *Stp* component exists under the *AtmMpe*, ***llcEncap*** must be used. Specifying ***ipVcEncap*** indicates that all the VCCs (that is,

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*AtmConnection*s) under an *AtmMpe* component will use VC-based multiplexing and will carry IP PDUs only.

Specifying ***llcBridgeEncap*** indicates that the VCC (that is, the *AtmConnection*) under an *AtmMpe* component will use the bridged Ethernet encapsulation format specified in RFC-1483. Note that when setting the *encapType* attribute to ***llcBridgeEncap***, the *maxTransmissionUnit* must be set within the ***[256 .. 1524]*** range.

Mib	AtmMpe
Values	llcEncap ipVcEncap llcBridgeEncap
Default	llcEncap

ATTRIBUTE AtmMpe ilsForwarder

Access	Read and write
Criticality	Component
Description	This attribute specifies the *IlsForwarder* component this *AtmMpe* component is using. This attribute is only applicable when all *AtmConnection* components under the *AtmMpe* component are associated with PVC VCCs residing on a CQC-based ATM FP.
Mib	AtmMpe
Values	Link (Service, linkToTrafficSource)
Default	No default

GROUP AtmMpe MediaProvisioned (MediaProv)

Properties	Provisioned
Description	This group contains the base provisioning data for the *AtmMpe* component.
Mib	AtmMpe

ATTRIBUTE AtmMpe linkToProtocolPort

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates an *AtmMpe* application with a protocol port.
Mib	AtmMpe
Values	Link (Service, linkToMedia)

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Default	No default

GROUP AtmMpe OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmMpe

ATTRIBUTE AtmMpe adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmMpe
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmMpe operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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	with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmMpe
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmMpe usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmMpe
Values	idle active (activ) busy
Default	idle

GROUP AtmMpe OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	AtmMpe

ATTRIBUTE AtmMpe snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	AtmMpe
Values	up down testing
Default	up

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COMPONENT AtmMpe AtmConnection (Ac)

Instance	Decimal (1..255)
Groups	GROUP AtmMpe Ac Provisioned (Prov) GROUP AtmMpe Ac OsiState (State) GROUP AtmMpe Ac Operational (Oper) GROUP AtmMpe Ac Statistics (Stats) GROUP AtmMpe Ac IpIfLink
Scope	Application
Description	*AtmMpe/n AtmConnection/n* *Rtr/<string> If/<IP addr> AtmMpe AtmConnection/n* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe AtmConnection/n* This component represents a virtual channel through which inter-networking frames are transported using RFC 1483 encapsulation. The *AtmConnection* component contains OSI state information, frame based statistics, and the linkage to an ATM virtual channel connection. This component's instance value is used by higher-layer protocols when referring to a specific ATM connection.
Mib	AtmMpe
Opt. Subcomp.	COMPONENT AtmMpe Ac SourcePvc (SrcPvc) COMPONENT AtmMpe Ac DestinationPvc (DstPvc)
Dyn. Subcomp.	COMPONENT AtmMpe Ac AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP AtmMpe Ac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmConnection* component.
Mib	AtmMpe

ATTRIBUTE AtmMpe Ac atmConnection (link)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the ATM nailed up endpoint, *AtmIf/n Vcc/vpi.vci Nep,* that this connection is associated with. It must not be provisioned for an SPVC connection.
Mib	AtmMpe
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE AtmMpe Ac ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the *AtmConnection.* This value is used to distinguish the connection from others for the purpose of IP and MPLS forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If a packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one *AtmConnection*, then one of the connections is selected for transmitting the packet. For IP packets the selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. For MPLS packets the selection is based on either the DSCP field of the IP packet or the EXP field of the MPLS packet. DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. EXP based selection of the the outgoing connection is explained in the description of the *MplsServiceMap* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component. Modifying this attribute will reset the *AtmConnection*. If the *AtmConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the *AtmConnection*. See the description of *Vr Ip CosPolicyGroup* for more information.
Mib	AtmMpe
Values	Decimal (0..3)
Default	0

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ATTRIBUTE AtmMpe Ac mplsSignaling (mplsSig)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this AtmMpe Ac is dedicated for MPLS signaling (LDP or CR-LDP), or shared between MPLS and IP. If the value is ***dedicated***, the *Ac* is dedicated for MPLS signaling; the route is not found in IP ARP. If the value is ***shared***, the *Ac* is accessible by IP. The checking of this provisionable attribute is done through semantic checking. The attribute takes on the value ***shared*** by default, and can only be ***dedicated*** if there are more than one *Ac* under the *AtmMpe*.
Mib	AtmMpe
Values	shared dedicated
Default	shared

GROUP AtmMpe Ac OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmMpe

ATTRIBUTE AtmMpe Ac adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmMpe

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmMpe Ac operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmMpe
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmMpe Ac usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmMpe
Values	idle active (activ) busy
Default	idle

GROUP AtmMpe Ac Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmConnection* component.

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Mib	AtmMpe

ATTRIBUTE AtmMpe Ac speed

Access	Read only
Description	This attribute indicates the approximate bit rate for the connection. The bit rate is determined from the cell rate provisioned for the *Vcc* linked to this connection. The cell rate is multiplied by 53 bytes per cell and 8 bits per byte to obtain the bit rate. The *ifSpeed* of the entry in the ifTable corresponding to the *AtmMpe* component is the lowest speed of all the connections associated with the *AtmMpe* component. This attribute is always equal to 0 for an SPVC.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

GROUP AtmMpe Ac Statistics (Stats)

Properties	Operational
Description	This group contains the frame based statistics maintained for the *AtmConnection* component. For cell based statistics, see the *Vcc* component.
Mib	AtmMpe

ATTRIBUTE AtmMpe Ac outPackets

Access	Read only
Description	This attribute counts the total number of packets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac outOctets

Access	Read only
Description	This attribute counts the total number of octets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE AtmMpe Ac outDiscards

Access	Read only
Description	This attribute counts the total number of packets which were supposed to be sent on this connection but were discarded due to congestion or the connection being down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac inPackets

Access	Read only
Description	This attribute counts the total number of packets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac inOctets

Access	Read only
Description	The attribute counts the total number of octets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac inUnknownProtos

Access	Read only
Description	This attribute counts the total number of packets received on this connection which were discarded because they contained an unknown or unsupported protocol (includes packets received for protocols not currently bound to the associated *ProtocolPort* component). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE AtmMpe Ac inErrors

Access	Read only
Description	This attribute counts the total number of packets received on the connection which contained errors preventing them from being delivered to a higher-layer protocol (includes short frames). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmMpe Ac IpIfLink

Properties	Provisioned
Description	This group contains the link between this component and an *IpLogicalInterface*.
Mib	AtmMpe

ATTRIBUTE AtmMpe Ac linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. This attribute is not applicable and cannot be set when the *AtmConection* component is added under an *Rtr If AtmMpe* or an *Rtr Vrf If AtmMpe* component. When set, the value of this attribute must be consistent with the *linkToPrototocolPort* attribute value of the parent *AtmMpe* component. That is, they must both point to the same *PrototocolPort* component.
Mib	AtmMpe
Values	Link (Service, linkToMediaConnection)
Default	No default

COMPONENT AtmMpe Ac SourcePvc (SrcPvc)

Groups	GROUP AtmMpe Ac SrcPvc Provisioned (Prov) GROUP AtmMpe Ac SrcPvc Operational (Oper)
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* This component contains addressing and control information used by the calling SPVC endpoint to set up an SPVC connection to a remote called

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SPVC endpoint. An *Stp* component must exist under the *Ac* component if a *SrcPvc* component exists.

Mib	AtmMpeSpvc
Subcomponents	COMPONENT AtmMpe Ac SrcPvc TrafficManagement (Tm)
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) **AtmMpe Ac SrcPvc**

Impact	Service
Description	*Clear AtmMpe/n Ac/m SrcPvc* *Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* *Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it. If there is no active SPVC, the clear command has no effect.

GROUP **AtmMpe Ac SrcPvc** **Provisioned (Prov)**

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SourcePvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE **AtmMpe Ac SrcPvc** **remoteAddress (raddr)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of the called SPVC endpoint (this must be a remote *AtmMpe* component).
Mib	AtmMpeSpvc
Values	String (20, Hex)
Default	No default

ATTRIBUTE **AtmMpe Ac SrcPvc** **remoteConnectionIdentifier (rci)**

Access	Read: All Write: All
Criticality	Component

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Description	This attribute specifies the remote connection identifier of the SPVC. It is provisioned with the *Ac* instance of the *AtmMpe Ac* component at the called SPVC endpoint.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	1

GROUP AtmMpe Ac SrcPvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Ac SrcPvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE AtmMpe Ac SrcPvc retryCount (retry)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed connection attempts.
Mib	AtmMpeSpvc
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmMpe Ac SrcPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.

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Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT AtmMpe Ac SrcPvc TrafficManagement (Tm)

Groups	GROUP AtmMpe Ac SrcPvc Tm Provisioned (Prov)
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc Tm* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* This component contains ATM QoS information used by the calling endpoint of an SPVC connection to request a particular QoS from ATM.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP AtmMpe Ac SrcPvc Tm Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *TrafficManagement* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Ac SrcPvc Tm atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the desired ATM service category for this connection.
Mib	AtmMpeSpvc
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr)
Default	unspecifiedBitRate

ATTRIBUTE AtmMpe Ac SrcPvc Tm peakCellRate (pcr)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the desired peak cell rate (PCR) in both directions for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	AtmMpeSpvc
Values	Decimal (0..2147483647)
Default	0

COMPONENT AtmMpe Ac DestinationPvc (DstPvc)

Groups	GROUP AtmMpe Ac DstPvc Operational (Oper)
Scope	Application
Description	*AtmMpe/n Ac/m DstPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* The *DestinationPvc* component represents the called endpoint of an SPVC connection.
Mib	AtmMpeSpvc
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) AtmMpe Ac DstPvc

Impact	Service
Description	*Clear AtmMpe/n Ac/m DstPvc* *Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it. If there is no active SPVC, the clear command has no effect.

GROUP AtmMpe Ac DstPvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *DstPvc* component.
Mib	AtmMpeSpvc

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ATTRIBUTE AtmMpe Ac DstPvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE AtmMpe Ac DstPvc remoteAddress (raddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of the remote (calling) endpoint. If a connection is not established, *remoteAddress* is an ***empty string***.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	""

ATTRIBUTE AtmMpe Ac DstPvc remoteConnectionIdentifier (rci)

Access	Read: All Write: Illegal
Description	This attribute indicates the remote connection identifier of the remote (calling) SPVC endpoint (that is, the *Ac* instance of the remote *AtmMpe Ac* component). If the connection is not established, the *remoteConnectionIdentifier* is an ***empty string***.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	No default

ATTRIBUTE AtmMpe Ac DstPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc

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Values	Decimal (0..255)
Default	No default

COMPONENT AtmMpe Ac AtmConnection (AtmCon)

Groups	GROUP AtmMpe Ac AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP AtmMpe Ac AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Ac AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmMpeSpvc
Values	The name of the component
Default	No default

COMPONENT AtmMpe SpvcTerminationPoint (Stp)

Groups	GROUP AtmMpe Stp Provisioned (Prov) GROUP AtmMpe Stp Operational (Oper)
Scope	Application
Description	*AtmMpe/n Stp* *Rtr/<string> If/<IP addr> AtmMpe Stp* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Stp* This component specifies the SPVC related provisioning for the *AtmMpe*

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component. Its presence identifies an *AtmMpe* component that contains one or more SPVC connections.

Mib	AtmMpeSpvc
Common Verbs	Help List Display Add DELete

GROUP AtmMpe Stp Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SpvcTerminationPoint* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Stp localAddress (laddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of this *AtmMpe* component. The default is an empty string. If no NSAP address is provisioned, a default NSAP address is provided. To view the generated default address refer to the *opLocalAddress* attribute under this component after the *act prov* command is executed.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmMpe Stp softPvcRetryPeriod (retry)

Access	Read: All Write: All
Description	This attribute specifies the interval at which an SPVC connection attempts establishment after a failed setup attempt occurs. The *softPvcRetryPeriod* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	AtmMpeSpvc
Values	Decimal (10..3600)
Units	seconds
Default	20

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ATTRIBUTE AtmMpe Stp softPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off before attempting to reestablish a connection after an established SPVC connection is cleared/ released. The *softPvcHoldOffTime* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	AtmMpeSpvc
Values	Decimal (0; 50..3600000)
Units	msec
Default	20000

GROUP AtmMpe Stp Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SpvcTerminationPoint* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Stp opLocalAddress (addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of this *AtmMpe* component. The value is the same as the provisioned *laddr*. If the *laddr* is not provisioned, the value of *addr* is automatically generated by the software.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	""

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - AtmMpe

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Type: NTP
Language type: U.S. English

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Btds

NN10600-060

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Language type: U.S. English

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COMPONENT BitTransparentDataService (Btds)

Instance	Decimal (1..65535)
Groups	GROUP Btds CustomerIdentifierData (CidData) GROUP Btds IfEntryProv (IfEntry) GROUP Btds OperationalStatus (OperStatus) GROUP Btds OsiState (State) GROUP Btds Operational
Scope	Application
Description	*BitTransparentDataService/n* The Bit Transparent Data Service (BTDS) component defines an instance of the Bit transparent data service. One instance of this component is required by each DS1, E1, V.35 or V.11 channel that is offering bit transparent traffic. The instance number is arbitrary.
Mib	BitTransparent
Subcomponents	COMPONENT Btds Framer (Framer) COMPONENT Btds PermanentLogicalConnection (Plc)
Opt. Subcomp.	COMPONENT Btds Dpnss1 COMPONENT Btds Mcdn
Dyn. Subcomp.	COMPONENT Btds LogicalConnection (LCo)
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Btds CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	BitTransparent

ATTRIBUTE Btds customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	BitTransparent
Values	Decimal (0; 1..8191)
Default	0

GROUP Btds IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	BitTransparent

ATTRIBUTE Btds ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	BitTransparent
Values	up down testing

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Default	up

ATTRIBUTE Btds ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	BitTransparent
Values	Decimal (1..65535)
Default	No default

GROUP Btds OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	BitTransparent

ATTRIBUTE Btds snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	BitTransparent
Values	up down testing
Default	up

GROUP Btds OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	BitTransparent

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ATTRIBUTE Btds adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BitTransparent
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Btds operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BitTransparent
Values	enabled (ena) disabled (dis)
Default	disabled

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ATTRIBUTE Btds usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BitTransparent
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Btds availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

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The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	BitTransparent
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Btds proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The

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operationalState is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	BitTransparent
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Btds controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	BitTransparent
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Btds alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	BitTransparent
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Btds standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	BitTransparent
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Btds unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	BitTransparent
Values	false true
Default	false

GROUP Btds Operational

Properties	Operational
Description	This group contains operational attributes related to a *Btds*.
Mib	BitTransparent

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ATTRIBUTE Btds serviceFailureReason

Access	Read: Passive Write: Illegal
Description	This attribute indicates the result of end to end negotiation with the remote end across the subnet. If *serviceFailureReason* is ***undetermined***, this *Btds* component has not performed end to end negotiation with the remote end, and may or may not be up. *serviceFailureReason* is ***undetermined*** if this *Btds* just became enabled, if there is not enough available bandwidth to perform negotiation or if the remote end cannot perform negotiation with this *Btds* component. If *serviceFailureReason* is ***none***, end to end negotiation passed. If *serviceFailureReason* is ***mismatchedService***, end to end negotiation failed because the remote end service is not a *Btds*. If *serviceFailureReason* is ***mismatchedTimeSlotAlignment***, end to end negotiation failed because the local *Btds Framer. timeSlotAlignment* does not match the remote *Btds Framer timeSlotAlignment*. If *serviceFailureReason* is ***mismatchedCallDiscriminator***, the local *Btds* call discrimination subcomponents (*Btds Mcdn* and *Btds Dpnss1*) do not match the remote *Btds* call discrimination subcomponents. If *serviceFailureReason* is ***compDecodeFailed***, end to end negotiation failed because the information received from the remote end was not recognized as valid data. If serviceFailureReason is dspFailure, the associated DSP is broken. This value is only applicable for 1pMVPe and 4pMVPe FPs.
Mib	BitTransparent
Set of	none undetermined logicalConnection mismatchedService mismatchedTimeSlotAlignment mismatchedCallDiscriminator compDecodeFailed dspFailure
Default	No default

COMPONENT Btds Framer (Framer)

Groups	GROUP Btds Framer Provisioned (Prov) GROUP Btds Framer ChannelOptions (Channel) GROUP Btds Framer OsiState (State) GROUP Btds Framer Statistics (Stats)

COLLECTED STATS BitTransparentDataService Framer

Scope	Application

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Description	*Btds/n Framer* The Framer component controls link layer framing for application components sending and receiving data on a link interface. It is also through Framer, that an application component is associated with a specific hardware link interface. The Framer component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes which are associated with specific hardware components (such as V35/n or DS1/n). The Framer component also provides a provisionable attribute which binds the application component to a specific hardware component. The Framer component contains operational attributes for link interface datapath statistics (such as frame counts).
Mib	BitTransparent
Common Verbs	Help List Display

GROUP Btds Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	BitTransparent

ATTRIBUTE Btds Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	BitTransparent
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Btds Framer ChannelOptions (Channel)

Properties	Provisioned

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Description	This group contains attributes defining the framing of data on the link interface or n*64kbps channel.
Mib	BitTransparent

ATTRIBUTE Btds Framer protocol

Access	Read and write
Criticality	Process
Description	This attribute specifies the ingress frames suppressed by this *Btds*. If *protocol* is ***none***, this *Btds* does not suppress any ingress frames. If *protocol* is ***hdlc***, this *Btds* suppresses ingress frames where each byte is an identical non-inverted HDLC idle pattern, but only after two or more consecutive frames meet this description. If *protocol* is ***nrziHdlc***, this *Btds* suppresses ingress frames where each byte is an identical NRZI encoded HDLC idle pattern, but only after two or more consecutive frames meet this description. If *protocol* is ***universal***, this *Btds* suppresses ingress frames where each 16-bit word is identical, but only after a provisionable number of consecutive frames meet this description. The number of consecutive frames is determined by *numOfIdleBytesToMonitor.* Note that the number of idle bytes suppressed at the ingress side does not necessarily equal the number of idle bytes generated at the egress side. It is a semantic check warning if *protocol* is ***hdlc***, ***nrziHdlc*** or ***universal*** and this *Btds* is running on a ***1pE1Mvp***, ***1pDS1Mvp*** or ***1pTTC2mMvp*** card.
Mib	BitTransparent
Values	none hdlc nrziHdlc universal
Default	none

ATTRIBUTE Btds Framer numOfIdleBytesToMonitor

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of consecutive repeated ingress 16-bit words this *Btds* must encounter before suppressing universal ingress idle frames. This attribute is only used if *protocol* is ***universal***. *numOfIdleBytesToMonitor* should be larger than the largest frame size that can be sent into this *Btds*.
Mib	BitTransparent
Values	Decimal (0..32000)
Default	0

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ATTRIBUTE Btds Framer **idlePattern**

Access	Read and write
Criticality	Process
Description	This attribute specifies how to fill a local egress frame when the remote *Btds* suppressed an ingress frame.
Mib	BitTransparent
Values	Hex (H.0..H.ff)
Units	Hex
Default	H.ff

ATTRIBUTE Btds Framer **timeSlotAlignment (tsa)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the time slot alignment of this *Btds*. With time slot alignment, data sent out on a particular time slot to a link is received on the same time slot. A value of unaligned specifies the regular Btds application. A value of ***frameAligned*** enables frame aligned Btds. When framed aligned Btds is specified, only one channel may be provisioned since only one fraction of N x 64kbit/s is presently available. timeSlotAlignment can not be set to frameAligned unless this Btds is running on a ***DS1V***, ***E1V***, ***1pDS1V*** or ***1pE1V*** card *timeSlotAlignment* must have the same value at both ends of a *Btds*. If *timeSlotAlignment* does not have the same value at both ends of a *Btds*, the *Btds* will be out of service. In this case, *Btds serviceFailureReason* is ***mismatchedTimeSlotAlignment***.
Mib	BitTransparent
Values	unaligned frameAligned
Default	unaligned

ATTRIBUTE Btds Framer **insertedOutputDelay**

Access	Read and write
Criticality	Process
Description	This attribute defines the amount of added output delay to compensate for cross network delay variations. Cross network delay variations is a function of the network topology. Setting this attribute will allow the Btds service to deal with cross network delay variations. This attribute provides for delay in addition to the elastic buffer. Total egress delay is approximately the *insertedOutputDelay* plus the elastic buffer. The elastic buffer is the packetization timex5 cells in the buffer.

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	Packetization time per cell is calculated by taking the inverse of [line speed (kbit/s) x (byte/8bits) x (1/cell size (bytes))]. The value for *insertedOutputDelay* should be increased if the *frmUnderRuns* is increasing and *frmLostInNetwork* is not increasing.
Mib	BitTransparent
Values	Decimal (0..50)
Units	msec
Default	12

ATTRIBUTE Btds Framer **btdsCellSize**

Access	Read and write
Criticality	Process
Description	This attribute allows selection of larger BTDS cell sizes. Larger BTDS cell sizes improve efficiency but increase the minimum egress queue delay. If the associated channel is using less than 5 *timeslots* (320kbit/s), the default *btdsCellSize* will be used. Setting *btdsCellSize* to **84** is only allowed on DS1 and E1 FPs.
Mib	BitTransparent
Values	44 84
Units	bytes
Default	44

GROUP Btds Framer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	BitTransparent

ATTRIBUTE Btds Framer **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — BitTransparent

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Btds Framer operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — BitTransparent

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Btds Framer usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — BitTransparent

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Values	idle active (activ) busy
Default	idle

GROUP Btds Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	BitTransparent

ATTRIBUTE Btds Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by Framer. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer suppressedFrames

Access	Read only
Description	This attribute counts the number of frames dropped at the interface due to the idle pattern being detected. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by Framer. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Btds Framer lrcErrors

Access	Read only
Description	This attribute counts the number of frames received from the network with LRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer frmLostInNetwork

Access	Read only
Description	This attribute counts the number of frames which the service knows it did not receive from the network although they were sent in to the network from the far end. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer frmUnderRuns

Access	Read only
Description	This attribute counts the number of times that a frame was needed but was not available because it had been delayed too long in the network. This error may occur repeatedly if the interface clocks at the two access points to the network are operating at different rates. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer frmDumped

Access	Read only
Description	This attribute counts the number of frames which have been dumped because the local interface output queue grew too large. This can occur if the clock rate on the local interface is faster than the clock rate on the remote interface and there are no silence periods to absorb the difference. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)

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Default 0

COLLECTED STATS BitTransparentDataService Framer

Description The statistics record generated by the BitTransparentDataService Framer component.

ATTRIBUTE Btds Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Btds Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Btds Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Btds Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Btds Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT Btds PermanentLogicalConnection (Plc)

Groups GROUP Btds Plc Provisioning (Prov)

Scope Application

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Description	*Btds/n PLC* This is the description of the PLC Component for the BTDS service.
Mib	BitTransparent
Common Verbs	Help List Display

GROUP Btds Plc Provisioning (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for a permanent logical connection. Note that all of the attributes are valid and provisionable on both ends of a connection. However with the exception of *remoteName*, all operational attributes are derived from the originating end provisioning, which may be either end unless *remoteName* is not provisioned on one end.
Mib	BitTransparent

ATTRIBUTE Btds Plc remoteName (rName)

Access	Read and write
Criticality	Process
Description	This attribute specifies the PLC's remote end point's address in the format of a component name. The syntax of a component is: "em/node type/instance". For an alternative representation of end point's addresses, see *addressToCall* and l*ocalAddress PLC* attributes. When using the component name representation, end points are identified using a node name and a service name. As an example, the end point component for a third Btds service on node MoonBase is: "*EM/MoonBase BTDS/3*". If the *remoteName* is provisioned, it must match the name of the remote end or the connection will not be established even if the remote end is provisioned correctly. If no *remoteName* is provisioned, then this *LC* will accept connections from any other remote *LC* and it will not originate calls. Connections establish faster and are unique if both ends are provisioned with *remoteName*. *RemoteName* should be used when the remote end of the connection resides within the same topology region. If it resides in a different topology region, then *addressToCall* and *localAddress PLC* attributes should be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*. These strings are case insensitive, but the complete component name must be input.

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Mib	BitTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Btds Plc setupPriority (spri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	BitTransparent
Values	Decimal (0..4)
Default	2

ATTRIBUTE Btds Plc holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the priority that a path holds once it is established. Zero(0) is the highest priority and four(4) is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	BitTransparent
Values	Decimal (0..4)
Default	2

ATTRIBUTE Btds Plc requiredTxBandwidth (tbw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth (in bits per second) reserved by a path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is

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	desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that Transmit at this end represents Receive at the remote end. Note that when the values do not correspond the originating end of the connection determines the value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Btds Plc requiredRxBandwidth (rbw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth (in bits per second) reserved by a path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Btds Plc requiredTrafficType (rttyp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of traffic transmitted over the path. There are eight(8) possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five(5) other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,***

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then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.

Mib	BitTransparent
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	video

ATTRIBUTE Btds Plc permittedTrunkTypes (pttyp)

Access	Read and write
Criticality	Process
Description	This attribute specifies up to eight(8) types of trunk that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six(6) remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	BitTransparent
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Btds Plc requiredSecurity (rsec)

Access	Read and write
Criticality	Process
Description	This attribute specifies the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.

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Mib	BitTransparent
Values	Decimal (0..7)
Default	4

ATTRIBUTE Btds Plc requiredCustomerParm (rcparm)

Access	Read and write
Criticality	Process
Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. Its value, a number from zero to seven, is chosen by network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	BitTransparent
Values	Decimal (0..7)
Default	4

ATTRIBUTE Btds Plc pathAttributeToMinimize (pamin)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metric for all trunks included in the route.
Mib	BitTransparent
Values	cost delay
Default	cost

ATTRIBUTE Btds Plc maximumAcceptableCost (maxCost)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is being

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selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done for any minimization criterion. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.

Mib	BitTransparent
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Btds Plc maximumAcceptableDelay (maxDelay)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delay of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512-byte packet. Remember, that the trunk during its staging measures a *measuredRoundTripDelay*. This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512-byte packet is used to perform the measurement. If for any trunk the half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay*.
Mib	BitTransparent
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Btds Plc emissionPriority (epri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. *EmissionPriority* of Zero(0) indicates the highest emission priority, while two (2) indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	BitTransparent

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Values	Decimal (0..2)
Default	0

ATTRIBUTE Btds Plc discardPriority (dpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the importance of the packets on the path. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically) are discarded after packets with a higher *discardPriority* (numerically).
Mib	BitTransparent
Values	Decimal (1..3)
Default	1

ATTRIBUTE Btds Plc pathType (pType)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the path for this PLC is determined automatically or by static provisioning. The default (***normal***) is to automatically choose a route with Route Selection. ***Normal*** *pathTypes* require less provisioning and can dynamically handle path failures. The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	BitTransparent
Values	normal manual forced
Default	normal

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ATTRIBUTE Btds Plc pathFailureAction (pfa)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.
Mib	BitTransparent
Values	reRoutePath disconnectConnection
Default	reRoutePath

ATTRIBUTE Btds Plc bumpPreference (bpref)

Access	Read and write
Criticality	Process
Description	This attribute specifies when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *holdingPriority* in order to acquire its bandwidth and be established. By default, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. A connection may be set to always bump in order to find the best route it may have.
Mib	BitTransparent
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

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ATTRIBUTE Btds Plc optimization (opt)

Access	Read and write
Criticality	Process
Description	This attribute is specifies whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	BitTransparent
Values	disabled enabled
Default	enabled

ATTRIBUTE Btds Plc addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the PLC's remote end point's address in the format of a NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. For an alternative representation of end point's addresses, see *remoteName* attribute. If the *addressToCall* is provisioned, it must match *localAddress* provisioned on the remote end or the connection will not be established. Connections establish faster and are unique if both ends are provisioned with *addressToCall*. *AddressToCall* must be used when the remote end of the connection resides in different topology region. If it resides in the same topology region, then *remoteName* may be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*.
Mib	BitTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Btds Plc localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the PLC's end point address in the format of an NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. *LocalAddress* must share a prefix with MOD nodePrefix or one of MOD alternatePorsPrefixes for this node,

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	otherwise PORS will not be able to route calls to this service. *LocalAddress* is used in conjunction with *addressToCall*. That is, the end responsible for originating calls must have *addressToCall* provisioned, while the end responsible for terminating calls must have *localAddress* provisioned. In such a case, *addressToCall* on the originating end must match exactly the *localAddress* of the terminating end. Note that both ends may be originating and terminating at the same time. That is, both ends may have *addressToCall* and *localAddress* provisioned as long as *addressToCall* and *localAddress* on different ends are identical.
Mib	BitTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Btds Plc maximumAcceptableGatewayCost (maxGateCost)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the gateway cost metric of a route, which is the sum of the gateway cost metrics of all gateway links on the route. It has the same semantics as the *maximumAcceptableCost* except that gateway cost metrics are used instead of trunk cost metrics. Gateway cost metrics are provisioned under *Trunk Address* component of a gateway link specifying a gateway costs of reaching an address through the link.
Mib	BitTransparent
Values	Decimal (0..65535)
Default	2048

ATTRIBUTE Btds Plc manualPath (mpath)

Access	Read and write
Criticality	Process
Description	This attribute is specifies the sequence of trunks to be used as the route for the path, thus bypassing PORS' automatic route selection. If the path fails the validation, no other path can be selected[1]. This attribute should only be used in special cases since the route selection algorithm is able to find and maintain the best routes. A related path attribute, the *pathType*, determines if this route will be used as a manual or forced path type. As an example, the trunk component name for the third trunk on node MoonBase is "*EM/MoonBase Trk/3*". Note that only the first end of the trunk that the packet would encounter is provisioned. These strings are case insensitive but the complete component name must be input. Note 1: the trunk designation must be a 3-letter form, e.g., 'trk'.

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Note 2: only the outbound trunks component names are used to provision the ***manualPath***.

Note 3: It is recommended to have two independent routes specified for a manual path by specifying a different ***manualPath*** (non-symmetric) for each end. In this case, there is no way to select which route will be used (first up wins) but if one path is torn down due to a failure then the other ***manualPath*** may be used to reroute the path.

Mib	BitTransparent
Vector of	String (0..40, ASCII)
Index	Decimal (0..9)
Default	([10] "")

COMPONENT Btds LogicalConnection (LCo)

Groups	GROUP Btds LCo PathData GROUP Btds LCo Statistics (Stats)
Scope	Application
Description	*...Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	BitTransparent
Common Verbs	Help List Display

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VERB RERoute Btds LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Btds LCo PathData

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	BitTransparent

ATTRIBUTE Btds LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	BitTransparent
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

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ATTRIBUTE Btds LCo overrideRemoteName (orn)

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	BitTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Btds LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	BitTransparent
Values	calling called
Default	No default

ATTRIBUTE Btds LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	BitTransparent
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Btds LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established.

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	The delay for an LCo that is originated and terminated on the same module is 0.
Mib	BitTransparent
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Btds LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	BitTransparent
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Btds LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	BitTransparent
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Btds LCo holdingPriority (hpri)

Access	Read only

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Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	BitTransparent
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Btds LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Btds LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	BitTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Btds LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic

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allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.

Mib — BitTransparent

Values
voice
data
video
trafficType1 (tt1)
trafficType2 (tt2)
trafficType3 (tt3)
trafficType4 (tt4)
trafficType5 (tt5)

Default — No default

ATTRIBUTE Btds LCo permittedTrunkTypes (pttyp)

Access — Read only

Description — This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib — BitTransparent

Set of
terrestrial
satellite
trunkType1 (tt1)
trunkType2 (tt2)
trunkType3 (tt3)
trunkType4 (tt4)
trunkType5 (tt5)
trunkType6 (tt6)

Default — No default

ATTRIBUTE Btds LCo requiredSecurity (rsec)

Access — Read only

Description — This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.

Mib — BitTransparent

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Values	Decimal (0..7)
Default	No default

ATTRIBUTE Btds LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	BitTransparent
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Btds LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority*. *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	BitTransparent
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Btds LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority*. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	BitTransparent
Values	Decimal (1..3)
Default	No default

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ATTRIBUTE Btds LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	BitTransparent
Values	normal manual forced
Default	No default

ATTRIBUTE Btds LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	BitTransparent
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Btds LCo pathFailureCount (pfcount)

Access	Read only

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Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	BitTransparent
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Btds LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	BitTransparent
Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE Btds LCo lastTearDownReason

Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:

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none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.

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trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib — BitTransparent

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default — none

ATTRIBUTE Btds LCo pathFailureAction

Access — Read only

Description — This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are

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different at both ends only the calling end is allowed to reconnect.

All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends

Mib	BitTransparent
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Btds LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority.* A connection may also always bump in order to obtain the best route.
Mib	BitTransparent
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Btds LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	BitTransparent
Values	disabled enabled
Default	No default

ATTRIBUTE Btds LCo pathUpDateTime

Access	Read: Service Write: Illegal

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Description	This is the time stamp when the current path was established or reestablished.
Mib	BitTransparent
Values	Time (DHMS)
Default	No default

ATTRIBUTE Btds LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	BitTransparent
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Btds LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	BitTransparent

ATTRIBUTE Btds LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	BitTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Btds LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	BitTransparent
Values	Long Integer
Default	No default

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ATTRIBUTE Btds LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	BitTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Btds LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	BitTransparent
Values	Long Integer
Default	No default

COMPONENT Btds Dpnss1

Groups	GROUP Btds Dpnss1 Provisioned (Prov) GROUP Btds Dpnss1 PriTimeSlotOpModes (Pri) GROUP Btds Dpnss1 VdcdStatistics (Vdcd) GROUP Btds Dpnss1 FrameStatistics (Frames) GROUP Btds Dpnss1 HdlcStatistics (Hdlc)
Scope	Application
Description	*Btds/n Dpnss1* The *Dpnss1* component handles Digital Private Network Signaling System No1 (DPNSS 1) messages for the purpose of voice/data call discrimination. Discrimination between a voice call and a data call causes adjustment of the *VoiceService* operational mode. A single instance of *Dpnss1* component can be provisioned under a *Btds/n* component. The operational mode of any *VoiceService* provisioned within one Primary Rate Interface (PRI) is controlled by the same *Dpnss1* component. To perform call discrimination, both ends of a *Btds* connection require the same call discrimination subcomponent (*Mcdn* or *Dpnss1*). *Btds*

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serviceFailureReason is ***mismatchedCallDiscriminator*** if the ends of a *Btds* connection have different call discrimination subcomponents.

Mib BitTransparent

Common Verbs
Help
List
Display
Add
DELete

GROUP Btds Dpnss1 Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attribute for the *Dpnss1* component to handle DPNSS 1 messages.

Mib BitTransparent

ATTRIBUTE Btds Dpnss1 timeslotsX (x)

Access Read and write

Description This attribute specifies the list of time slots that are provisioned X for call collision resolution. A time slot not provisioned as X is assumed to be Y.

Mib BitTransparent

Set of Decimal (1..31)

Default No default

GROUP Btds Dpnss1 PriTimeSlotOpModes (Pri)

Properties Operational

Description This group contains replicated attribute which displays operational mode of time slots.

Mib BitTransparent

ATTRIBUTE Btds Dpnss1 timeSlotOpMode (tSlot)

Access Read only

Description This attribute displays the operational mode of every time slot which is serviced by a voice service.

The value ***idle*** means that the time slot is not used to service a call, hence the concerned voice service's bandwidth in the subnet is available for other uses.

The value ***voice*** means that a phone call is in progress. All provisioned voice service's value added features have been activated (features such as voice compression, silence suppression, echo cancellation).

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The value ***data*** means that a data call is in progress. All provisioned voice service's value added features have been de-activated, so that a clear 64kbit/s data connection is provided across the subnet.

Mib	BitTransparent
Values	idle voice data
Replication	Decimal (1..31)
Default	No default

GROUP Btds Dpnss1 VdcdStatistics (Vdcd)

Properties	Operational
Description	This group contains attributes that count the protocol messages indicating changes to operational modes of *VoiceServices*.
Mib	BitTransparent

ATTRIBUTE Btds Dpnss1 newVoiceCalls

Access	Read only
Description	This attribute counts the messages indicating beginning of establishment of a voice call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 newDataCalls

Access	Read only
Description	This attribute counts the messages indicating beginning of establishment of a data call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 voiceToData

Access	Read only

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Description	This attribute counts the messages indicating a change of a call operational mode from voice transmission to data transmission. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 dataToVoice

Access	Read only
Description	This attribute counts the messages indicating a change of a call operational mode from data transmission to voice transmission. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 callClears

Access	Read only
Description	This attribute counts the CCS messages indicating the end of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

GROUP Btds Dpnss1 FrameStatistics (Frames)

Properties	Operational
Description	This group contains attributes which count layer 2 frames potentially significant for voice/data call discrimination. See also the description of the *HdlcStatistics* group.
Mib	BitTransparent

ATTRIBUTE Btds Dpnss1 frmProcessed

Access	Read only
Description	This attribute counts the valid layer 2 frames containing an Information Field with a protocol message. Changes to operational mode of a *VoiceService* are triggered only by a subset of processed frames. Many frames refer to the call progress and are ignored from the standpoint of

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voice/data call discrimination.

The counter wraps to zero when it exceeds its maximum value.

Mib BitTransparent

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Btds Dpnss1 frmInvalid

Access Read only

Description This attribute counts the invalid layer 2 frames.

For DPNSS 1, a frames is counted as invalid if:
- it is shorter than 3 octets or longer than 48 octets (excluding two octets of Cyclic Redundancy Check), or
- it has an invalid bit combination in the Address Field, or
- the Control Field is inconsistent with the Address Field, or
- the type of data is invalid, or
- it relates to time slot 0.

For MCDN, a frame is counted as invalid if:
- it is shorter than 4 or longer than 264 octets (excluding two octets of Cyclic Redundancy Check), or
- it has an invalid bit combination in the Address Field, or
- it has missing or incorrect mandatory information elements.

The counter wraps to zero when it exceeds its maximum value.

Mib BitTransparent

Values Decimal (0..4294967295)

Default 0

GROUP Btds Dpnss1 HdlcStatistics (Hdlc)

Properties Operational

Description This group contains attributes which count the signaling frame events.

Mib BitTransparent

ATTRIBUTE Btds Dpnss1 frmFromIf

Access Read only

Description This attribute counts the HDLC frames, correct or not, received from the PRI.

The counter wraps to zero when it exceeds its maximum value.

Mib BitTransparent

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 aborts

Access	Read only
Description	This attribute counts the frame receptions aborted before completion, due to incoming frame format errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 crcErrors

Access	Read only
Description	This attribute counts the frames received with CRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 nonOctetErrors

Access	Read only
Description	This attribute counts the frames received that were non octet aligned. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 overruns

Access	Read only
Description	This attribute counts the frames received for which overruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Btds Dpnss1 largeFrmErrors

Access	Read only
Description	This attribute counts the received frames that were longer than 1024 octets. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

COMPONENT Btds Mcdn

Groups	GROUP Btds Mcdn Provisioned (Prov) GROUP Btds Mcdn PriTimeSlotOpModes (Pri) GROUP Btds Mcdn VdcdStatistics (Vdcd) GROUP Btds Mcdn FrameStatistics (Frames) GROUP Btds Mcdn HdlcStatistics (Hdlc)
Scope	Application
Description	*Btds/n Mcdn* The *Mcdn* component handles the MCDN protocol, or Meridian 1 ISDN Primary Rate Interface, messages for the purpose of voice/data call discrimination. Discrimination between a voice call and a data call causes adjustment of the *VoiceService* operational mode. A single instance of the *Mcdn* component can be provisioned under a *Btds/*n component. The operational mode of any *VoiceService* provisioned within one Primary Rate Interface (PRI) is controlled by the same *Mcdn* component. To perform call discrimination, both ends of a *Btds* connection require the same call discrimination subcomponent (*Mcdn* or *Dpnss1*). *Btds serviceFailureReason* is ***mismatchedCallDiscriminator*** if the ends of a *Btds* connection have different call discrimination subcomponents.
Mib	BitTransparent
Common Verbs	Help List Display Add DELete

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GROUP Btds Mcdn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attribute for the *Mcdn* component.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn adjPbxSide

Access	Read and write
Description	This attribute holds the provisioning related to call collision resolution. Its value must be that same as in the adjacent PBX, at the other end of the PRI. To provision the call collision resolution in Nortel's SL1 and Meridian 1 PBXs, the network operator responds to the prompt SIDE by entering either MAS or SLAV. So if the SLAV was entered, then the *adjPbxSide* has to be provisioned ***slave***.
Mib	BitTransparent
Values	slave master
Default	slave

GROUP Btds Mcdn PriTimeSlotOpModes (Pri)

Properties	Operational
Description	This group contains replicated attribute which displays operational mode of time slots.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn timeSlotOpMode (tSlot)

Access	Read only
Description	This attribute displays the operational mode of every time slot which is serviced by a voice service. The value ***idle*** means that the time slot is not used to service a call, hence the concerned voice service's bandwidth in the subnet is available for other uses. The value ***voice*** means that a phone call is in progress. All provisioned voice service's value added features have been activated (features such as voice compression, silence suppression, echo cancellation). The value ***data*** means that a data call is in progress. All provisioned voice service's value added features have been de-activated, so that a clear 64kbit/s data connection is provided across the subnet.
Mib	BitTransparent

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Values	idle voice data
Replication	Decimal (1..31)
Default	No default

GROUP Btds Mcdn VdcdStatistics (Vdcd)

Properties	Operational
Description	This group contains attributes that count the protocol messages indicating changes to operational modes of *VoiceServices*.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn newVoiceCalls

Access	Read only
Description	This attribute counts the messages indicating beginning of establishment of a voice call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn newDataCalls

Access	Read only
Description	This attribute counts the messages indicating beginning of establishment of a data call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn voiceToData

Access	Read only
Description	This attribute counts the messages indicating a change of a call operational mode from voice transmission to data transmission. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn dataToVoice

Access	Read only
Description	This attribute counts the messages indicating a change of a call operational mode from data transmission to voice transmission. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn callClears

Access	Read only
Description	This attribute counts the CCS messages indicating the end of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

GROUP Btds Mcdn FrameStatistics (Frames)

Properties	Operational
Description	This group contains attributes which count layer 2 frames potentially significant for voice/data call discrimination. See also the description of the *HdlcStatistics* group.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn frmProcessed

Access	Read only
Description	This attribute counts the valid layer 2 frames containing an Information Field with a protocol message. Changes to operational mode of a *VoiceService* are triggered only by a subset of processed frames. Many frames refer to the call progress and are ignored from the standpoint of voice/data call discrimination. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Btds Mcdn frmInvalid

Access	Read only
Description	This attribute counts the invalid layer 2 frames. For DPNSS 1, a frames is counted as invalid if: - it is shorter than 3 octets or longer than 48 octets (excluding two octets of Cyclic Redundancy Check), or - it has an invalid bit combination in the Address Field, or - the Control Field is inconsistent with the Address Field, or - the type of data is invalid, or - it relates to time slot 0. For MCDN, a frame is counted as invalid if: - it is shorter than 4 or longer than 264 octets (excluding two octets of Cyclic Redundancy Check), or - it has an invalid bit combination in the Address Field, or - it has missing or incorrect mandatory information elements. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

GROUP Btds Mcdn HdlcStatistics (Hdlc)

Properties	Operational
Description	This group contains attributes which count the signaling frame events.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn frmFromIf

Access	Read only
Description	This attribute counts the HDLC frames, correct or not, received from the PRI. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn aborts

Access	Read only

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Description	This attribute counts the frame receptions aborted before completion, due to incoming frame format errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn crcErrors

Access	Read only
Description	This attribute counts the frames received with CRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn nonOctetErrors

Access	Read only
Description	This attribute counts the frames received that were non octet aligned. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn overruns

Access	Read only
Description	This attribute counts the frames received for which overruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn largeFrmErrors

Access	Read only
Description	This attribute counts the received frames that were longer than 1024 octets.

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	The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Btds

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - CB

NN10600-060

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COMPONENT ClusterBridge (CB)

Groups	GROUP CB IfEntryProv (IfEntry) GROUP CB MediaProv (Mp) GROUP CB Operational (Oper) GROUP CB OsiState (State) GROUP CB OperationalStatus (OperStatus)
Scope	Application
Description	*ClusterBridge* The ClusterBridge component represents one ClusterBridge application. It allows a set of bridged ports to be treated as one routed port.
Mib	Bridge
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP CB IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Bridge

ATTRIBUTE CB ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge

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Values	up down testing
Default	up

ATTRIBUTE CB ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

GROUP CB MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	Bridge

ATTRIBUTE CB linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	Bridge
Values	Link (Service, linkToMedia)
Default	No default

GROUP CB Operational (Oper)

Properties	Operational
Description	This group includes the operational attibutes which are specific to the ClusterBridge component.
Mib	Bridge

ATTRIBUTE CB macAddress (addr)

Access	Read only

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Description	The medium access controller (MAC) address is an address that is only recognized by one station on the attached bus. This address is automatically assigned by the system.
Mib	Bridge
Values	String (6, Hex)
Default	No default

GROUP CB OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE CB adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE CB operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE CB usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP CB OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE CB snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

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Mib	Bridge
Values	up down testing
Default	up

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Components Reference - CB

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Components Reference - Col

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COMPONENT Collector (Col)

Instance	accounting (acc) alarm (ala) log debug (deb) scn trap stats rtStats (rts) applicationSpecific (appl)
Groups	GROUP Col Provisioned (Prov) GROUP Col Statistics (Stats)

COLLECTED STATS Collector

Scope	Device
Description	*Collector/<dataType>* There is a *Collector* for each data stream. It is a permanent component that resides on the active CP. Its main function is to coordinate the collection of data from all its *Agent* subcomponents and distribute that data to the downstream applications which have requested it (for example, one or more *Session*s or its *Spooler* subcomponent). It also coordinates the time-of-day accounting (TODA) schedules and spooled statistics probes.
Mib	DataCollection
Subcomponents	COMPONENT Col Spooler (Sp)
Dyn. Subcomp.	COMPONENT Col Agent (Ag)
Common Verbs	Help List Display Add

GROUP Col Provisioned (Prov)

Properties	Provisioned
Description	This group specifies all of the provisioning data for a DCS *Collector*.

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Mib	DataCollection

ATTRIBUTE Col collectionTimes (times)

Access	Read and write
Description	This attribute specifies the scheduled times at which data should be collected. Only accounting applications need the capability to generate data in this way. Setting this attribute for other streams has no effect. The user can enter the times in any order and duplicates are prevented at data entry. There is a limit of 24 entries, which is imposed at semantic check time. The collection times are triggered in chronological order. A semantic check error is issued if any 2 entries are less than 1 hour apart or if any 2 entries are more than 12 hours apart (which implies that if any entries are provided, there must be at least 2 entries). Note that by default (that is, in the absence of a provisioned schedule), a Virtual Circuit (VC) starts its own 12-hour accounting timer. If any collection times are provisioned here, then the Time-Of-Day-Accounting (TODA) method is used in place of 12-hour accounting. This is applicable to both Switched VCs and Permanent VCs.
Mib	DataCollection
List of	Time (HM)
List Size	24
Default	No default

ATTRIBUTE Col peakWaterMarkInterval (peak)

Access	Read and write
Description	This attribute specifies the length of the accounting peak water mark interval. It is at least one minute and at most 15 minutes long. An accounting peak water mark within a given accounting interval is the accounting count which occurred during a peak water mark interval with the highest traffic. Peak water marks are used to determine traffic bursts. If no value is provisioned for this attribute, a value of 5 minutes is assumed. Peak water mark is only measured if the attribute *collectionTimes* in *Collector/account* is provisioned.
Mib	DataCollection
List of	Decimal (1..15)
Units	minutes
List Size	1
Default	No default

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GROUP Col Statistics (Stats)

Properties	Operational
Description	This group specifies the statistics operational attributes of the DCS *Collector, Agent* and *Spooler* components.
Mib	DataCollection

ATTRIBUTE Col currentQueueSize

Access	Read only
Description	This gauge contains the current number of records held by this DCS component.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col recordsRx

Access	Read only
Description	This counter contains the cumulative number of records received by a DCS component, from applications that send data to it, since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col recordsDiscarded

Access	Read only
Description	This is the cumulative number of records discarded by this DCS component since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

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COLLECTED STATS Collector

Description — The statistics record generated by the Collector component.

ATTRIBUTE Col oldDateTime

Description — This attribute shows the old date/time immediately prior to the time change.

Values — Time (DHMS)

ATTRIBUTE Col newDateTime

Description — This attribute shows the new date/time immediately after the time change.

Values — Time (DHMS)

COMPONENT Col Spooler (Sp)

Groups — GROUP Col Sp Provisioned (Prov)
GROUP Col Sp OsiState (State)
GROUP Col Sp Operational (Oper)
GROUP Col Sp Statistics (Stats)

Scope — Device

Description — *Col/<dataType> Spooler*
A *Spooler* is a required subcomponent of the *Collector* and also resides on the active CP, managing all the spooling of a particular type of data.
Spooler for the applicationSpecific stream manages multiple files.
For security reasons, a user is restricted from locking a *Spooler* of log data type.

Mib — DataCollection

Common Verbs — Help
List
Display
LOCK
Unlock

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VERB Newfile Col Sp

Impact: Service

Description: *Newfile Col/<datatype> Sp*
This command causes the *Spooler* to open a new file to continue spooling. Typically, this is done because the user wants to retrieve the latest set of records for this type of data. If the new file can be opened, the existing spooling file is closed and moved into the standard “closed” disk directory; otherwise, the existing file is not closed and it remains in the directory containing the open spooling files.

This command operates on all opened files being used in the applicationSpecific stream.

The command succeeds if the new file can be opened; otherwise, the command fails. As long as the file system is available, spooling can continue in the existing open file. Of course, any time the file system is unavailable, spooling stops.

GROUP Col Sp **Provisioned (Prov)**

Properties: Provisioned

Description:
This group specifies all of the provisioning data for a DCS *Spooler*.

Mib: DataCollection

ATTRIBUTE Col Sp **spooling (spool)**

Access: Read and write

Description:
This attribute specifies whether or not this type of data is spooled to the disk. If set to ***off***, it is roughly equivalent to Locking the *Spooler* (except this will survive processor restarts).

The following defaults are used:
- alarm: on
- accounting: on
- log: on
- debug: off
- scn: on
- trap: off (see Note below)
- stats: on
- rtStats: off (see Note below)
- applicationSpecific: on

Note that SNMP Traps and rtStats cannot be spooled. A semantic check prevents the user from setting the value to ***on*** for the trap stream.

Spooling is always turned on for the log stream. A user is prevented from setting the value to ***off*** for the log stream.

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Mib	DataCollection
Values	on off
Default	No default

ATTRIBUTE Col Sp maximumNumberOfFiles (maxFile)

Access	Read and write
Description	This attribute specifies the maximum number of files that should be kept on the disk in the directory containing the closed files of this type. The value 0 is defined to mean “unlimited”. A different default for each type of *Spooler* is defined as follows: - alarm: 30 - accounting: 200 - debug: 2 - log: 0 (see Note below) - scn: 10 - trap: 2 (this value is meaningless and is ignored) - stats: 200 - rtStats: 2 (this value is meaningless and is ignored) - applicationSpecific: 200 Note that the value of this attribute cannot be modified for the log stream.
Mib	DataCollection
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Col Sp daysToRetainFiles

Access	Read and write
Description	This attribute specifies the number of days a spooled file should be kept on the disk in the directory containing the closed files of this type. The value 0 is defined to mean “unlimited”. The spooled files are purged, if the age of a file in days exceeds the value of the *daysToRetainFiles* attribute or the number of spooled files exceeds the value of the *maximumNumberOfFiles* attribute for a particular data type. The default for each type of *Spooler* except log is 0. The default for the log stream is 5. The value of this attribute cannot be modified for all types of *Spooler* except log.

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Note that the value of this attribute cannot be set to 0 for the log stream. A semantic check prevents the user from setting the value to 0 for the log stream.

For security reasons, only a system administrator is allowed to set the value of this attribute for the log stream.

Mib DataCollection

Values Decimal (0..30)

Default No default

GROUP Col Sp OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib DataCollection

ATTRIBUTE Col Sp adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib DataCollection

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

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Default	unlocked

ATTRIBUTE Col Sp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DataCollection
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Col Sp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DataCollection
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Col Sp availabilityStatus (osiAvail)

Access	Read only

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Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	DataCollection
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Col Sp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	DataCollection
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Col Sp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	DataCollection
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Col Sp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	DataCollection
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Col Sp standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	DataCollection
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Col Sp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	DataCollection
Values	false true
Default	false

GROUP Col Sp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes specific to a DCS *Spooler*.
Mib	DataCollection

ATTRIBUTE Col Sp spoolingFileNames

Access	Read only
Description	When *spooling* is ***on***, this attribute contains the names of the open files into which data is currently being spooled. When *spooling* is ***off***, the value of this attribute is the empty list.
Mib	DataCollection
List of	String (0..128, ASCII)
Default	No default

GROUP Col Sp Statistics (Stats)

Properties	Operational
Description	This group specifies the statistics operational attributes of the DCS *Collector, Agent* and *Spooler* components.

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Mib	DataCollection

ATTRIBUTE Col Sp currentQueueSize

Access	Read only
Description	This gauge contains the current number of records held by this DCS component.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col Sp recordsRx

Access	Read only
Description	This counter contains the cumulative number of records received by a DCS component, from applications that send data to it, since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col Sp recordsDiscarded

Access	Read only
Description	This is the cumulative number of records discarded by this DCS component since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Col Agent (Ag)

Instance	Decimal (0..15)
Groups	GROUP Col Ag Statistics (Stats) GROUP Col Ag AgentStatistics (AgentStats)
Scope	Device

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Description	*Col/<dataType> Agent/<cardNumber>* A DCS *Agent* is an operational subcomponent of a *Collector*. One *Agent* instance exists for each *Card* that is running as active or standby.
Mib	DataCollection
Common Verbs	Help List Display

GROUP Col Ag Statistics (Stats)

Properties	Operational
Description	This group specifies the statistics operational attributes of the DCS *Collector, Agent* and *Spooler* components.
Mib	DataCollection

ATTRIBUTE Col Ag currentQueueSize

Access	Read only
Description	This gauge contains the current number of records held by this DCS component.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col Ag recordsRx

Access	Read only
Description	This counter contains the cumulative number of records received by a DCS component, from applications that send data to it, since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col Ag recordsDiscarded

Access	Read only
Description	This is the cumulative number of records discarded by this DCS

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component since the processor last restarted.

This counter wraps to 0 when the maximum value is exceeded.

Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

GROUP Col Ag AgentStatistics (AgentStats)

Properties	Operational
Description	This group contains the statistical attributes specific to the DCS *Agent* components.
Mib	DataCollection

ATTRIBUTE Col Ag recordsNotGenerated

Access	Read only
Description	This attribute counts the records of a particular event type on this *Card* that could not be generated by some application due to some problem such as insufficient resources. One cannot tell exactly which event could not be generated, nor which application instance tried to generate it, but when this count increases, it is an indicator that some re-engineering may be required and will provide some idea as to why a record is missing. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Col

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Cpds

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COMPONENT CpdsNode (Cpds)

Scope	Network
Description	*CpdsNode* This component represents system level information related to a Passport configured as a Cpds.
Mib	no_mib
Common Verbs	Help List Display

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Components Reference - Cpds

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Crs

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COMPONENT CallRedirectionServer (Crs)

Groups	GROUP Crs Provisioned (Prov) GROUP Crs OsiState (State) GROUP Crs Statistics (Stat)
Scope	Network
Description	*CallRedirectionServer* The *CallRedirectionServer* component provides a set of alternate destinations for an original address. The alternate destination could be DPRS routing information (that is, RID/MID) or up to seven addresses.
Mib	CallRedirection
Opt. Subcomp.	COMPONENT Crs PrimaryAddress (PAddr) COMPONENT Crs AlternateRid (AltRid)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Crs Provisioned (Prov)

Properties	Provisioned
Description	The *Provisioned* group contains provisionable attributes of the *CallRedirectionServer* component.
Mib	CallRedirection

ATTRIBUTE Crs logicalProcessor (lp)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the logical processor on which the call redirection server process is to run.
Mib	CallRedirection
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP Crs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	CallRedirection

ATTRIBUTE Crs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	CallRedirection
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Crs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

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The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — CallRedirection

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Crs usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — CallRedirection

Values — idle
active (activ)
busy

Default — idle

GROUP Crs Statistics (Stat)

Properties — Operational

Description — The *Statistics* operational group defines the statistics associated with the *CallRedirectionServer* component.

Mib — CallRedirection

ATTRIBUTE Crs totalAddresses

Access — Read only

Description — The *totalAddresses* attribute indicates the number of *PrimaryAddress* components associated with the *CallRedirectionServer* component.

Mib — CallRedirection

Values — Decimal (0..4294967295)

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Default	0

ATTRIBUTE Crs requestsReceived (reqRx)

Access	Read only
Description	The *requestsReceived* attribute counts the number of redirection requests received by the *CallRedirectionServer* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs primaryMatches (pMatch)

Access	Read only
Description	The *primaryMatches* attribute counts the Call Redirection Server attempts to find a matching *PrimaryAddress* where the lookup attempt was successful. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs secAddressListExhausted (sAddrEx)

Access	Read only
Description	The *secAddressListExhausted* attribute counts the Call Redirection Server attempts to find a *SecondaryAddress* component given a *PrimaryAddress* component where the lookup attempt resulted in the exhaustion of the secondary redirection list. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs maxAddrLenExceeded (maxAddrExc)

Access	Read only
Description	The *maxAddrLenExceeded* attribute counts how often the concatenation of the secondary address and the suffix digits from the original called address have exceeded the maximum of 15 digits. The suffix digits can be determined by removing the primary address digits from the front of the original called address. If appending the suffix digits to a secondary address causes the resulting address to exceed 15 digits, this secondary member is skipped and the

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next secondary member is tried.

Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs secRidMidUnsuccessful (sRidMidUnsuc)

Access	Read only
Description	The *secRidMidUnsuccessful* attribute counts the number of RID/MID redirections resulting in the destination address not being reached. This situation could occur when the destination address does not exist on the specified module or the specified module could not be reached.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs secAddrUnsuccessful (sAddrUnsuc)

Access	Read only
Description	The *secAddrUnsuccessful* attribute counts the number of Address redirections resulting in the destination user not being reached. This situation could occur when the destination user line is disabled, the destination address does not exist on the specified module, or the specified module could not be reached.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs ridRedirected (ridRed)

Access	Read only
Description	The *ridRedirected* attribute counts requests received by the Call Redirection Server resulting in the request being redirected to another RID specified by the *AlternateRid* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs ridMidRedirected (ridMidRed)

Access	Read only

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Description	The *ridMidRedirected* attribute counts requests received by the Call Redirection Server resulting in the request being redirected to another RID/MID specified by the *SecondaryRidMid* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs addressRedirected (addrRed)

Access	Read only
Description	The *addressRedirected* attribute counts requests received by the Call Redirection Server resulting in the request being redirected to another Address specified by the *SecondaryAddress* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs altRidUnsuccessful (aRidUnsuc)

Access	Read only
Description	The *altRidUnsuccessful* attribute counts the number of RID redirections resulting in the destination address not being reached. This situation could occur when the alternate RID cannot be reached, the module hosting the destination address is isolated, or the port associated with the secondary address is unavailable at the alternate RID.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

COMPONENT Crs PrimaryAddress (PAddr)

Instance	String (1..17, NativeAddressWith15DigitX121)
Scope	Network
Description	*Crs PrimaryAddress*/<address> The *PrimaryAddress* component defines a primary address for which a list of alternate destinations are specified. This primary address has either a secondary RID/MID destination or up to seven secondary addresses associated with it. A primary address matches the original destination address if, beginning with the most significant digit, all digits are identical and the primary address is less than or equal to the original destination address in length. The “best match” is the longest such primary address.

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The PrimaryAddress component instance value takes the form:
x.<X.121 address> or e.<E.164 address>

Mib — CallRedirection

Opt. Subcomp. — COMPONENT Crs PAddr SecondaryRidMid (SRidMid)
COMPONENT Crs PAddr SecondaryAddress (SAddr)

Common Verbs — Help, List, Display, Add, DELete

COMPONENT Crs PAddr SecondaryRidMid (SRidMid)

Groups — GROUP Crs PAddr SRidMid RidMidProv

Scope — Network

Description — *Crs Paddr/<address> SecondaryRidMid*
The *SecondaryRidMid* component identifies an alternate destination module on which the primary address is also supported. RID/MID redirection allows the call redirection server to effectively override the original destination identified by the call routing system and forward the call to a different module.

Mib — CallRedirection

Common Verbs — Help, List, Display, Add, DELete

GROUP Crs PAddr SRidMid RidMidProv

Properties — Provisioned

Description — The *SecRidMidProv* group defines the secondary RID/MID pair associated with a specific primary address.

Mib — CallRedirection

ATTRIBUTE Crs PAddr SRidMid routingId (rid)

Access — Read and write

Description — This attribute specifies a group of one or more interconnected nodes (called a subnet) to which the primary address is redirected.

Mib — CallRedirection

Values — Decimal (1..126)

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Default	No default

ATTRIBUTE Crs PAddr SRidMid **moduleId (mid)**

Access	Read and write
Description	This attribute specifies a node to which the primary address is redirected.
Mib	CallRedirection
Values	Decimal (1..1909)
Default	No default

COMPONENT Crs PAddr **SecondaryAddress (SAddr)**

Instance	Decimal (1..7)
Groups	GROUP Crs PAddr SAddr SecAddrProv
Scope	Network
Description	Crs Paddr/<address> SecondaryAddress/n The SecondaryAddress component identifies an alternate destination address. Address redirection allows the call redirection server to effectively override the original destination address and forward the call to a different destination within the network.
Mib	CallRedirection
Common Verbs	Help List Display Add DELete

GROUP Crs PAddr SAddr **SecAddrProv**

Properties	Provisioned
Description	The *SecAddrProv* group defines one of the secondary addresses associated with a specific primary address.
Mib	CallRedirection

ATTRIBUTE Crs PAddr SAddr **address (addr)**

Access	Read and write
Description	This attribute specifies a secondary address to which the primary address is redirected. The *address* attribute includes the Numbering Plan Indicator (NPI) and the digits which form a unique identifier of the customer interface. The address may belong to the X.121 or E.164 addressing plan. Address digits are selected and assigned by network operators.

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	The *address* attribute takes the form: x.<X.121 address> or e.<E.164 address>
Mib	CallRedirection
Values	String (1..17, NativeAddressWith15DigitX121)
Default	No default

COMPONENT Crs AlternateRid (AltRid)

Groups	GROUP Crs AltRid AltRidProv
Scope	Network
Description	*Crs AlternateRid* The *AlternateRid* component defines the routing identifier value that is used as the alternate DPRS routing information when routing to the RID specified by the Call Router (CR) is unsuccessful. This component should only be provisioned as a temporary measure.When activated the RID redirection feature as significant impact on the normal redirection operation, since RID redirection is always attempted first. One of the possible application of this feature being RID splitting, the *AlternateRid* component should be deleted as soon as all module have been migrated from their original RID and the Call Router (CR) throughout the network have been updated with the new RID information.
Mib	CallRedirection
Common Verbs	Help List Display Add DELete

GROUP Crs AltRid AltRidProv

Properties	Provisioned
Description	The *AltRidProv* group defines the alternate RID associated with the *Crs* component.
Mib	CallRedirection

ATTRIBUTE Crs AltRid routingId (rid)

Access	Read and write
Description	This attribute specifies a group of one or more interconnected nodes (called a subnet) to which the request is redirected.
Mib	CallRedirection
Values	Decimal (1..126)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Crs

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COMPONENT CallRouter (CR)

Scope	Network
Description	CallRouter This component performs the call routing function. It is a database containing prefix-DNAs. Unlike the DNAs under the NumberingPlanIndicator component which are only local DNAs, the DNAs under this component can refer to local DNAs and DNAs resident on other nodes. This component represents a database that is used to translate a DNA in a call setup packet into a ModuleId or a RoutingId so that the call setup packet can be routed to the correct node within the subnet or to the correct subnet. This call router can only be used for a network composed of Nortel Networks Multiservice Switches. This call router only provides service when there is no CSRM attached to the subnet. If a CSRM is connected to the subnet, the CSRM will provide the call routing service.
Mib	CallServer
Opt. Subcomp.	COMPONENT CR NumberingPlanId (Npi)
Common Verbs	Help List Display Add DELete

COMPONENT CR NumberingPlanId (Npi)

Instance	x121 e164
Groups	GROUP CR Npi Statistics (Stats)
Scope	Network
Description	CallRouter NumberingPlanId/<x121,e164> This component collects all the prefix DNAs provisioned for a particular

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	numbering plan indicator. There are two numbering plans allowed, E.164 and X.121.
Mib	CallServer
Opt. Subcomp.	COMPONENT CR Npi DataNetworkAddress (Dna)
Common Verbs	Help List Display Add DELete

GROUP CR Npi Statistics (Stats)

Properties	Operational
Description	This group of attributes contains the statistics kept for a particular numbering plan indicator.
Mib	CallServer

ATTRIBUTE CR Npi totalDnas

Access	Read: All Write: Illegal
Description	This attribute contains the total number of prefix-DNAs provisioned.
Mib	CallServer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE CR Npi callsRouted

Access	Read: All Write: Illegal
Description	This attribute contains the total number of call setup packets routed. When the counter reaches the maximum, it wraps back to zero.
Mib	CallServer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE CR Npi callsFailed

Access	Read: All Write: Illegal
Description	This attribute contains the total number of call setup packets that failed to route. This could be caused by the MID or RID being unreachable or by the DNA failing to translate to a MID or RID. Check the prefix-DNA

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provisioning data and the DNAs associated to the endpoints of the connection. When the counter reaches the maximum, it wraps back to zero.

Mib	CallServer
Values	Decimal (0..4294967295)
Default	0

COMPONENT CR Npi DataNetworkAddress (Dna)

Instance	BCD (1..15, Wildcarded)
Groups	GROUP CR Npi Dna Provisioned (Prov)
Scope	Network
Description	Cr Npi/<x121,e164> Dna/<BCD(1..15, WILDCARDED)> This subcomponent represents a prefix-DNA in the numbering plan. The instance value must be 1 to 15 digits each of value 0 through 9 or wildcard.Wild digits may be used so that the digit position specified by the wild digit is ignored when making a routing decision. This will reduce the number of prefix-DNAs needed to properly route the calls. The wild digit is represented by “?”. Wildcarding inconsistencies can not exist. If a prefix-DNA already exists in the database with a specific digit in position 3, new prefix-DNAs may not be added with a wildcard in position 3. Similarly, if the prefix-DNA already exists with a wildcard in a particular position, a similar prefix-DNA cannot be added with a specific digit in the same position.
Mib	CallServer
Common Verbs	Help List Display Add DELete

GROUP CR Npi Dna Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes represents what the prefix-DNA maps to.
Mib	CallServer

ATTRIBUTE CR Npi Dna routingId

Access	Read: All Write: All
Description	This attribute identifies the routingId that the prefix-DNA maps to. If the value is set to zero, then the routingId is not used. Note that at least one

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	and only one of the attributes in this group must be set to a non-zero value.
Mib	CallServer
Values	Decimal (0..126)
Default	0

ATTRIBUTE CR Npi Dna moduleId

Access	Read: All Write: All
Description	This attribute contains the module identifier value that the DNA maps to. If the value is set to zero, then the moduleId is not used. Note that at least one and only one of the attributes in this group must be set to a non-zero value.
Mib	CallServer
Values	Decimal (0..1909)
Default	0

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Components Reference - CR

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Components Reference - DataSigC

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COMPONENT DataSignallingChannel (DataSigChan)

Instance	Decimal (1..255)
Groups	GROUP DataSigChan Provisioned (Prov) GROUP DataSigChan CustomerIdentifierData (CidData) GROUP DataSigChan IfEntryProv (IfEntry) GROUP DataSigChan OsiState (State) GROUP DataSigChan OperationalStatus (OperStatus)
Scope	Application
Description	*DataSignallingChannel/n* The *DataSignallingChannel* component defines the operational characteristics of the connection to the external ISDN PRI equipment. A *DataSignallingChannel* must be provisioned for each D-Channel.
Mib	DataIsdn
Subcomponents	COMPONENT DataSigChan CallControl (Cc)
Opt. Subcomp.	COMPONENT DataSigChan TS014 (TS014) COMPONENT DataSigChan Etsi (Etsi) COMPONENT DataSigChan JapanIns (Ins) COMPONENT DataSigChan NationalIsdn2 (Ni2) COMPONENT DataSigChan Nis (Nis)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP DataSigChan Provisioned (Prov)

Properties	Provisioned
Description	This group represents the provisionable attributes of a *DataSigChan*.
Mib	DataIsdn

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ATTRIBUTE DataSigChan commentText

Access	Read: All Write: All
Description	This attribute specifies the name of the customer that is using this *DataSigChan*. Typical use of this attribute is to store customer name.
Mib	DataIsdn
Values	String (0..40, ASCII)
Default	No default

GROUP DataSigChan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	DataIsdn

ATTRIBUTE DataSigChan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	DataIsdn
Values	Decimal (0; 1..8191)
Default	0

GROUP DataSigChan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	DataIsdn

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ATTRIBUTE DataSigChan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	DataIsdn
Values	up down testing
Default	up

ATTRIBUTE DataSigChan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	DataIsdn
Values	Decimal (1..65535)
Default	No default

GROUP DataSigChan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DataIsdn

ATTRIBUTE DataSigChan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — DataIsdn

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE DataSigChan operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — DataIsdn

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE DataSigChan usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — DataIsdn

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Values	idle active (activ) busy
Default	idle

GROUP DataSigChan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	DataIsdn

ATTRIBUTE DataSigChan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	DataIsdn
Values	up down testing
Default	up

COMPONENT DataSigChan CallControl (Cc)

Groups	GROUP DataSigChan Cc Statistics (Stats)
Scope	Application
Description	*DataSigChan/n CallControl* *This component defines the Call Control parameters and displays the statistics of the D-channel.*
Mib	DataIsdn
Subcomponents	COMPONENT DataSigChan Cc ChannelGroup (Cg)
Opt. Subcomp.	COMPONENT DataSigChan Cc Trace (Tr)
Dyn. Subcomp.	COMPONENT DataSigChan Cc Bchannel (Bch)
Common Verbs	Help List Display

GROUP DataSigChan Cc Statistics (Stats)

Properties	Operational

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Description	This group contains the statistics of the CallControl
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc totalValidInCalls (ic)

Access	Read only
Description	This attribute counts the total number of incoming calls (with valid mandatory IE contents and received in a valid ISDN state) from the interface. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc successfullInCalls (isc)

Access	Read only
Description	This attribute counts the total number of successfull valid incoming calls from the interface. Unsuccessful calls include those that have disallowed Capability (BC, LLC), screening indicator, or calling party number, and calls that are rejected due to requested channel busy. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc inInvalidCapability (iicap)

Access	Read only
Description	This attribute counts the number of valid incoming calls rejected due to an unsupported service capability, such as Information Transfer Rate, Class of Service, Protocol Standard. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc inInvalidScreen (iis)

Access	Read only
Description	This attribute counts the number of valid incoming calls rejected due to a screening indicator value not provisioned in the channel group's screeningIndicator attribute. This counter wraps to zero after reaching its maximum value.

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Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc inInvalidCgpn (iicgpn)

Access	Read only
Description	This attribute counts the number of valid incoming calls rejected due to the calling party number not beeing provisioned in any *channelGroup component of this call control. This counter wraps to zero after reaching its maximum value.*
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc inChannelBusy (icb)

Access	Read only
Description	This attribute counts the number of valid incoming calls rejected due to no available B-Channels. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc lastClearCause (lcc)

Access	Read only
Description	This attribute indicates the Q931 clear cause of the last valid call that is rejected or cleared.
Mib	DataIsdn
Values	Decimal (0..255)
Default	No default

ATTRIBUTE DataSigChan Cc lastClearedCallingPartyNumber (lccgpn)

Access	Read only
Description	This attribute shows the calling party number of the last valid call that is rejected or cleared.
Mib	DataIsdn
Values	BCD (1..14)

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Default	No default

COMPONENT DataSigChan Cc ChannelGroup (Cg)

Instance	Decimal (1..31)
Groups	GROUP DataSigChan Cc Cg CustomerIdentifierData (CidData) GROUP DataSigChan Cc Cg Provisioned (Prov) GROUP DataSigChan Cc Cg Statistics (Stats)
Scope	Application
Description	*DataSigChan/n Cc ChannelGroup/n* *A ChannelGroup defines the call allocation parameters and the channel list for a subgroup of users.*
Mib	DataIsdn
Opt. Subcomp.	COMPONENT DataSigChan Cc Cg CallingPartyNumber (Cgpn)
Dyn. Subcomp.	COMPONENT DataSigChan Cc Cg Bchannel (Bch)
Common Verbs	Help List Display Add DELete

GROUP DataSigChan Cc Cg CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Cg customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component.

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	Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	DataIsdn
Values	Decimal (0; 1..8191)
Default	0

GROUP DataSigChan Cc Cg Provisioned (Prov)

Properties	Provisioned
Description	This group defines the call admission parameters applied to the group of B-Channels.
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Cg commentText

Access	Read: All Write: All
Description	This attribute specifies the name of the customer that is using this *ChannelGroup. Typical use of this attribute is to store customer name.*
Mib	DataIsdn
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE DataSigChan Cc Cg screeningIndicator (si)

Access	Read and write
Description	This attribute defines the acceptable set of screening modes. The screening mode is carried by the Calling Party Number information element (IE) of the B-Channel request packet. There are four types of mode: upns - User provided, not screened upvp - User provided, verified and passed upvf - User provided, verified and failed np - Network provided When a call is received with a screening indicator not provisioned in the list, the call is cleared.
Mib	DataIsdn
Set of	upns upvp upvf np
Default	(upvp, np)

ATTRIBUTE DataSigChan Cc Cg channelAssignmentOrder (cao)

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Access	Read and write
Description	This attribute defines the order (ascending or descending) in which the B-Channels are allocated. This attribute is used only when it is not signalled in the call setup message.
Mib	DataIsdn
Values	ascending descending
Default	ascending

ATTRIBUTE DataSigChan Cc Cg **channelList (cl)**

Access	Read and write
Description	This attribute contains the list of B-Channel numbers forming the channel group. At least one channel must be specified.
Mib	DataIsdn
Set of	Decimal (1..31)
Default	No default

GROUP DataSigChan Cc Cg **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistics for a *ChannelGroup*
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Cg **totalInCalls (tic)**

Access	Read only
Description	This attribute counts the total number of incoming calls (with valid mandatory IE contents and received in a valid ISDN state) from the interface for this *channelGroup. This counter wraps to zero after reaching its maximum value.*
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc Cg **successfullInCalls (sic)**

Access	Read only
Description	This attribute counts the number of valid incoming calls for this *channelGroup. This counter wraps to zero after reaching its maximum value.*
Mib	DataIsdn

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc Cg rejectedNoChanAvail (rnca)

Access	Read only
Description	This attribute counts the number of rejected call because no channel were available under the selected channel group. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc Cg idleChannelCount (icc)

Access	Read only
Description	This attribute shows the number of B-channels in the channel group that are in idle state.
Mib	DataIsdn
Values	Decimal (0..255)
Default	0

ATTRIBUTE DataSigChan Cc Cg busyChannelCount (bcc)

Access	Read only
Description	This attribute shows the number of B-Channels in this channel group that are in busy state.
Mib	DataIsdn
Values	Decimal (0..255)
Default	0

COMPONENT DataSigChan Cc Cg CallingPartyNumber (Cgpn)

Instance	BCD (1..14)
Scope	Application
Description	*DataIsdn/n Cc Cg/n Cgpn/n* *This component identifies the acceptable calling party number by its instance number, which can consist up to a maximum of 14 decimal digits.*

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These are the numbers that are allowed to use the channels of this ChannelGroup.

Mib: DataIsdn

Common Verbs: Help, List, Display, Add, DELete

COMPONENT DataSigChan Cc Cg Bchannel (Bch)

Instance: Decimal (1..31)

Groups: GROUP DataSigChan Cc Cg Bch BchannelOpData (BchanOpData)

Scope: Application

Description: *DataSigChan/n Cc Bchannel/n*
DataSigChan/n Cc Cg/n Bchannel/n
This component identifies the B-channels associated with a CallControl or a ChannelGroup.

Mib: DataIsdn

Common Verbs: Help, List, Display

GROUP DataSigChan Cc Cg Bch BchannelOpData (BchanOpData)

Properties: Operational

Description: This group contains the operational data of a B-Channel.

Mib: DataIsdn

ATTRIBUTE DataSigChan Cc Cg Bch state

Access: Read only

Description: This attribute indicates the state of the B-channel. A B-channel is in idle state when it is available for a call. The busy state indicate that the B-channel is presently in use. The disabled state means that the access service is not enabled because it is locked or the port is down. The state noProtocolProvisioned means that the call control did not yet received the registration for this B-channel.

Mib: DataIsdn

Values: idle, busy, disabled, noProtocolProvisioned

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Default	No default

ATTRIBUTE DataSigChan Cc Cg Bch **callingPartyNumber (cgpn)**

Access	Read only
Description	This attribute indicates the calling party number of the last valid call request for this channel.
Mib	DataIsdn
Values	BCD (1..14)
Default	No default

ATTRIBUTE DataSigChan Cc Cg Bch **lastQ931ClearCause (cause)**

Access	Read only
Description	The clear cause of the last call on this B-channel.
Mib	DataIsdn
Values	Decimal (0..255)
Default	No default

ATTRIBUTE DataSigChan Cc Cg Bch **runningApplication (app)**

Access	Read only
Description	The name of the application running on this B-channel.
Mib	DataIsdn
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE DataSigChan Cc Cg Bch **callRefNumber (cref)**

Access	Read only
Description	This attribute indicates the call reference number for this B-channel. The call reference value is assigned by the originating side of the call and remains fixed for the lifetime of a call (except in the case of call suspension).
Mib	DataIsdn
Values	Decimal (0..65535)
Default	No default

COMPONENT DataSigChan Cc **Trace (Tr)**

Scope	Application

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Description	*DataIsdn/n CallControl Trace* *This component defines the Call Control trace component for the dataIsdn. It consists of the Pri/n subcomponent.*
Mib	DataIsdn
Dyn. Subcomp.	COMPONENT DataSigChan Cc Tr Pri
Common Verbs	Help List Display Add DELete

COMPONENT DataSigChan Cc Tr Pri

Instance	Decimal (0..3)
Scope	Application
Description	*DataIsdn/n CallControl Trace Pri/n* *The component displays the class data members of the isdn Pri/n class.*
Mib	DataIsdn
Dyn. Subcomp.	COMPONENT DataSigChan Cc Tr Pri Bch
Common Verbs	Help List Display

COMPONENT DataSigChan Cc Tr Pri Bch

Instance	Decimal (1..31)
Scope	Application
Description	*DataIsdn/n CallControl Trace Pri/n Bch/m* *The component displays the class data members of the isdn Pri/n Bch/m class.*
Mib	DataIsdn
Common Verbs	Help List Display

COMPONENT DataSigChan Cc Bchannel (Bch)

Instance	Decimal (1..31)
Groups	GROUP DataSigChan Cc Bch BchannelOpData (BchanOpData)
Scope	Application

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Description	*DataSigChan/n Cc Bchannel/n* *DataSigChan/n Cc Cg/n Bchannel/n* *This component identifies the B-channels associated with a CallControl or a ChannelGroup.*
Mib	DataIsdn
Common Verbs	Help List Display

GROUP DataSigChan Cc Bch BchannelOpData (BchanOpData)

Properties	Operational
Description	This group contains the operational data of a B-Channel.
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Bch state

Access	Read only
Description	This attribute indicates the state of the B-channel. A B-channel is in idle state when it is available for a call. The busy state indicate that the B-channel is presently in use. The disabled state means that the access service is not enabled because it is locked or the port is down. The state noProtocolProvisioned means that the call control did not yet received the registration for this B-channel.
Mib	DataIsdn
Values	idle busy disabled noProtocolProvisioned
Default	No default

ATTRIBUTE DataSigChan Cc Bch callingPartyNumber (cgpn)

Access	Read only
Description	This attribute indicates the calling party number of the last valid call request for this channel.
Mib	DataIsdn
Values	BCD (1..14)
Default	No default

ATTRIBUTE DataSigChan Cc Bch lastQ931ClearCause (cause)

Access	Read only
Description	The clear cause of the last call on this B-channel.

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Mib	DataIsdn
Values	Decimal (0..255)
Default	No default

ATTRIBUTE DataSigChan Cc Bch runningApplication (app)

Access	Read only
Description	The name of the application running on this B-channel.
Mib	DataIsdn
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE DataSigChan Cc Bch callRefNumber (cref)

Access	Read only
Description	This attribute indicates the call reference number for this B-channel. The call reference value is assigned by the originating side of the call and remains fixed for the lifetime of a call (except in the case of call suspension).
Mib	DataIsdn
Values	Decimal (0..65535)
Default	No default

COMPONENT DataSigChan TS014 (TS014)

Groups	GROUP DataSigChan TS014 Layer2Options (L2) GROUP DataSigChan TS014 Provisioned (Prov) GROUP DataSigChan TS014 Operational (Oper) GROUP DataSigChan TS014 Tools
Scope	Device
Description	*DataSigChan/n TS014* The *TS014* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	DisdnTS014
Subcomponents	COMPONENT DataSigChan TS014 Framer (Framer)
Common Verbs	Help List Display Add DELete

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GROUP DataSigChan TS014 Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnTS014
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan TS014 t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnTS014
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan TS014 n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnTS014
Values	Decimal (1..8)
Default	3

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ATTRIBUTE DataSigChan TS014 t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnTS014
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan TS014 n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnTS014
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan TS014 circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnTS014
Values	Decimal (1..632)
Default	7

GROUP DataSigChan TS014 Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnTS014

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ATTRIBUTE DataSigChan TS014 layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnTS014
Values	network user
Default	user

GROUP DataSigChan TS014 Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnTS014
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan TS014 peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnTS014
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan TS014 dChanStatus (dCh)

Access	Read: All Write: Illegal

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Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	DisdnTS014
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP **DataSigChan TS014** **Tools**

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnTS014

ATTRIBUTE **DataSigChan TS014** **tracing**

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring.

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Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib: DisdnTS014

Set of:
protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

Default: No default

COMPONENT DataSigChan TS014 Framer (Framer)

Groups:
GROUP DataSigChan TS014 Framer Provisioned (Prov)
GROUP DataSigChan TS014 Framer OsiState (State)
GROUP DataSigChan TS014 Framer Statistics (Stats)

COLLECTED STATS DataSignallingChannel TS014 Framer

Scope: Application

Description

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

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Mib	DisdnTS014
Common Verbs	Help List Display

GROUP DataSigChan TS014 Framer **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 Framer **interfaceName**

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	DisdnTS014
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan TS014 Framer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 Framer **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DisdnTS014
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan TS014 Framer **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	DisdnTS014
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DataSigChan TS014 Framer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib DisdnTS014

Values
idle
active (activ)
busy

Default idle

GROUP DataSigChan TS014 Framer **Statistics (Stats)**

Properties Operational

Description
This group contains the operational statistics data for a Framer component.

Mib DisdnTS014

ATTRIBUTE DataSigChan TS014 Framer **aborts**

Access Read only

Description
This attribute counts the total number of aborts received.
This count wraps to zero after reaching its maximum value.

Mib DisdnTS014

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan TS014 Framer **crcErrors**

Access Read only

Description
This attribute counts the total number of frames with CRC errors.
This count wraps to zero after reaching its maximum value.

Mib DisdnTS014

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan TS014 Framer **lrcErrors**

Access Read only

Description
This attribute counts the total number of frames with LRC errors.
This count wraps to zero after reaching its maximum value.

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Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer **nonOctetErrors**

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer **overruns**

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer **underruns**

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer **largeFrmErrors**

Access	Read only
Description	This attribute counts the total number of frames received which were too

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large. The frame was longer than 500 bytes.
This count wraps to zero after reaching its maximum value.

Mib DisdnTS014

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan TS014 Framer frmToIf

Access Read only

Description
The number of frames transmitted to the link interface by Framer.

Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer

Mib DisdnTS014

Values Long Integer

Default No default

ATTRIBUTE DataSigChan TS014 Framer frmFromIf

Access Read only

Description
The number of frames received from the link interface by Framer.

Mib DisdnTS014

Values Long Integer

Default No default

ATTRIBUTE DataSigChan TS014 Framer octetFromIf

Access Read only

Description The number of bytes received from the link interface by Framer.

Mib DisdnTS014

Values Long Integer

Default No default

COLLECTED STATS DataSignallingChannel TS014 Framer

Description The statistics record generated by the DataSignallingChannel TS014 Framer component.

ATTRIBUTE DataSigChan TS014 Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

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Values Long Integer

ATTRIBUTE DataSigChan TS014 Framer **rxFrames**

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan TS014 Framer **txBytes**

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan TS014 Framer **txFrames**

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan TS014 Framer **rxTotalLinkUtil**

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT DataSigChan **Etsi (Etsi)**

Groups
GROUP DataSigChan Etsi Layer2Options (L2)
GROUP DataSigChan Etsi Provisioned (Prov)
GROUP DataSigChan Etsi Operational (Oper)
GROUP DataSigChan Etsi Tools

Scope Device

Description *DataSigChan/n ETSI*
The *ETSI* component defines the operational characteristics of the signalling channel's connection to the external equipment.

Mib DisdnETSI

Subcomponents COMPONENT DataSigChan Etsi Framer (Framer)

Common Verbs
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Display
Add
DELete

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GROUP DataSigChan Etsi Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnETSI
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Etsi t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnETSI
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan Etsi n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnETSI
Values	Decimal (1..8)
Default	3

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ATTRIBUTE DataSigChan Etsi t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnETSI
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Etsi n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnETSI
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan Etsi circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnETSI
Values	Decimal (1..632)
Default	7

GROUP DataSigChan Etsi Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnETSI

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ATTRIBUTE DataSigChan Etsi layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnETSI
Values	network user
Default	user

GROUP DataSigChan Etsi Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnETSI
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Etsi peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnETSI
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Etsi dChanStatus (dCh)

Access	Read: All Write: Illegal

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Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	DisdnETSI
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP DataSigChan Etsi Tools

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring.

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Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib: DisdnETSI

Set of:
protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

Default: No default

COMPONENT DataSigChan Etsi Framer (Framer)

Groups:
GROUP DataSigChan Etsi Framer Provisioned (Prov)
GROUP DataSigChan Etsi Framer OsiState (State)
GROUP DataSigChan Etsi Framer Statistics (Stats)

COLLECTED STATS DataSignallingChannel Etsi Framer

Scope: Application

Description

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

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Mib	DisdnETSI
Common Verbs	Help List Display

GROUP DataSigChan Etsi Framer **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi Framer **interfaceName**

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	DisdnETSI
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan Etsi Framer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi Framer **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DisdnETSI
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan Etsi Framer **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	DisdnETSI
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DataSigChan Etsi Framer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib DisdnETSI

Values
idle
active (activ)
busy

Default idle

GROUP DataSigChan Etsi Framer Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics data for a Framer component.

Mib DisdnETSI

ATTRIBUTE DataSigChan Etsi Framer aborts

Access Read only

Description

This attribute counts the total number of aborts received.
This count wraps to zero after reaching its maximum value.

Mib DisdnETSI

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Etsi Framer crcErrors

Access Read only

Description

This attribute counts the total number of frames with CRC errors.
This count wraps to zero after reaching its maximum value.

Mib DisdnETSI

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Etsi Framer lrcErrors

Access Read only

Description

This attribute counts the total number of frames with LRC errors.
This count wraps to zero after reaching its maximum value.

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Mib	DisdnETSI
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Etsi Framer **nonOctetErrors**

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnETSI
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Etsi Framer **overruns**

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnETSI
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Etsi Framer **underruns**

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnETSI
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Etsi Framer **largeFrmErrors**

Access	Read only
Description	This attribute counts the total number of frames received which were too

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large. The frame was longer than 500 bytes.
This count wraps to zero after reaching its maximum value.

Mib DisdnETSI

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Etsi Framer frmToIf

Access Read only

Description
The number of frames transmitted to the link interface by Framer.

Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer

Mib DisdnETSI

Values Long Integer

Default No default

ATTRIBUTE DataSigChan Etsi Framer frmFromIf

Access Read only

Description
The number of frames received from the link interface by Framer.

Mib DisdnETSI

Values Long Integer

Default No default

ATTRIBUTE DataSigChan Etsi Framer octetFromIf

Access Read only

Description The number of bytes received from the link interface by Framer.

Mib DisdnETSI

Values Long Integer

Default No default

COLLECTED STATS DataSignallingChannel Etsi Framer

Description The statistics record generated by the DataSignallingChannel Etsi Framer component.

ATTRIBUTE DataSigChan Etsi Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

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Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer **rxFrames**

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer **txBytes**

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer **txFrames**

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer **rxTotalLinkUtil**

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT DataSigChan **JapanIns (Ins)**

Groups
GROUP DataSigChan Ins Layer2Options (L2)
GROUP DataSigChan Ins Provisioned (Prov)
GROUP DataSigChan Ins Operational (Oper)
GROUP DataSigChan Ins Tools

Scope Device

Description *DataSigChan/n JapanIns*
The *JapanIns* component defines the operational characteristics of the signalling channel's connection to the external equipment.

Mib DisdnJapanIns

Subcomponents COMPONENT DataSigChan Ins Framer (Framer)

Common Verbs
Help
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Display
Add
DELete

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GROUP DataSigChan Ins Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnJapanIns
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Ins t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnJapanIns
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan Ins n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnJapanIns
Values	Decimal (1..8)
Default	3

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ATTRIBUTE DataSigChan Ins **t203**

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnJapanIns
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Ins **n201**

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnJapanIns
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan Ins **circuitSwitchedK**

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnJapanIns
Values	Decimal (1..632)
Default	7

GROUP DataSigChan Ins **Provisioned (Prov)**

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnJapanIns

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ATTRIBUTE DataSigChan Ins **layer2HdlcMode**

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnJapanIns
Values	network user
Default	user

GROUP DataSigChan Ins **Operational (Oper)**

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins **activeChannels**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnJapanIns
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Ins **peakActiveChannels**

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnJapanIns
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Ins **dChanStatus (dCh)**

Access	Read: All Write: Illegal

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Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	DisdnJapanIns
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP DataSigChan Ins **Tools**

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins **tracing**

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring.

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Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib: DisdnJapanIns

Set of:
protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

Default: No default

COMPONENT DataSigChan Ins **Framer (Framer)**

Groups:
GROUP DataSigChan Ins Framer Provisioned (Prov)
GROUP DataSigChan Ins Framer OsiState (State)
GROUP DataSigChan Ins Framer Statistics (Stats)

COLLECTED STATS DataSignallingChannel JapanIns Framer

Scope: Application

Description

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

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Mib	DisdnJapanIns
Common Verbs	Help List Display

GROUP DataSigChan Ins Framer **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins Framer **interfaceName**

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	DisdnJapanIns
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan Ins Framer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins Framer **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DisdnJapanIns
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan Ins Framer **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	DisdnJapanIns
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DataSigChan Ins Framer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib DisdnJapanIns

Values
idle
active (activ)
busy

Default idle

GROUP DataSigChan Ins Framer **Statistics (Stats)**

Properties Operational

Description
This group contains the operational statistics data for a Framer component.

Mib DisdnJapanIns

ATTRIBUTE DataSigChan Ins Framer **aborts**

Access Read only

Description
This attribute counts the total number of aborts received.
This count wraps to zero after reaching its maximum value.

Mib DisdnJapanIns

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ins Framer **crcErrors**

Access Read only

Description
This attribute counts the total number of frames with CRC errors.
This count wraps to zero after reaching its maximum value.

Mib DisdnJapanIns

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ins Framer **lrcErrors**

Access Read only

Description
This attribute counts the total number of frames with LRC errors.
This count wraps to zero after reaching its maximum value.

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Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer **nonOctetErrors**

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer **overruns**

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer **underruns**

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer **largeFrmErrors**

Access	Read only
Description	This attribute counts the total number of frames received which were too

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large. The frame was longer than 500 bytes.
This count wraps to zero after reaching its maximum value.

Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer **frmToIf**

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer
Mib	DisdnJapanIns
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Ins Framer **frmFromIf**

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	DisdnJapanIns
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Ins Framer **octetFromIf**

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	DisdnJapanIns
Values	Long Integer
Default	No default

COLLECTED STATS DataSignallingChannel JapanIns Framer

Description	The statistics record generated by the DataSignallingChannel JapanIns Framer component.

ATTRIBUTE DataSigChan Ins Framer **rxBytes**

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

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Values Long Integer

ATTRIBUTE DataSigChan Ins Framer **rxFrames**

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer **txBytes**

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer **txFrames**

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer **rxTotalLinkUtil**

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT DataSigChan **NationalIsdn2 (Ni2)**

Groups
GROUP DataSigChan Ni2 Layer2Options (L2)
GROUP DataSigChan Ni2 Provisioned (Prov)
GROUP DataSigChan Ni2 Operational (Oper)
GROUP DataSigChan Ni2 Tools

Scope Device

Description *DataSigChan/n NationalIsdn2*
The *Ni2* component defines the operational characteristics of the signalling channel's connection to the external equipment.

Mib DisdnNI2

Subcomponents COMPONENT DataSigChan Ni2 Framer (Framer)

Common Verbs
Help
List
Display
Add
DELete

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GROUP DataSigChan Ni2 Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnNI2
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Ni2 t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnNI2
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan Ni2 n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnNI2
Values	Decimal (1..8)
Default	3

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ATTRIBUTE DataSigChan Ni2 t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnNI2
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Ni2 n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnNI2
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan Ni2 circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnNI2
Values	Decimal (1..632)
Default	7

GROUP DataSigChan Ni2 Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnNI2

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ATTRIBUTE DataSigChan Ni2 layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnNI2
Values	network user
Default	user

GROUP DataSigChan Ni2 Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnNI2
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Ni2 peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnNI2
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Ni2 dChanStatus (dCh)

Access	Read: All Write: Illegal

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Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	DisdnNI2
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP DataSigChan Ni2 Tools

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring.

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Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib: DisdnNI2

Set of:
protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

Default: No default

COMPONENT DataSigChan Ni2 Framer (Framer)

Groups:
GROUP DataSigChan Ni2 Framer Provisioned (Prov)
GROUP DataSigChan Ni2 Framer OsiState (State)
GROUP DataSigChan Ni2 Framer Statistics (Stats)

COLLECTED STATS DataSignallingChannel NationalIsdn2 Framer

Scope: Application

Description

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

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Mib	DisdnNI2
Common Verbs	Help List Display

GROUP DataSigChan Ni2 Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	DisdnNI2
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan Ni2 Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 Framer adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DisdnNI2
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan Ni2 Framer **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	DisdnNI2
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DataSigChan Ni2 Framer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib DisdnNI2

Values
idle
active (activ)
busy

Default idle

GROUP DataSigChan Ni2 Framer Statistics (Stats)

Properties Operational

Description
This group contains the operational statistics data for a Framer component.

Mib DisdnNI2

ATTRIBUTE DataSigChan Ni2 Framer aborts

Access Read only

Description
This attribute counts the total number of aborts received.
This count wraps to zero after reaching its maximum value.

Mib DisdnNI2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ni2 Framer crcErrors

Access Read only

Description
This attribute counts the total number of frames with CRC errors.
This count wraps to zero after reaching its maximum value.

Mib DisdnNI2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ni2 Framer lrcErrors

Access Read only

Description
This attribute counts the total number of frames with LRC errors.
This count wraps to zero after reaching its maximum value.

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Mib	DisdnNI2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ni2 Framer **nonOctetErrors**

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnNI2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ni2 Framer **overruns**

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnNI2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ni2 Framer **underruns**

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnNI2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ni2 Framer **largeFrmErrors**

Access	Read only
Description	This attribute counts the total number of frames received which were too

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large. The frame was longer than 500 bytes.
This count wraps to zero after reaching its maximum value.

Mib	DisdnNI2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ni2 Framer **frmToIf**

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer
Mib	DisdnNI2
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Ni2 Framer **frmFromIf**

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	DisdnNI2
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Ni2 Framer **octetFromIf**

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	DisdnNI2
Values	Long Integer
Default	No default

COLLECTED STATS DataSignallingChannel NationalIsdn2 Framer

Description	The statistics record generated by the DataSignallingChannel NationalIsdn2 Framer component.

ATTRIBUTE DataSigChan Ni2 Framer **rxBytes**

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

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Values Long Integer

ATTRIBUTE DataSigChan Ni2 Framer **rxFrames**

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Ni2 Framer **txBytes**

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ni2 Framer **txFrames**

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ni2 Framer **rxTotalLinkUtil**

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT DataSigChan **Nis (Nis)**

Groups
GROUP DataSigChan Nis Layer2Options (L2)
GROUP DataSigChan Nis Provisioned (Prov)
GROUP DataSigChan Nis Operational (Oper)
GROUP DataSigChan Nis Tools

Scope Device

Description *DataSigChan/n Nis*
The *Nis* component defines the operational characteristics of the signalling channel's connection to the external equipment.

Mib DisdnNIS

Subcomponents COMPONENT DataSigChan Nis Framer (Framer)

Common Verbs
Help
List
Display
Add
DELete

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GROUP DataSigChan Nis Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnNIS
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Nis t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnNIS
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan Nis n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnNIS
Values	Decimal (1..8)
Default	3

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ATTRIBUTE DataSigChan Nis t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnNIS
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Nis n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnNIS
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan Nis circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnNIS
Values	Decimal (1..632)
Default	7

GROUP DataSigChan Nis Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnNIS

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ATTRIBUTE DataSigChan Nis layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnNIS
Values	network user
Default	user

GROUP DataSigChan Nis Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnNIS
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Nis peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnNIS
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Nis dChanStatus (dCh)

Access	Read: All Write: Illegal

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Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	DisdnNIS
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP DataSigChan Nis Tools

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring.

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Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib: DisdnNIS

Set of:
protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

Default: No default

COMPONENT DataSigChan Nis Framer (Framer)

Groups:
GROUP DataSigChan Nis Framer Provisioned (Prov)
GROUP DataSigChan Nis Framer OsiState (State)
GROUP DataSigChan Nis Framer Statistics (Stats)

COLLECTED STATS DataSignallingChannel Nis Framer

Scope: Application

Description

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

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Mib	DisdnNIS
Common Verbs	Help List Display

GROUP DataSigChan Nis Framer **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis Framer **interfaceName**

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	DisdnNIS
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan Nis Framer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis Framer **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DisdnNIS
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan Nis Framer **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	DisdnNIS
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DataSigChan Nis Framer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib DisdnNIS

Values
idle
active (activ)
busy

Default idle

GROUP DataSigChan Nis Framer **Statistics (Stats)**

Properties Operational

Description
This group contains the operational statistics data for a Framer component.

Mib DisdnNIS

ATTRIBUTE DataSigChan Nis Framer **aborts**

Access Read only

Description
This attribute counts the total number of aborts received.
This count wraps to zero after reaching its maximum value.

Mib DisdnNIS

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Nis Framer **crcErrors**

Access Read only

Description
This attribute counts the total number of frames with CRC errors.
This count wraps to zero after reaching its maximum value.

Mib DisdnNIS

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Nis Framer **lrcErrors**

Access Read only

Description
This attribute counts the total number of frames with LRC errors.
This count wraps to zero after reaching its maximum value.

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Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer **nonOctetErrors**

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer **overruns**

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer **underruns**

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer **largeFrmErrors**

Access	Read only
Description	This attribute counts the total number of frames received which were too

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large. The frame was longer than 500 bytes.
This count wraps to zero after reaching its maximum value.

Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer
Mib	DisdnNIS
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Nis Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	DisdnNIS
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Nis Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	DisdnNIS
Values	Long Integer
Default	No default

COLLECTED STATS DataSignallingChannel Nis Framer

Description	The statistics record generated by the DataSignallingChannel Nis Framer component.

ATTRIBUTE DataSigChan Nis Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

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Values	Long Integer

ATTRIBUTE DataSigChan Nis Framer **rxFrames**

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Nis Framer **txBytes**

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Nis Framer **txFrames**

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Nis Framer **rxTotalLinkUtil**

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - DataSigC

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Dcl

NN10600-060

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Type: NTP
Language type: U.S. English

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COMPONENT DcmeLink (Dcl)

Instance	Decimal (1..14)
Groups	GROUP Dcl Provisioned (Prov) GROUP Dcl OsiState (State) GROUP Dcl Operational (Oper) GROUP Dcl Statistics (Stats)
Scope	Application
Description	*DcmeLink/n* This component defines the characteristics of a connection to an International Switching Centre (ISC). A *DcmeLink* is a collection of 64 kbit/s channels on the same physical E1 interface. There is one *DcmeLink* per physical link.
Mib	Dcme
Subcomponents	COMPONENT Dcl DataNetworkAddress (Dna) COMPONENT Dcl Framer (Framer)
Opt. Subcomp.	COMPONENT Dcl VoiceService (Vs)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dcl Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *DcmeLink*.
Mib	Dcme

ATTRIBUTE Dcl commentText (cTxt)

Access	Read: All Write: All

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Description	Use of this attribute is at the discretion of the system administrator. Typically, it specifies the name of the customer that is using this *DcmeLink*.
Mib	Dcme
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Dcl remoteNpi (rnpi)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the Numbering Plan Indicator used for the *remoteDna* attribute of this *DcmeLink*.
Mib	Dcme
Values	x121 e164
Default	e164

ATTRIBUTE Dcl remoteDna (rdna)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the Data Network Address (DNA) of the remote *DcmeLink*. This is the DNA of the peer *DcmeLink* to which the *DcmeLink* component establishes its Logical Connection (LC).
Mib	Dcme
Values	BCD (1..15)
Default	No default

ATTRIBUTE Dcl dcme

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the *Dcme* component that this *DcmeLink* belongs to.
Mib	Dcme
Values	Link (Service, dcmeLinks)
Default	No default

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ATTRIBUTE Dcl idlePattern

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies an *idlePattern* in the channel received from the E1 interface, which is required to determine if the channel is active or not. When the end of the *idlePattern* is detected it indicates the start of a new speech call. When this *idlePattern* is detected it indicates the end of a speech call. When changing this attribute make sure that the *alternateIdlePattern* signal is set correctly.
Mib	Dcme
Values	Hex (H.0..H.ff)
Units	Hex
Default	H.d5

ATTRIBUTE Dcl alternateIdlePattern

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies an *alternateIdlePattern* in the channel received from the E1 interface, after the end of a 64kbit/s call. The value of this attribute should be different than the value of the *idlePattern* attribute only if the ISC is programmed for Even/Odd Bit Inversion (EBI/OBI). This is only the case when the ISC is performing A to Mu or Mu to A Law conversion. When the end of the *alternateIdlePattern* is detected it indicates the start of a new speech call.
Mib	Dcme
Values	Hex (H.0..H.ff)
Units	Hex
Default	H.d5

GROUP Dcl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	Dcme

ATTRIBUTE Dcl adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dcme
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dcl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dcme
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcl usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dcme
Values	idle active (activ) busy
Default	idle

GROUP Dcl Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *DcmeLink* component.
Mib	Dcme

ATTRIBUTE Dcl activeSpeechCalls

Access	Read: All Write: Illegal
Description	This attribute indicates the number of speech calls that are currently in progress on this *DcmeLink*.
Mib	Dcme
Values	Decimal (0..30)
Default	0

ATTRIBUTE Dcl active3kHzCalls

Access	Read: All Write: Illegal
Description	This attribute indicates the number of audio 3.1 kHz calls that are currently in progress on this *DcmeLink*.
Mib	Dcme
Values	Decimal (0..30)
Default	0

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ATTRIBUTE Dcl active64kCalls

Access	Read: All Write: Illegal
Description	This attribute indicates the number of unrestricted 64 kbit/s calls that are currently in progress on this *DcmeLink*.
Mib	Dcme
Values	Decimal (0..30)
Default	0

ATTRIBUTE Dcl receivedTrmSignal

Access	Read only
Description	This attribute indicates the last TRM signal received from the ISC. The received TRM signal can be one of: ***Invalid (xxx)***: this signal should never be received, ***Switching Centre normal (101)***: this signal is always transmitted by the ISC when there is no other signal to be sent, ***Maintenance release ack(110)***: this signal is transmitted by the ISC if it accepts the maintenance release request, ***Dcme clear of traffic***: this signal is transmitted by the ISC if it has accepted the maintenance release request signal and now informs the DCME when all circuits are idle,
Mib	Dcme
Values	None(000) Invalid (001) Invalid (010) Invalid (011) Invalid (100) Switching Centre normal (101) Maintenance release ack (110) Dcme clear of traffic (111)
Default	No default

ATTRIBUTE Dcl transmittedTrmSignal

Access	Read only
Description	This attribute indicates the last TRM signal transmitted to the ISC. The transmitted TRM signal can be one of: ***Dcme normal (100)***: , this signal is always transmitted by the DCME when there is no other signal to be sent, ***No 64 kbit/s capacity (101)***: this signal is transmitted by the DCME when it is not able to handle new 64 kbit/s call requests, ***Maintenance release request(110)***: this signal is transmitted by the DCME when the DCME is to be removed from the service for maintenance,

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No capacity available (111) this signal is transmitted by the DCME when there is bearer capacity available to set up new 3.1 kHz audio or speech calls,

Mib	Dcme
Values	None(000) Dcme normal(100) No 64 kbit/s capacity (101) Maintenance release request (110) No capacity available (111)
Default	No default

GROUP Dcl Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *DcmeLink* component.
Mib	Dcme

ATTRIBUTE Dcl totalSpeechCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of speech calls that have been handled by this *DcmeLink*, including rejected calls. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl total3kHzCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of audio 3.1 kHz calls that have been handled by this *DcmeLink*, including rejected calls. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl total64kCalls

Access	Read: All Write: Illegal

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Description	This attribute counts the total number of unrestricted 64 kbit/s calls that have been handled by this *DcmeLink*, including rejected calls. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl rejectedSpeechCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of speech calls that have been rejected by this *DcmeLink* because there was no preestablished LC available. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl rejected3kHzCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of audio 3.1 KHz calls that have been rejected by this *DcmeLink* because there was no preestablished LC available. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl rejected64kCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unrestricted 64 kbit/s calls that have been rejected by this *DcmeLink*. This counter wraps to zero when it reaches its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Dcl invalidTrmSignals

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid TRM/Maintenance signals received from the ISC by this *DcmeLink*. The most probable cause of an invalid TRM/Maintenance signal is an invalid ISC provisioning or a transmission error. The invalid bit settings are 000, 001, 010, 011, 100. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

COMPONENT Dcl DataNetworkAddress (Dna)

Groups	GROUP Dcl Dna Address
Scope	Network
Description	*DcmeLink/n DataNetworkAddress* This is the description of the DCME link *Dna* component. It includes the attributes which apply to all connections established between *DcmeLink* and its peer *DcmeLink*.
Mib	Dcme
Common Verbs	Help List Display

GROUP Dcl Dna Address

Properties	Provisioned
Description	The *Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. The string of address digits is complemented by the type of address or Npi. These attributes are used to interpret the format of the address digits.
Mib	Dcme

ATTRIBUTE Dcl Dna numberingPlanIndicator (npi)

Access	Read: All Write: All
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. An address may belong to the X.121 or E.164 numbering plans. X.121 is used in packet switched data networks.
Mib	Dcme

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Values	x121 e164
Default	e164

ATTRIBUTE Dcl Dna dataNetworkAddress (dna)

Access	Read: All Write: All
Description	The *Dna* attribute contains digits which form a unique identifier of the customer interface. It can be compared (approximation only) to a telephone number where each phone number identifies a unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	Dcme
Values	BCD (1..15)
Default	No default

COMPONENT Dcl Framer (Framer)

Groups	GROUP Dcl Framer Provisioned (Prov) GROUP Dcl Framer OsiState (State)
Scope	Application
Description	*DcmeLink/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on the link interface to the ISC. It is also through the *Framer* that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).
Mib	Dcme
Common Verbs	Help List Display

GROUP Dcl Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component.

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Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib Dcme

ATTRIBUTE Dcl Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib Dcme

Values Link (Hardware, applicationFramerName)

Default No default

GROUP Dcl Framer OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Dcme

ATTRIBUTE Dcl Framer adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	Dcme
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dcl Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dcme
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcl Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dcme
Values	idle active (activ) busy
Default	idle

COMPONENT Dcl VoiceService (Vs)

Instance	Decimal (1..31)

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Groups	GROUP Dcl Vs Provisioned (Prov) GROUP Dcl Vs Operational (Oper) GROUP Dcl Vs Statistics (Stats) GROUP Dcl Vs OsiState (State)
Scope	Application
Description	*DcmeLink/n DcmeVoiceService/n* The *DcmeVoiceService* component defines the operational characteristics of the connection to a International Switching Centre (ISC). One instance of this component is required for each channel (that is, timeslot) which is part of the *DcmeLink*.
Mib	Dcme
Subcomponents	COMPONENT Dcl Vs Framer (Framer)
Dyn. Subcomp.	COMPONENT Dcl Vs LogicalConnection (LCo)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dcl Vs Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *DcmeVs* component.
Mib	Dcme

ATTRIBUTE Dcl Vs vsType

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of calls offered by this *DcmeVs*. If the value ***permanent64kVs*** is selected the 64 kbit/s call is established on the channel associated with this *DcmeVs* upon system activation. If this call is cleared due to the subnet failure it is reestablished again by the DcmeLink. If the value ***dynamicVs*** is selected this channel can be used to establish user selected calls.
Mib	Dcme
Values	dynamicVs permanent64kVs
Default	dynamicVs

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GROUP Dcl Vs Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *DcmeVoiceService* component.
Mib	Dcme

ATTRIBUTE Dcl Vs status

Access	Read: All Write: Illegal
Description	This attribute indicates the current status of the channel. ***idle*** means that there is no call currently active on this channel. ***seized*** means that the channel has currently an active call.
Mib	Dcme
Values	idle seized
Default	No default

ATTRIBUTE Dcl Vs callType (ct)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of call that this channel is currently carrying. If no call is active, then it displays the value for the last call.
Mib	Dcme
Values	none speech 3.1 kHz 64 kbit/s
Default	No default

ATTRIBUTE Dcl Vs receivedAbBits

Access	Read only
Description	This attribute indicates the most recently received AB bits.
Mib	Dcme
Values	None (00) Normal service available (01) 3.1 kHz request (10) 64 kbit/s request (11)
Default	No default

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ATTRIBUTE Dcl Vs transmittedAbBits

Access	Read only
Description	This attribute indicates the AB bits currently being transmitted.
Mib	Dcme
Values	None(00) Normal service available (01) Special service ack (10) Channel out of service (11)
Default	No default

GROUP Dcl Vs Statistics (Stats)

Properties	Operational
Description	This group provides the operational attributes for the *DcmeVoiceService* component.
Mib	Dcme

ATTRIBUTE Dcl Vs totalCalls (tc)

Access	Read: All Write: Illegal
Description	This attribute counts the call attempts processed on this channel (in both directions). This count includes both successful and unsuccessful calls. The value wraps when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl Vs totalCallSeconds (tcs)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of seconds that this channel is handling a call. This is regardless of whether the call is successful or not. In other words, this is the amount of time that the channel is not in the idle state. The value wraps when it reaches its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Units	seconds
Default	0

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ATTRIBUTE Dcl Vs invalidAbBits

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid AB bits signals received from the ISC on this channel. The invalid bit setting is 00. This counter wraps to zero when it reaches its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

GROUP Dcl Vs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dcme

ATTRIBUTE Dcl Vs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dcme
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Dcl Vs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dcme
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcl Vs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dcme
Values	idle active (activ) busy
Default	idle

COMPONENT Dcl Vs Framer (Framer)

Groups	GROUP Dcl Vs Framer Provisioned (Prov) GROUP Dcl Vs Framer OsiState (State) GROUP Dcl Vs Framer Statistics (Stats) GROUP Dcl Vs Framer Operational (Oper) GROUP Dcl Vs Framer Negotiation (Neg)

COLLECTED STATS DcmeLink VoiceService Framer

Scope	Device

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Description	*Vsr/n Svs/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *E1* or *DS1*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts).
Mib	Dcme
Dyn. Subcomp.	COMPONENT Dcl Vs Framer VfpDebug COMPONENT Dcl Vs Framer MvpDebug COMPONENT Dcl Vs Framer PcmCapture (PcmCapture)
Common Verbs	Help List Display

GROUP Dcl Vs Framer **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	Dcme

ATTRIBUTE Dcl Vs Framer **interfaceName**

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	Dcme
Values	Link (Hardware, applicationFramerName)
Default	No default

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GROUP Dcl Vs Framer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dcme

ATTRIBUTE Dcl Vs Framer **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dcme
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dcl Vs Framer **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Dcme
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcl Vs Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dcme
Values	idle active (activ) busy
Default	idle

GROUP Dcl Vs Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	Dcme

ATTRIBUTE Dcl Vs Framer totalCells

Access	Read only
Description	This attribute counts the cells received from the interface. Each cell contains 44 bytes of data from the DS0 channel. Since a DS0 provides data at 64kbit/s, each cell contains 5.5 ms of audio data. This data flow is measured before compression is performed on the channel. The counter wraps to zero when it exceeds its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Dcl Vs Framer audioCells

Access	Read only
Description	This attribute counts the total number of cells containing audio data received from the interface while the channel was seized. A CCS channel is always considered to be seized. Audio data includes cells containing voice as well modem audio, but not silence. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer silenceCells

Access	Read only
Description	This attribute counts the total number of cells containing silence data received from the interface which was not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the operation of the silence suppression feature or for CAS channels when the ABCD signalling bits go idle. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer lrcErrors

Access	Read only
Description	This attribute counts the number of frames received from the network with LRC errors.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer frmLostInNetwork

Access	Read only
Description	This attribute counts the number of frames which the service knows it did not receive from the network although they were sent in to the network from the far end.

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Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer frmUnderRuns

Access	Read only
Description	This attribute counts the number of times that a frame was needed but was not available because it had been delayed too long in the network. This error may occur repeatedly if the interface clocks at the two access points to the network are operating at different rates.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer frmDumped

Access	Read only
Description	This attribute counts the number of frames which have been dumped because the output queue grew too large. This can occur if the clock rate on the incoming interface is faster than the clock rate on the outgoing interface and there are no silence periods to absorb the difference, or when a compression rate change occurs. This count wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer faxRelayCells

Access	Read only
Description	This attribute counts the total number of fax relay cells sent to the network. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer modemFaxCells

Access	Read only
Description	This attribute counts the total number of cells containing modem data received from the interface while the channel was seized. A CCS channel

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	is always considered to be seized. Cells are considered to be modem data if a constant energy level above -25 dBmO is detected for more than 900 ms. An energy level below -36 dBmO for more than 650 ms is required to detect that the modem is no longer present. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer faxIdleCells

Access	Read only
Description	This attribute counts the total number of cells containing silent fax data received from the interface which were not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the silence Suppression feature or for CAS channels when the ABCD signalling bits go idle. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer frmToNetwork

Access	Read only
Description	This attribute counts the number of frames sent to the network at each encoding rate. Fax relay cells are not included.
Mib	Dcme
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

ATTRIBUTE Dcl Vs Framer frmFromNetwork

Access	Read only

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Description	This attribute counts the number of frames received from the network at each encoding rate.
Mib	Dcme
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

GROUP Dcl Vs Framer **Operational (Oper)**

Properties	Operational
Description	This group contains the operational data for a *Svs Framer*.
Mib	Dcme

ATTRIBUTE Dcl Vs Framer **currentEncoding**

Access	Read only
Description	This attribute indicates the encoding currently being performed on this channel. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is being performed. ***g726*** indicates that adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 is being performed. ***g728*** indicates that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 is being performed. ***g729*** indicates that the Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 is being performed. ***v27*** indicates that the algorithm defined by ITU-T V.27 is being performed. ***v29*** indicates that the algorithm defined by ITU-T V.29 is being performed.
Mib	Dcme
Values	none g729 g728 g723 g726 g711 v22 v22bis faxRelay v27 v29 v17
Default	No default

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ATTRIBUTE Dcl Vs Framer currentRate

Access	Read only
Description	This attribute indicates the current encoding rate for frames being sent to the network.
Mib	Dcme
Values	0 0.3 1.2 2.4 4.8 5.3 6.3 7.2 8.0 9.6 12.0 14.4 16.0 24.0 32.0 64.0
Units	kbit/s
Default	No default

ATTRIBUTE Dcl Vs Framer tptStatus

Access	Read only
Description	This attribute indicates the current status of the tandem pass through algorithm. If *tptStatus* is ***operating,*** the tandem pass through algorithm is cutting through a voice switch. If *tptStatus* is ***monitoring***, *negotiatedTandemPassThrough* is ***enabled***, but the tandem pass through algorithm is not cutting through a voice switch. If *tptStatus* is ***disabled***, *negotiatedTandemPassThrough* is ***disabled***.
Mib	Dcme
Values	operating monitoring disabled
Default	No default

GROUP Dcl Vs Framer Negotiation (Neg)

Properties	Operational
Description	This group contains the attributes indicating the results of voice networking end to end negotiation.

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Mib	Dcme

ATTRIBUTE Dcl Vs Framer negotiatedSilenceSuppression (nSilenceSuppression)

Access	Read and write
Description	This attribute indicates the result of negotiating silence suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp silenceSuppression*. If *negotiatedSilenceSuppression* is ***off***, silence suppression is never performed. If *negotiatedSilenceSuppression* is ***on***, silence suppression is always performed. If *negotiatedSilenceSuppression* is ***congested***, silence suppression is performed only when the network is congested. If *negotiatedSilenceSuppression* is ***slow***, silence suppression begins after 10 to 20 seconds without any speech or audio being detected. If *negotiatedSilenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are applied.
Mib	Dcme
Values	off on congested slow slowAndCongested
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedFisG711G726 (nFisG711G726)

Access	Read and write
Description	This attribute indicates the result of negotiating G.711/G.726 fax idle suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp faxIdleSuppressionG711G726*.
Mib	Dcme
Values	off on
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedDtmfRegeneration (nDtmfRegeneration)

Access	Read and write
Description	This attribute indicates the result of negotiating DTMF regeneration with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp dtmfRegeneration*. If *negotiatedDtmfRegeneration* is ***on***, DTMF tones received from the link

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	are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is generated before being sent to the link. If *negotiatedDtmfRegeneration* is ***off***, DTMF tones are transported transparently.
Mib	Dcme
Values	off on
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedV17AsG711G726 (nV17AsG711G726)

Access	Read only
Description	This attribute indicates how this *SwitchedVoiceService* negotiates with V.17 fax machines, as determined by negotiation with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp v17EncodedAsG711G726*. If *negotiatedV17AsG711G726* is ***no,*** V.17 fax machines are instructed to use V.29, and V.29 fax traffic sent by fax machines is demodulated and encoded using fax relay. If *negotiatedV17AsG711G726* is ***yes***, V.17 fax machines are permitted to use V.17 and V.17 fax traffic sent by fax machines is encoded using G.711 or G.726, at the rates given in *negotiatedRates*.
Mib	Dcme
Values	yes no
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedTandemPassThrough (nTpt)

Access	Read only
Description	This attribute indicates the result of negotiating tandem pass through with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp tandemPassThrough*.
Mib	Dcme
Values	enabled disabled
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedEncoding (nEncoding)

Access	Read and write

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Description	This attribute indicates the results of negotiating audio call encodings for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *Vncs Vp voiceEncodingChoice* and *Vncs Vp modemFaxEncodingChoice*. ***voice*** traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ***modemFax*** traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. ***fax*** traffic is all traffic after a fax preamble but before speech or call release. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is the negotiated encoding. ***g726*** indicates that Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 is the negotiated encoding. ***g711G726*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 and Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 are both negotiated encodings. If *negotiatedEncoding* is ***g711G726***, the actual encoding performed can be either G.711 or G.726, depending on network congestion. ***g728*** indicates that Low Delay Coded Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.728 is the negotiated encoding. ***g729*** indicates that Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.729 is the negotiated encoding. ***v29V27Relay*** indicates that fax relay using ITU-T V.29 or ITU-T V.27 is the negotiated encoding. ***v17V29V27Relay*** indicates that fax relay using ITU-T V.17, ITU-T V.29, or ITU-T V.27 is the negotiated encoding. If all negotiated encodings are ***none***, the negotiation of audio call encodings is not complete.
Mib	Dcme
Vector of	g711 g726 g711G726 g728 g729 v29V27Relay v17V29V27Relay none
Index	voice modemFax fax
Default	No default

ATTRIBUTE Dcl Vs Framer **negotiatedRates (nRates)**

Access	Read and write

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Description	This attribute indicates the results of negotiating minimum and maximum rates for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *Vncs Vp voiceRates* and *Vncs Vp modemFaxRates*.
Mib	Dcme
Array of	8.0 16.0 24.0 32.0 64.0 0.0 0.3 1.2 2.4 4.8 7.2 9.6 12.0 14.4
Units	kbit/s
Row	traffic [voice modemFax fax]
Column	rate [min max]
Default	No default

COLLECTED STATS DcmeLink VoiceService Framer

Description	The statistics record generated by the DcmeLink VoiceService Framer component.

ATTRIBUTE Dcl Vs Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Dcl Vs Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Dcl Vs Framer txBytes

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Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Dcl Vs Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Dcl Vs Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Dcl Vs Framer VfpDebug

Scope	Application
Description	*Vsr/m Svs/n Framer VfpDebug* This component contains debugging attributes for a voice service running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** functional processor.
Mib	Dcme
Common Verbs	Help List Display

COMPONENT Dcl Vs Framer MvpDebug

Scope	Application
Description	*Vsr/m Svs/n Framer MvpDebug* This component contains debugging attributes on a voice service's framer running on a ***1pE1Mvp***, ***1pDS1Mvp*** or ***1pTTC2mMvp*** functional processor.
Mib	Dcme
Common Verbs	Help List Display

COMPONENT Dcl Vs Framer PcmCapture (PcmCapture)

Scope	Application

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Description — *Vsr/n Svs/m Framer PcmCapture*
This component contains attributes for PCM data capture.

Mib — Dcme

Common Verbs — Help, List, Display

COMPONENT Dcl Vs LogicalConnection (LCo)

Groups — GROUP Dcl Vs LCo PathData
GROUP Dcl Vs LCo Statistics (Stats)

Scope — Application

Description — *...Lc*
This component contains all of the operation attributes for a Path Oriented Logical Connection.

Mib — Dcme

Common Verbs — Help, List, Display

VERB RERoute Dcl Vs LCo

Impact — Service

Description — RERoute ..Lc
This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified.
This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively.

When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path.

If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Dcl Vs LCo PathData

Properties — Operational

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Description	This group contains all operational attributes for the path oriented LCo.
Mib	Dcme

ATTRIBUTE Dcl Vs LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	Dcme
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE Dcl Vs LCo overrideRemoteName (orn)

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	Dcme
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Dcl Vs LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	Dcme

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Values	calling called
Default	No default

ATTRIBUTE Dcl Vs LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	Dcme
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Dcl Vs LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	Dcme
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Dcl Vs LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value

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	of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	Dcme
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Dcl Vs LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	Dcme
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Dcl Vs LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	Dcme
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Dcl Vs LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	Dcme
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Dcl Vs LCo requiredRxBandwidth (rbw)

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Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	Dcme
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Dcl Vs LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.
Mib	Dcme
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Dcl Vs LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

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Mib	Dcme
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Dcl Vs LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	Dcme
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Dcl Vs LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	Dcme
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Dcl Vs LCo emissionPriority (epri)

Access	Read only

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Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	Dcme
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Dcl Vs LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	Dcme
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Dcl Vs LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	Dcme

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Values	normal manual forced
Default	No default

ATTRIBUTE Dcl Vs LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	Dcme
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Dcl Vs LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	Dcme
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Dcl Vs LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	Dcme

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Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE Dcl Vs LCo lastTearDownReason

Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up. ***normalShutDown*** - This path has gone down due to normal call termination. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction. ***insufficientRxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction. ***trunkFailure***- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute. ***trunkCardFailure***- A trunk FP card has failed along the path. ***accessCardFailure***- The FP on which the peer access service was running has failed. ***operatorForced***- The path has terminated due to the operator locking a trunk along the path. ***lostLcnClash***- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC. ***networkCongestion*** - The path has failed due to control information being

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lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib

Dcme

Values

none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached

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farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default — none

ATTRIBUTE Dcl Vs LCo pathFailureAction

Access — Read only

Description — This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.

All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends

Mib — Dcme

Values — reRoutePath
disconnectConnection

Default — No default

ATTRIBUTE Dcl Vs LCo bumpPreference (bpref)

Access — Read only

Description — This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority.* A connection may also always bump in order to obtain the best route.

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Mib	Dcme
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Dcl Vs LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	Dcme
Values	disabled enabled
Default	No default

ATTRIBUTE Dcl Vs LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	Dcme
Values	Time (DHMS)
Default	No default

ATTRIBUTE Dcl Vs LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	Dcme
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Dcl Vs LCo Statistics (Stats)

Properties	Operational

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Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	Dcme

ATTRIBUTE Dcl Vs LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	Dcme
Values	Long Integer
Default	No default

ATTRIBUTE Dcl Vs LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	Dcme
Values	Long Integer
Default	No default

ATTRIBUTE Dcl Vs LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	Dcme
Values	Long Integer
Default	No default

ATTRIBUTE Dcl Vs LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	Dcme
Values	Long Integer
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Dcl

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Dcme

NN10600-060

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COMPONENT Dcme

Instance	Decimal (1..16)
Groups	GROUP Dcme Provisioned (Prov) GROUP Dcme OsiState (State) GROUP Dcme Operational (Oper) GROUP Dcme Statistics (Stats)
Scope	Application
Description	*Dcme/n* This component defines the common characteristics of a set of connections to an International Switching Centre (ISC) equipment.
Mib	Dcme
Subcomponents	COMPONENT Dcme Profile
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dcme Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *Dcme* component.
Mib	Dcme

ATTRIBUTE Dcme commentText (cTxt)

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, it specifies the name of the customer that is using this *Dcme*.
Mib	Dcme

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Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Dcme preestablishedConnections (pCon)

Access	Read: All Write: All
Description	This attribute specifies the number of Logical Connections (LC) preestablished between each *DcmeLink* associated with this *Dcme* and its remote peer, that are established beyond those that are required to carry established connections. Those are the standby LCs to be used for the subsequent user speech or audio 3.1 kHz calls. This attribute should be set to the number of speech and audio 3.1 kHz calls expected in a typical burst of calls received from the ISC on one *DcmeLink*.
Mib	Dcme
Values	Decimal (1..30)
Default	5

ATTRIBUTE Dcme trmThreshold (tThresh)

Access	Read: All Write: All
Description	This attribute is used to determine when the *DcmeLink* may be unable to handle incoming calls from the ISC. If the Dcme fails to replenish the number of preestablished connections the “No trunk(s) available for 3.1 kHz audio or speech” TRM signal is sent to the ISC.
Mib	Dcme
Values	Decimal (0..30)
Default	1

ATTRIBUTE Dcme trmSignalChangeInterval (tScI)

Access	Read: All Write: All
Description	This attribute specifies a minimum time interval between TRM signal change from “No trunk(s) available for 3.1 kHz audio or speech” or “No 64 kbit/s capacity available” to “DCME normal” signal.
Mib	Dcme
Values	Decimal (10..300)
Units	seconds
Default	20

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ATTRIBUTE Dcme speechAlarmThreshold (sat)

Access	Read: All Write: All
Description	This attribute specifies how many normal speech calls can be rejected by one *dcmeLink* within the *alarmTimeInterval* time before a SET alarm is generated. This alarm is cleared when the number of rejected speech calls is less than *speechAlarmThreshold* in a subsequent interval. If the value is 0 the rejected speech calls are not monitored.
Mib	Dcme
Values	Decimal (0..1000)
Default	0

ATTRIBUTE Dcme audio3kHzAlarmThreshold (aat)

Access	Read: All Write: All
Description	This attribute specifies how many audio 3.1 kHz calls can be rejected by one *dcmeLink* within the *alarmTimeInterval* time before a SET alarm is generated. This alarm is cleared when the number of rejected audio 3.1 kHz calls is less than *audio3kHzAlarmThreshold* in a subsequent interval. If the value is 0 the rejected audio 3.1 kHz calls are not monitored.
Mib	Dcme
Values	Decimal (0..1000)
Default	0

ATTRIBUTE Dcme unrestricted64kAlarmThreshold (uat)

Access	Read: All Write: All
Description	This attribute specifies how many unrestricted 64 kbit/s calls can be rejected by one *dcmeLink* within the *alarmTimeInterval* time before a SET alarm is generated. This alarm is cleared when the number of rejected unrestricted 64 kbit/s calls is less than *unrestricted64kAlarmThreshold* in a subsequent interval. If the value is 0 the rejected unrestricted 64 kbit/s calls are not monitored.
Mib	Dcme
Values	Decimal (0..1000)
Default	0

ATTRIBUTE Dcme alarmTimeInterval (ati)

Access	Read: All Write: All

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Description	This attribute specifies the time interval within which the rejected speech calls, audio 3.1 kHz calls, and unrestricted 64 kbit/s calls are monitored. It is used in the conjunction with the *speechAlarmThreshold*, *audio3kHzAlarmThreshold,* and *unrestricted64kAlarmThreshold* attributes.
Mib	Dcme
Values	Decimal (0..120)
Units	minutes
Default	5

ATTRIBUTE Dcme maxUnrestricted64kCalls (umax)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of simultaneous dynamic unrestricted 64 kbit/s calls that can be established. A value of 0 means that no dynamic unrestricted 64 kbit/s calls can be established.
Mib	Dcme
Values	Decimal (0..420)
Default	420

ATTRIBUTE Dcme dcmeLinks (dLinks)

Access	Read: All Write: All
Description	This attribute specifies all of the *DcmeLink*s which are associated with this *Dcme*. There can be up to 14 *DcmeLinks* associated with one *Dcme*.
Mib	Dcme
List of	Link (Service, dcme)
List Size	14
Default	No default

GROUP Dcme OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dcme

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ATTRIBUTE Dcme adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dcme
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dcme operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dcme
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcme usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Dcme
Values	idle active (activ) busy
Default	idle

GROUP Dcme Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Dcme* component.
Mib	Dcme

ATTRIBUTE Dcme activeDcmeLinks

Access	Read: All Write: Illegal
Description	This attribute indicates all of the *DcmeLink* components that are currently active and have registered with this *Dcme*.
Mib	Dcme
List of	The name of the component
List Size	14
Default	No default

GROUP Dcme Statistics (Stats)

Properties	Operational
Description	This group contains the statistics maintained by this *Dcme*.
Mib	Dcme

ATTRIBUTE Dcme trm64kNotAvailable

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the TRM signal was changed to the “No 64 kbit/s capacity available” signal. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcme trmSpeechNotAvailable

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the TRM signal was changed to the “No trunk(s) available for 3.1 kHz audio or speech” signal. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

COMPONENT Dcme Profile

Groups	GROUP Dcme Profile LogicalConnectionOptions (LCOps) GROUP Dcme Profile FramerOptions (FrOps)
Scope	Application
Description	*Dcme/n DcmeProfile* This component defines the ISC interface characteristics of the *Dcme* component.
Mib	Dcme
Common Verbs	Help List Display

GROUP Dcme Profile LogicalConnectionOptions (LCOps)

Properties	Provisioned
Description	This group contains attributes used in setting up Switched Logical Connections (SLC) over the network using the Path Oriented Routing System (PORS) between two peer *DcmeLink* components.
Mib	Dcme

ATTRIBUTE Dcme Profile setupPriority (spri)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The

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	holdingPriority, a complementary attribute of this attribute, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	Dcme
Values	Decimal (0..4)
Default	2

ATTRIBUTE Dcme Profile holdingPriority (hpri)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the priority that a path holds once it is established. Zero is the highest priority and four is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	Dcme
Values	Decimal (0..4)
Default	2

ATTRIBUTE Dcme Profile bumpPreference (bpref)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *setupPriority* in order to acquire its bandwidth and be established. If *bumpPreference* is ***bumpWhenNecessary***, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. If *bumpPreference* is ***bumpToObtainBestRoute,*** bumping occurs in order to use the best available route it may have.
Mib	Dcme
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

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ATTRIBUTE Dcme Profile **requiredTrafficType (rttyp)**

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.
Mib	Dcme
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	voice

ATTRIBUTE Dcme Profile **permittedTrunkTypes (pttyp)**

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies up to eight types of trunks that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types are defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS chooses only trunks whose *trunkType*s are in the *permittedTrunkTypes* for the path.
Mib	Dcme
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)

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Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Dcme Profile requiredSecurity (rsec)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	Dcme
Values	Decimal (0..7)
Default	4

ATTRIBUTE Dcme Profile requiredCustomerParm (rcparm)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. The value of *requiredCustomerParm* ranges from 0 to 7. The meaning of each value is specific to a particular network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	Dcme
Values	Decimal (0..7)
Default	4

ATTRIBUTE Dcme Profile pathAttributeToMinimize (pamin)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metrics for all trunks included in the route.

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Mib	Dcme
Values	cost delay
Default	cost

ATTRIBUTE Dcme Profile maximumAcceptableCost (maxCost)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done for any minimization criterion. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.
Mib	Dcme
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Dcme Profile maximumAcceptableDelay (maxDelay)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delays of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512-byte packet. During its staging, a trunk measures a *measuredRoundTripDelay*. This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512-byte packet is used to perform the measurement. If for any trunk the half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay*.
Mib	Dcme

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Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Dcme Profile emissionPriority (epri)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. An *emissionPriority* of 0 indicates the highest emission priority, while 2 indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets with a lower *emissionPriority* (or numerically higher).
Mib	Dcme
Values	Decimal (0..2)
Default	0

ATTRIBUTE Dcme Profile discardPriority (dpri)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the importance of the packets on the path. A *discardPriority* of 1 is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with a numerically lower discard priority are discarded after packets with a numerically higher discard priority.
Mib	Dcme
Values	Decimal (1..3)
Default	1

ATTRIBUTE Dcme Profile pathFailureAction (pfa)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If *pathFailureAction* is ***disconnectConnection***, the application is informed as soon as possible about a failure by disconnection. If *pathFailureAction* is ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a

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recoverable failure. If rerouting fails, the application is informed of the failure.
If *pathFailureAction* is ***reRoutePath***, the *LCo* may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.
All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option has the desired effect that the path is rerouted without complete disconnection at both ends.

Mib	Dcme
Values	reRoutePath disconnectConnection
Default	reRoutePath

ATTRIBUTE Dcme Profile optimization (opt)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether this connection should attempt to optimize its path when requested by the *Rtg Pors* component. Every path is optimal when it is established, but as network traffic patterns and configurations change this path may no longer be optimal. The PORS connection manager on a module requests circuits to optimize at the *optimizationInterval*.
Mib	Dcme
Values	disabled enabled
Default	enabled

GROUP Dcme Profile FramerOptions (FrOps)

Properties	Provisioned
Description	This group contains attributes which define how audio data is carried across the network.
Mib	Dcme

ATTRIBUTE Dcme Profile voiceEncoding

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the encoding of voice traffic.

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A *voiceEncoding* setting of ***g711G726*** specifies that either pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 is used to encode voice traffic. The actual encoding performed depends on congestion in the network and the settings of *minVoiceG711G726Rate* and *maxVoiceG711G726Rate*. If *voiceEncoding* is ***g711G726***, the bit rate of voice traffic can change during a call due to congestion in the network. In this case, the minimum and maximum rates that can occur during a call are specified by *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* respectively. If *voiceEncoding* is ***g711G726***, *minVoiceG711G726Rate* is ***64*** and *maxVoiceG711G726Rate* is ***64***, G.711 (PCM) encoding is always performed on voice traffic on this channel and all voice traffic is carried uncompressed at 64 kbit/s.

A *voiceEncoding* setting of ***g728at16*** specifies that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 is always performed on voice traffic. If *voiceEncoding* is ***g728at16***, the bit rate of all voice traffic is fixed at 16 kbit/s. The *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* attributes do not apply if *voiceEncoding* is ***g728at16***.

A *voiceEncoding* setting of ***g729at8*** indicates that the Conjugated Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 is always performed on voice traffic. If *voiceEncoding* is ***g729at8***, the bit rate of all voice traffic is fixed at 8 kbit/s. The *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* attributes do not apply if *voiceEncoding* is ***g729at8***.

Mib	Dcme
Values	g711G726 g728at16 g729at8
Default	g728at16

ATTRIBUTE Dcme Profile **maxVoiceG711G726Rate (maxVoiceBitRate)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum possible bit rate (minimum possible compression rate) during a voice call on this channel when *voiceEncoding* is ***g711G726***. It applies only to voice traffic, not modem or fax traffic. It also applies only if *voiceEncoding* is ***g711G726***. If *voiceEncoding* is ***g711G726***, the bit rate of voice traffic can change during a call due to congestion in the network. In this case, the minimum and maximum rates that can occur during a call are specified by *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* respectively. If *voiceEncoding* is ***g711G726***, *minVoiceG711G726Rate* is ***64*** and

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maxVoiceG711G726Rate is ***64***, the G.711 (PCM) algorithm is always performed on voice traffic on this channel and all voice traffic is carried uncompressed at 64 kbit/s.

Mib	Dcme
Values	64 32 24
Units	kbit/s
Default	64

ATTRIBUTE Dcme Profile minVoiceG711G726Rate (minVoiceBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum possible bit rate (maximum possible compression rate) during a voice call on this channel when *voiceEncoding* is ***g711G726***. It applies only to voice traffic, not modem or fax traffic. It also applies only if *voiceEncoding* is ***g711G726***. If *voiceEncoding* is ***g711G726***, the bit rate of voice traffic can change during a call due to congestion in the network. In this case, the minimum and maximum rates that can occur during a call are specified by *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* respectively. If *voiceEncoding* is ***g711G726***, *minVoiceG711G726Rate* is ***64*** and *maxVoiceG711G726Rate* is ***64***, the G.711 (PCM) algorithm is always performed on voice traffic on this channel and all voice traffic is carried uncompressed at 64 kbit/s.
Mib	Dcme
Values	64 32 24
Units	kbit/s
Default	64

ATTRIBUTE Dcme Profile voiceTrafficOptimization

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies how to optimize voice traffic. If *voiceTrafficOptimization* is ***bandwidth***, voice traffic is optimized to preserve bandwidth. If *voiceTrafficOptimization* is ***delay***, voice traffic is optimized to minimize delay.

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Mib	Dcme
Values	bandwidth delay
Default	bandwidth

ATTRIBUTE Dcme Profile silenceSuppression

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies when silence suppression is performed. It applies to both voice and modem calls. If *silenceSuppression* is ***off***, silence suppression is never performed. If *silenceSuppression* is ***on***, silence suppression is always performed. If *silenceSuppression* is ***congested***, silence suppression is performed only when the network is congested. If *silenceSuppression* is ***slow***, silence suppression begins after 10 to 20 seconds without any detected speech or modem traffic. If *silenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are applied.
Mib	Dcme
Values	off on congested slow slowAndCongested
Default	on

ATTRIBUTE Dcme Profile silenceSuppressionFactor

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the expected savings (percent reduction) in required bandwidth if silence suppression is used. If silence suppression is used, the bandwidth required for the connection will be lower than if silence suppression is not used. However, the routing system will not be aware of the unused bandwidth unless that bandwidth is specified by this attribute. If the value specified for the expected savings is too low, then some bandwidth made available by the use of silence suppression will be wasted. If the value specified for the expected savings is too high, then some connections may fail to set up because the routing system will over-calculate the amount of bandwidth available. The effectiveness of silence suppression can be influenced by language related speech patterns.

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Mib	Dcme
Values	Decimal (0..60)
Units	%
Default	40

ATTRIBUTE Dcme Profile echoCancellation

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether echo cancellation is performed on calls using this profile as specified by ITU-T G.165. It applies mainly to voice traffic. Echo cancellation is usually (but not always) disabled during modem and fax calls. If *echoCancellation* is ***on***, the traffic that is echo cancelled is determined by ITU-T G.165.
Mib	Dcme
Values	off on
Default	off

ATTRIBUTE Dcme Profile modemFaxEncoding (faxEncoding)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies how modem and fax traffic is encoded. Modem and fax traffic are identified by an in-band 2100 Hz tone. Prior to the detection of a 2100 Hz tone, all traffic is handled according to *voiceEncoding*. If *modemFaxEncoding* is ***useVoiceEncoding***, 2100 Hz tones are not detected on the channel. In this case, the channel does not differentiate between modem and fax traffic and voice traffic. All traffic is handled according to *voiceEncoding*. If *voiceEncoding* is ***g728at16*** or ***g729at8***, modem and fax calls will not work. If a 2100 Hz tone is detected and *modemFaxEncoding* is ***g711G726***, all subsequent traffic during a call is encoded using pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726. When the 2100 Hz tone is detected, traffic is initially encoded at the rate specified by *maxModemFaxG711G726Rate*. For the duration of the call, the bit rate can change due to network congestion. In this case, the minimum and maximum rates that can occur during the call are specified by *minModemFaxG711G726Rate* and *maxModemFaxG711G726Rate* respectively.

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If a 2100 Hz tone is detected and *modemFaxEncoding* is ***faxRelayG711G726***, encoding switches to G.711 or G.726 at the rate specified in *maxModemFaxG711G726Rate*, exactly as it does if *modemFaxEncoding* is ***g711G726***. Until a fax preamble is detected, the rate may fluctuate between *maxModemFaxG711G726Rate* and *minModemFaxG711G726Rate* due to network congestion, exactly as it does if *modemFaxEncoding* is ***g711G726***. If a fax preamble is detected, all subsequent traffic during a call is demodulated and sent through the network as cells at the base rate of the sending machine. Supported demodulation methods are V.29 (up to 9.6 kbit/s) and V.27 (up to 4.8 kbit/s). The modulation and demodulation of fax traffic is called “fax relay”.

If a 2100 Hz tone is detected and *modemFaxEncoding* is ***faxRelayOnly***, this channel does not wait for a fax preamble to switch to “fax relay”. Instead, “fax relay” is entered immediately. If *modemFaxEncoding* is ***faxRelayOnly***, modem calls do not work on this *Dcme*. Therefore, this setting is only appropriate if modem calls are not made on the channel.

The ***faxRelay*** feature is required to set *modemFaxEncoding* to ***faxRelayG711G726*** or ***faxRelayOnly***.

modemFaxEncoding must have the same value at both ends of a *Dcme.* If *modemFaxEncoding* is not provisioned with the same values at both ends of a *Dcme*, the *Dcme* will not be able to carry the modem and fax traffic successfully.

Mib — Dcme

Values
g711G726
faxRelayOnly
faxRelayG711G726
useVoiceEncoding

Default — faxRelayOnly

ATTRIBUTE Dcme Profile maxModemFaxG711G726Rate (maxModemBitRate)

Access
Read: Passive
Write: Service

Criticality — Process

Description — This attribute specifies the maximum possible bit rate (minimum possible compression rate) during a modem call on this channel. It also specifies the maximum possible bit rate (minimum possible compression rate) during a fax call on this channel, but only if *faxEncoding* is ***g711G726***. *maxModemFaxG711G726Rate* always applies to modem traffic, and never applies to voice traffic. If *faxEncoding* is ***g711G726***, maxModemFaxG711G726Rate also applies to fax traffic. If *faxEncoding* is ***faxRelay***, *maxModemFaxG711G726Rate* does not apply to fax traffic. Rates can change during a call due to congestion in the network.

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Mib	Dcme
Values	64 32
Units	kbit/s
Default	64

ATTRIBUTE Dcme Profile minModemFaxG711G726Rate (minModemBitRate)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the minimum possible bit rate (maximum possible compression rate) during a modem call on this channel. It also specifies the minimum possible bit rate (maximum possible compression rate) during a fax call on this channel, but only if *faxEncoding* is ***g711G726***. *minModemFaxG711G726Rate* always applies to modem traffic, and never applies to voice traffic. If *faxEncoding* is ***g711G726***, *minModemFaxG711G726Rate* also applies to fax traffic. If *faxEncoding* is ***faxRelay***, *minModemFaxG711G726Rate* does not apply to fax traffic. Rates can change during a call due to congestion in the network.
Mib	Dcme
Values	64 32
Units	kbit/s
Default	64

ATTRIBUTE Dcme Profile faxIdleSuppressionG711G726

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether fax idle suppression is performed on fax traffic on calls using this profile. It only applies to fax traffic, not voice or modem traffic. It also only applies if fax traffic is carried using G.711 or G.726.
Mib	Dcme
Values	off on
Default	off

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ATTRIBUTE Dcme Profile insertedOutputDelay

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the amount of added output delay used to compensate for cross network delay variations. It applies to voice, modem and fax traffic. It is required to add output delay so that the statistical variation in the transit time of cells crossing the network does not cause gaps in speech. Backbone networks where high priority traffic consumes a high percentage of trunk bandwidth will require a higher *insertedOutputDelay* to compensate for the greater cell delay variation (CDV).
Mib	Dcme
Values	5 15 22 30 35 40 45 50 75 100 125 150
Units	msec
Default	22

ATTRIBUTE Dcme Profile ingressAudioGain

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data coming from outside the network before it is transferred across the network. It applies to voice, modem and fax traffic. For example, ingress gain is applied to audio data coming from a PBX. If *ingressAudioGain* is negative, a loss is applied. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in a network to ensure that the signal level from any point in the network to any other point is correct.
Mib	Dcme
Values	Signed (-12..12)

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Units	dB
Default	0

ATTRIBUTE Dcme Profile **egressAudioGain**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data leaving the network on this route. It applies to voice, modem and fax traffic. For example, egress gain is applied to audio data going to a PBX. If *egressAudioGain* is negative, a loss is applied. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in the network to ensure that the signal level from any point in the network to any other point is correct.
Mib	Dcme
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Dcme Profile **speechHangoverTime**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of speech before silence suppression starts. *It applies only to voice traffic.* *Higher values of speechHangoverTime reduce undesirable clipping but increase bandwidth usage.*
Mib	Dcme
Values	Decimal (10..500)
Units	msec
Default	150

ATTRIBUTE Dcme Profile **comfortNoiseCap**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum level at which comfort noise is generated. The *comfort noise* is limited by *comfortNoiseCap before*

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egressAudioGain is applied. The default value of ***-40*** dBm0 equates to the maximum level of comfort noise available and effectively disables the *comfortNoiseCap*.

Mib — Dcme

Values — Signed (-78; -65; -60; -54; -52; -50; -48; -46; -44; -42; -40)

Units — dBm0

Default — -40

ATTRIBUTE Dcme Profile modemFaxSpeechDiscrim (fsd)

Access — Read: Passive
Write: Service

Criticality — Process

Description — This attribute specifies whether this *Dcme* differentiates between modem fax traffic and speech. If *modemFaxSpeechDiscrim* is ***on*** and a false 2100 Hz tone is detected, the VSs under this DCME revert to speech mode when speech is detected.

Mib — Dcme

Values — on
off

Default — on

ATTRIBUTE Dcme Profile v17EncodedAsG711G726

Access — Read and write

Criticality — Process

Description — This attribute specifies how services using this *Profile* negotiate with V.17 fax machines. This attribute is not used unless the ***modemFaxEncoding***, defined in this *Profile*, is ***faxRelayG711G726***

If *v17EncodedAsG711G726* is ***no,*** V.17 fax machines are instructed to use V.29 and V.29 fax traffic sent by fax machines is demodulated and encoded using fax relay.

If *v17EncodedAsG711G726* is ***yes***, V.17 fax machines are permitted to use V.17 and V.17 fax traffic sent by fax machines is encoded using G.711 or G.726. The actual encoding performed depends on the *minModemFaxG711G726Rate* and *maxModemFaxG711G726Rate*, available in this *Profile*.

Mib — Dcme

Values — no
yes

Default — no

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ATTRIBUTE Dcme Profile dtmfRegeneration (detGen)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the DTMF regeneration parameter used during negotiation with the remote end across the subnet. If *dtmfRegeneration* is ***on***, it is desired that DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is desired to be generated before being sent to the link. If *dtmfRegeneration* is ***off***, it is desired that DTMF tones are transported transparently as audio.
Mib	Dcme
Values	off on
Default	off

ATTRIBUTE Dcme Profile maxFaxRelayRate

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum desired fax relay rate. This attribute only applies if *modemFaxEncoding* is ***faxRelayOnly*** or ***faxRelayG711G726***.
Mib	Dcme
Values	Decimal (2.4; 4.8; 7.2; 9.6; 12.0; 14.4)
Units	kbit/s
Default	14.4

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Dcme

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Dlep

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COMPONENT DualLpEquipmentProtection (Dlep)

Instance	Decimal (0..7)
Groups	GROUP Dlep CustomerIdentifierData (CidData) GROUP Dlep Provisioned (Prov) GROUP Dlep OsiState (State) GROUP Dlep Operational (Op)
Scope	Device
Description	*DualLpEquipmentProtection/n* This component provides the sparing capabilities for electrical ports and server-type applications when using a dual *LP* sparing model. An example of when you would use this component is when you have electrical and optical ports on the same FP. In this situation, *Dlep* is used as the parent component for the spared electrical ports, rather than the *LP/#*.
Mib	Dlep
Opt. Subcomp.	COMPONENT Dlep DS1 COMPONENT Dlep VoiceServicesProcessor (Vsp)
Common Verbs	Help List Display Add DELete

GROUP Dlep CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Dlep

ATTRIBUTE Dlep customerIdentifier (cid)

Access	Read and write

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Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Dlep
Values	Decimal (0; 1..8191)
Default	0

GROUP Dlep Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *DualLpEquipmentProtection* component.
Mib	Dlep

ATTRIBUTE Dlep mainLp

Access	Read and write
Criticality	Process
Description	This attribute specifies one of the *Lp*s of an *Lp* pair. A value must be provided for this attribute, and an *Lp* may only be associated with one *Dlep* component. Each of the *Lp*s must link to only one card, that is, *spareCard* is not allowed to be set on either *Lp*. Each *Lp* must have the same *LogicalProcessorType*. The *cardType* attribute must be identical for both cards.
Mib	Dlep
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Dlep spareLp

Access	Read and write
Criticality	Process

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Description	This attribute specifies one of the *Lp*s of an *Lp* pair. A value must be provided for this attribute, and an *Lp* may only be associated with one *Dlep* component. Each of the *Lp*s must link to only one card, that is, *spareCard* is not allowed to be set on either *Lp*. Each *Lp* must have the same *LogicalProcessorType*. The *cardType* attribute must be identical for both cards.
Mib	Dlep
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Dlep linkToApplications

Access	Read only
Description	This attribute allows server-type applications to link themselves to the *Dlep* component, and be spared between the *mainLp* attribute and the *spareLp attribute*.
Mib	Dlep
List of	Link
List Size	256
Default	No default

GROUP Dlep OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting

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down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Dlep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Dlep
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Dlep availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

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The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Dlep
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Dlep proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

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	The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Dlep
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Dlep controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Dlep
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Dlep alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Dlep
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Dlep standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

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	The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Dlep
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Dlep unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Dlep
Values	false true
Default	false

GROUP Dlep Operational (Op)

Properties	Operational
Description	This group contains the operational attribute for the *DualLpEquipmentProtection* component.
Mib	Dlep

ATTRIBUTE Dlep activeLp

Access	Read only
Description	This attribute identifies which *Lp* is currently providing service..
Mib	Dlep
Values	The name of the component
Default	No default

COMPONENT Dlep DS1

Instance	Decimal (0..7)

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Groups	GROUP Dlep DS1 Provisioned (Prov) GROUP Dlep DS1 CustomerIdentifierData (CidData) GROUP Dlep DS1 AdminInfo (AdminInfo) GROUP Dlep DS1 IfEntryProv (IfEntry) GROUP Dlep DS1 OperationalStatus (OperStatus) GROUP Dlep DS1 OsiState (State) GROUP Dlep DS1 Operational (Oper) GROUP Dlep DS1 Statistics (Stats)
Scope	Application
Description	*Lp/n DS1/n* The *DS1* component controls and monitors a DS1 port on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pDS1Aal1: 4 port. The lowest instance value is always ***0***. Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (A DS1 “ATM UNI port” is a *DS1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.) The instance number of a *DS1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.
Mib	Dlep
Subcomponents	COMPONENT Dlep DS1 Channel (Chan)
Dyn. Subcomp.	COMPONENT Dlep DS1 Test (Test) COMPONENT Dlep DS1 Dsp COMPONENT Dlep DS1 Audio
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dlep DS1 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a DS1 component.
Mib	Dlep

ATTRIBUTE Dlep DS1 lineType (lineType)

Access	Read and write

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Description	This attribute defines the framing of the DS1 line. ***d4*** defines a framing pattern of 12 frames per multiframe. ***esf*** defines a framing pattern of 24 frames per multiframe. ***d4Cas*** defines a framing pattern of 12 frames per multiframe with channel associated signalling. ***esfCas*** defines a framing pattern of 24 frames per multiframe with channel associated signalling. ***unframed*** defines an unknown framing pattern for clear channels. For cell-based cards only the default option ***esf*** is permitted.
Mib	Dlep
Values	d4 esf d4Cas esfCas unframed
Default	esf

ATTRIBUTE Dlep DS1 zeroCoding (zeroCoding)

Access	Read and write
Criticality	Component
Description	This attribute defines the zero encoding on the DS1 line. ***bit7Stuffing*** sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8. ***b8zs*** substitutes a pattern of bipolar violations if more than 7 zeros in a row are to be transported. ***ami*** specifies Alternate Mark Inversion, in which successive marks (ones) alternate between positive and negative polarity voltage signals, and spaces (zeros) are sent as a zero amplitude signal. When *zeroCoding* is set to ***ami*** and l*ineType* is set to ***d4***, it is recommended that *raiAlarmType* be set to ***SBit*** in order to avoid possible mimic RAI alarm. For cell-based cards, only the default value ***b8zs*** is permitted. The value *ami* should be used with caution. If the ones density of the traffic is not sufficiently high, the DS1 will lose clock synchronization.
Mib	Dlep
Values	bit7Stuffing b8zs ami
Default	b8zs

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ATTRIBUTE Dlep DS1 clockingSource (clockingSource)

Access	Read and write
Description	This attribute defines the source of the transmit clock for the DS1 line. When ***local*** is selected, the crystal on the port generates the clocking for the line. When ***line*** is selected, the port synchronizes to the clock from the facility. When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP. When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***. When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network. When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network. A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured*** If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pDS1Atm*** card, which it defaults to ***local***. On a ***3pDS1Atm*** card all ports must have the same value, and be either ***local*** or ***module***. ***otherPort*** is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards. On ***4DS1Aal1*** cards either: all four ports' *clockingSource* values must be ***local*** OR all four ports' *clockingSource* values must be ***module*** OR one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. A port can only have ***srtsMode*** selected if the other ports are ***module*** or ***srtsMode***.
Mib	Dlep
Values	local line module otherPort

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srtsMode
adaptiveMode

Default — No default

ATTRIBUTE Dlep DS1 raiAlarmType (raiType)

Access — Read and write

Description

This attribute defines the method of sending a RAI (Remote Alarm Indication) alarm on a DS1 line.
When ***SBit*** is selected, RAI alarm is sent by setting the S bit in frame 12.
When ***Bit2*** is selected, RAI alarm is sent by setting bit 2 in all timeslots to 0.
When ***fdl*** is selected, RAI alarm is sent by a repeating pattern of 00 hex and FF hex on the FDL link.
Note that for *lineType* of ***d4***, only the SBit and the Bit2 methods are applicable. Whereas for *lineType* of ***esf***, only the Bit2 and the ***fdl*** methods are applicable.
SBit method is recommended if *lineType* is set to ***d4*** and *zeroCoding* is set to ***ami***. This will help to avoid potential mimic RAI alarm when 1's density is too low in the data transmitted.
For cell-based cards, only the default value ***fdl*** is permitted.

Mib — Dlep

Values
sBit
bit2
fdl

Default — fdl

ATTRIBUTE Dlep DS1 lineLength (lineLength)

Access — Read and write

Description

This attribute defines the line length (in feet) for equalization calculations for the DS1 line. The value ranges between 0-655. For ***8pDS1Atm*** cards the actual value used for equalization is rounded up to the nearest 110 feet; for all other card types the actual value used is rounded to the nearest 50 feet.

Mib — Dlep

Values — Decimal (0..655)

Default — 0

GROUP Dlep DS1 CustomerIdentifierData (CidData)

Properties — Provisioned

Description — This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

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Mib	Dlep

ATTRIBUTE Dlep DS1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Dlep
Values	Decimal (0; 1..8191)
Default	0

GROUP Dlep DS1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Dlep

ATTRIBUTE Dlep DS1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Dlep
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 commentText

Access	Read and write

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Description	Any miscellaneous text about the facility.
Mib	Dlep
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	Dlep
Values	no yes
Default	no

GROUP Dlep DS1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Dlep

ATTRIBUTE Dlep DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Dlep
Values	up down testing
Default	up

ATTRIBUTE Dlep DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

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Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Dlep
Values	Decimal (1..65535)
Default	No default

GROUP Dlep DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Dlep

ATTRIBUTE Dlep DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Dlep
Values	up down testing
Default	up

GROUP Dlep DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep DS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Dlep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep DS1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep DS1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare

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capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Dlep
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Dlep DS1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is

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degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Dlep
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Dlep DS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Dlep

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Dlep DS1 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Dlep

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

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ATTRIBUTE Dlep DS1 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Dlep
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Dlep DS1 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service

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but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — Dlep

Values — hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE Dlep DS1 unknownStatus (osiUnknw)

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — Dlep

Values — false
true

Default — false

GROUP Dlep DS1 Operational (Oper)

Properties — Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib — Dlep

ATTRIBUTE Dlep DS1 losAlarm (losAlarm)

Access — Read only

Description

This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been

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observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOS alarm state.
The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib — Dlep

Values — on
off

Default — off

ATTRIBUTE Dlep DS1 rxAisAlarm (rxAisAlarm)

Access — Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms £ T £ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib — Dlep

Values — on
off

Default — off

ATTRIBUTE Dlep DS1 lofAlarm (lofAlarm)

Access — Read only

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Description

This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib: Dlep

Values: on
off

Default: off

ATTRIBUTE Dlep DS1 rxRaiAlarm (rxRaiAlarm)

Access: Read only

Description

This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time).
The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib: Dlep

Values: on
off

Default: off

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ATTRIBUTE Dlep DS1 txAisAlarm (txAisAlarm)

Access	Read only
Description	This attribute displays whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.
Mib	Dlep
Values	on off
Default	off

ATTRIBUTE Dlep DS1 txRaiAlarm (txRaiAlarm)

Access	Read only
Description	This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).
Mib	Dlep
Values	on off
Default	off

GROUP Dlep DS1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	Dlep

ATTRIBUTE Dlep DS1 runningTime (runningTime)

Access	Read only
Description	The number of seconds since the port component was activated.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Dlep DS1 errorFreeSec (efs)

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 erroredSec (es)

Access	Read only
Description	An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 sevErroredSec (ses)

Access	Read only
Description	A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 sevErroredFrmSec (sefs)

Access	Read only
Description	A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Dlep DS1 unavailSec

Access	Read only
Description	The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 bpvErrors (bpvErrors)

Access	Read only
Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 crcErrors (crcErrors)

Access	Read only
Description	If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 frmErrors (frmErrors)

Access	Read only
Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	Dlep
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Dlep DS1 losStateChanges (losChanges)

Access	Read only
Description	The total number of times that the line lost signal.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

COMPONENT Dlep DS1 Channel (Chan)

Instance	Decimal (0..24)
Groups	GROUP Dlep DS1 Chan Provisioned (Prov) GROUP Dlep DS1 Chan CustomerIdentifierData (CidData) GROUP Dlep DS1 Chan IfEntryProv (IfEntry) GROUP Dlep DS1 Chan OperationalStatus (OperStatus) GROUP Dlep DS1 Chan OsiState (State) GROUP Dlep DS1 Chan Operational (Oper) GROUP Dlep DS1 Chan AdminInfo (AdminInfo)
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type

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only allows one channel per port, and this is automatically provisioned with all available timeslots.

Mib	Dlep
Opt. Subcomp.	COMPONENT Dlep DS1 Chan AtmCell (Cell) COMPONENT Dlep DS1 Chan TrunkConditioning (Tc)
Dyn. Subcomp.	COMPONENT Dlep DS1 Chan Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dlep DS1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

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Mib	Dlep
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Dlep DS1 Chan timeslotDataRate (dataRate)

Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

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When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib	Dlep
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Dlep DS1 Chan applicationFramerName

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	Dlep
Values	Link (Service, interfaceName)
Default	No default

GROUP Dlep DS1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a

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CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	Dlep
Values	Decimal (0; 1..8191)
Default	0

GROUP Dlep DS1 Chan **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Dlep
Values	up down testing
Default	up

ATTRIBUTE Dlep DS1 Chan **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Dlep
Values	Decimal (1..65535)
Default	No default

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GROUP Dlep DS1 Chan **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Dlep
Values	up down testing
Default	up

GROUP Dlep DS1 Chan **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Dlep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep DS1 Chan operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep DS1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

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Mib	Dlep
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Dlep DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The

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	operationalState is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.
Mib	Dlep
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Dlep DS1 Chan proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase.

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If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — Dlep

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Dlep DS1 Chan controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — Dlep

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Dlep DS1 Chan alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Dlep

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Dlep DS1 Chan **standbyStatus (osiStby)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

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	The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Dlep
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Dlep DS1 Chan **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Dlep
Values	false true
Default	false

GROUP Dlep DS1 Chan **Operational (Oper)**

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan **actualChannelSpeed**

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	Dlep
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

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GROUP Dlep DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Dlep
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Dlep
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Chan includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	Dlep
Values	no yes
Default	no

COMPONENT Dlep DS1 Chan Test (Test)

Groups	GROUP Dlep DS1 Chan Test OsiState (State) GROUP Dlep DS1 Chan Test Setup (Setup) GROUP Dlep DS1 Chan Test Results (Results)

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Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	Dlep
Common Verbs	Help List Display

VERB START **Dlep DS1 Chan Test**

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP **Dlep DS1 Chan Test**

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP **Dlep DS1 Chan Test** **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE **Dlep DS1 Chan Test** **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Dlep

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Dlep DS1 Chan Test **operationalState (osiOper)**

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Dlep

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Dlep DS1 Chan Test **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Dlep

Values — idle
active (activ)
busy

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Default	idle

GROUP Dlep DS1 Chan Test **Setup (Setup)**

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Dlep
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Chan Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of

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V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Dlep

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Dlep DS1 Chan Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Dlep

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Dlep DS1 Chan Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: Dlep

Values:
ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

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Default	ccitt32kBitPattern

ATTRIBUTE Dlep DS1 Chan Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Dlep
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Dlep DS1 Chan Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Dlep
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Dlep DS1 Chan Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Dlep
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Dlep DS1 Chan Test duration

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Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Dlep DS1 Chan Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

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a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib Dlep

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Dlep DS1 Chan Test **bitsTx**

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Dlep

Values Long Integer

Default No default

ATTRIBUTE Dlep DS1 Chan Test **bytesTx**

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Dlep

Values Long Integer

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Default	No default

ATTRIBUTE Dlep DS1 Chan Test **frmTx**

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Chan Test **bitsRx**

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Chan Test **bytesRx**

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Chan Test **frmRx**

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep

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Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Chan Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Chan Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Dlep
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Chan Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an

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externalLoop test. For a data test, it indicates time since test data was first transmitted.

Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Dlep DS1 Chan Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Dlep DS1 Chan AtmCell (Cell)

Groups	GROUP Dlep DS1 Chan Cell Provisioned (Prov) GROUP Dlep DS1 Chan Cell Operational (Oper) GROUP Dlep DS1 Chan Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	Dlep
Common Verbs	Help List Display Add DELete

GROUP Dlep DS1 Chan Cell Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.

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Mib	Dlep

ATTRIBUTE Dlep DS1 Chan Cell **alarmActDelay (act)**

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	Dlep
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Dlep DS1 Chan Cell **scrambleCellPayload (scramble)**

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	Dlep
Values	off on
Default	No default

ATTRIBUTE Dlep DS1 Chan Cell **correctSingleBitHeaderErrors**

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

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Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib — Dlep

Values — off
on

Default — off

ATTRIBUTE Dlep DS1 Chan Cell **clearDelay (clear)**

Access — Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib — Dlep

Values — Decimal (0..60)

Units — minutes

Default — 0

ATTRIBUTE Dlep DS1 Chan Cell **hecSampleInterval (hSample)**

Access — Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib — Dlep

Values — Decimal (0..25)

Units — seconds

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Default	0

ATTRIBUTE Dlep DS1 Chan Cell **hecErrorLimit (hLimit)**

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Dlep
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Dlep DS1 Chan Cell **lcdStateDelay (delay)**

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Dlep
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Dlep DS1 Chan Cell **hecErrorIntervalLimit (hIntLimit)**

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before

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an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Dlep

Values Decimal (1..25)

Default 1

GROUP Dlep DS1 Chan Cell **Operational (Oper)**

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib Dlep

ATTRIBUTE Dlep DS1 Chan Cell **lcdAlarm (lcd)**

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell*

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component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib Dlep

Values on
off

Default off

GROUP Dlep DS1 Chan Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib Dlep

ATTRIBUTE Dlep DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib Dlep

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Dlep DS1 Chan Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where

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	the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 Chan Cell **receiveCellUtilization (rxutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Dlep
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Dlep DS1 Chan Cell **transmitCellUtilization (txutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Dlep
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Dlep DS1 Chan Cell **correctableHeaderErrors (cErr)**

Access	Read only

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Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

COMPONENT Dlep DS1 Chan TrunkConditioning (Tc)

Groups	GROUP Dlep DS1 Chan Tc Provisioned (Prov) GROUP Dlep DS1 Chan Tc Operational (Op)
Scope	Device
Description	*Lp/n Ds1/n Chan/n Tc* *Lp/n E1/n Chan/n Tc* *Lp/n Ds3/n Ds1/n Chan/n Tc* *Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc* *Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc* *Laps/n* Vc4/n Vc12/k,l,m E1 Chan/n T*c* *Laps/n* Sts/n Vt1dot5/l,m Ds1 Chan/n T*c* The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service. Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined. When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI) When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:

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bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib	Dlep
Common Verbs	Help List Display Add DELete

GROUP Dlep DS1 Chan Tc Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan Tc replacementData (data)

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions. The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values: DS1 MUX Out Of Service Code = 0x1A E1 MUX Out Of Service Code = 0xFF On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***. On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.
Mib	Dlep
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Dlep DS1 Chan Tc signalOneDuration (duration)

Access	Read and write

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Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	Dlep
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Dlep DS1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	Dlep
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Dlep DS1 Chan Tc signalOne (sigOne)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined.

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For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib	Dlep
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Dlep DS1 Chan Tc **signalTwo (sigTwo)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	Dlep
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Dlep DS1 Chan Tc **Operational (Op)**

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan Tc **ingressConditioning (inCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.***

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When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

Mib — Dlep

Values — off
on

Default — off

ATTRIBUTE Dlep DS1 Chan Tc egressConditioning (egCon)

Access — Read only

Description — This attribute indicates the status of locally generated trunk conditioning towards the PDH line.

When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib — Dlep

Values — off
on

Default — off

COMPONENT Dlep DS1 Test (Test)

Groups — GROUP Dlep DS1 Test OsiState (State)
GROUP Dlep DS1 Test Setup (Setup)
GROUP Dlep DS1 Test Results (Results)

Scope — Application

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Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib Dlep

Common Verbs
Help
List
Display

VERB START Dlep DS1 Test

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Dlep DS1 Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Dlep DS1 Test **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Dlep

ATTRIBUTE Dlep DS1 Test **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Dlep

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Dlep DS1 Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Dlep

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Dlep DS1 Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Dlep

Values — idle
active (activ)
busy

Default — idle

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GROUP Dlep DS1 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Dlep
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.

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Mib	Dlep
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Dlep DS1 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Dlep
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Dlep DS1 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Dlep
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

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ATTRIBUTE Dlep DS1 Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Dlep
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Dlep DS1 Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Dlep
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Dlep DS1 Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Dlep
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Dlep DS1 Test **duration**

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Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Dlep DS1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

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a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib — Dlep

Values — testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default — neverStarted

ATTRIBUTE Dlep DS1 Test bitsTx

Access — Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib — Dlep

Values — Long Integer

Default — No default

ATTRIBUTE Dlep DS1 Test bytesTx

Access — Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib — Dlep

Values — Long Integer

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Default	No default

ATTRIBUTE Dlep DS1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep

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Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Dlep
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an

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externalLoop test. For a data test, it indicates time since test data was first transmitted.

Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Dlep DS1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Dlep DS1 Dsp

Scope	Device
Description	*LogicalProcessor/n Ds1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent DS1 component becomes active, and remains in existence as long as the card remains operational. *Dsp* components cannot be added or deleted.
Mib	Dlep
Common Verbs	Help List Display

COMPONENT Dlep DS1 Audio

Scope	Device
Description	*LogicalProcessor/n Ds1/0 Audio* The Audio component presents the audio status of all timeslots on a given DS1. A voice card's *Audio* component is created automatically whenever the parent DS1 component becomes active, and remains in existence as long

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as the card remains operational. *Audio* components cannot be added or deleted.

Mib: Dlep

Common Verbs:
Help
List
Display

COMPONENT Dlep VoiceServicesProcessor (Vsp)

Groups: GROUP Dlep Vsp Provisioned (Op)
GROUP Dlep Vsp OsiState (State)

Scope: Device

Description: *Lp/n VoiceServicesProcessor*
Dlep/n VoiceServicesProcessor

This component represents a Voice Services Processor FP.

When added, *PModule* subcomponents are added automatically.
For the ***12mVspAal*** and ***Vsp2*** cards, 12 *PModule* instances are added.
For the ***2pGeMmSrVsp3*** card, 24 *PModule* instances are added.
For the ***2pOC3ChSmIrVsp3*** card, 23 *PModule* instances are added.
For the ***2pVS*** card, 65 *PModule* instances are added.
For the ***2pOC3ChSmIrVsp4e*** card, 45 *PModule* instances are added.

Mib: Dlep

Subcomponents: COMPONENT Dlep Vsp ProcessingModule (PModule)

Opt. Subcomp.: COMPONENT Dlep Vsp Ethernet1000BaseSX (GigE)

Dyn. Subcomp.: COMPONENT Dlep Vsp Test (Test)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Dlep Vsp Provisioned (Op)

Properties: Provisioned

Description: This group contains provisioning data for the *Vsp* Component.

Mib: Dlep

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ATTRIBUTE Dlep Vsp linkToApplication (lta)

Access	Read and write
Criticality	Process
Description	This attribute specifies a service link to an *Nsta* component that defines the application services available in the VSP card.
Mib	Dlep
Values	Link (Service, linkToServer)
Default	No default

GROUP Dlep Vsp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep Vsp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dlep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Dlep Vsp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep Vsp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

COMPONENT Dlep Vsp ProcessingModule (PModule)

Instance	Decimal (1..65)
Groups	GROUP Dlep Vsp PModule Provisioned (Prov) GROUP Dlep Vsp PModule OsiState (State) GROUP Dlep Vsp PModule Operational (Oper)
Scope	Device
Description	*Lp/n Vsp ProcessingModule/n* *Dlep/n Vsp ProcessingModule/n*

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A *ProcessingModule* (*PModule*) component instance represents a distinct physical processing module on a Voice Services Processor (VSP) FP.

Each *PModule* instance is uniquely identified by a number that corresponds to a specific physical location on the VSP FP.

Mib	Dlep
Dyn. Subcomp.	COMPONENT Dlep Vsp PModule ProcessingBlock (PBlock)
Common Verbs	Help List Display Add DELete

GROUP Dlep Vsp PModule Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *ProcessingModule*.
Mib	Dlep

ATTRIBUTE Dlep Vsp PModule moduleType (modType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of processing module expected for this *ProcessingModule* instance. A value of ***vpm*** refers to a processing module instance that is capable of processing voice, voiceband data, and data. A value of ***spm*** refers to a processing module instance that is capable of processing signaling, and hosting a media or signaling gateway. A value of ***none*** refers to a processing module instance that is unavailable for use.
Mib	Dlep
Values	none vpm spm
Default	none

GROUP Dlep Vsp PModule OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Dlep

ATTRIBUTE Dlep Vsp PModule adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Dlep

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Dlep Vsp PModule operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib Dlep

Values enabled (ena)
disabled (dis)

Default disabled

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ATTRIBUTE Dlep Vsp PModule **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

GROUP Dlep Vsp PModule **Operational (Oper)**

Properties	Operational
Description	This group indicates operational information for a *ProcessingModule*.
Mib	Dlep

ATTRIBUTE Dlep Vsp PModule **insertedModuleType (insModType)**

Access	Read only
Description	This attribute indicates the type of processing module currently present in the physical position on a Voice Services Processor FP. A value of ***vpm*** indicates the presence of a processing module capable of processing voice, voiceband data, and data. A value of ***spm*** indicates the presence of a processing module capable of processing signaling, and hosting a media or signaling gateway. A value of ***none*** indicates that no processing module is present. A value of ***unknown*** indicates the presence of a processing module with capabilities not known by the software.
Mib	Dlep
Values	none unknown vpm spm
Default	No default

ATTRIBUTE Dlep Vsp PModule **productCode (prc)**

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Access	Read only
Description	This attribute indicates the product engineering code and release of the *ProcessingModule*.
Mib	Dlep
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Dlep Vsp PModule failureCause (failCause)

Access	Read only
Description	This attribute indicates the reason why the physical processing module has failed. The various failure causes are: ***none*** - There is no failure. ***cannotLoadFirmware*** - A module has been detected, but the firmware load operation failed. ***failedDiagnostics*** - The diagnostics cycle has completed and an error has been detected within the module. ***mismatched*** - The *insertedModuleType* of the *PModule* does not match its provisioned *moduleType*. ***connectivityFailed*** - The test cycle has run and an error has been detected on one of the *PBlock*s within the *PModule*. ***notResponding*** - One of the *PBlock*s within the *PModule* is not responding.
Mib	Dlep
Values	none cannotLoadFirmware failedDiagnostics mismatched connectivityFailed notResponding
Default	none

COMPONENT Dlep Vsp PModule ProcessingBlock (PBlock)

Instance	Decimal (1..2)
Groups	GROUP Dlep Vsp PModule PBlock Operational (Oper) GROUP Dlep Vsp PModule PBlock Utilization (Util)
Scope	Device
Description	*Lp/n Vsp PModule/n ProcessingBlock/n* *Dlep/n Vsp PModule/n ProcessingBlock/n* This dynamic component represents a block of Data Processors within a *ProcessingModule*.

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The Processing Block is the smallest unit on the Voice Services Processor (VSP) FP on which different Data Processing software algorithms may be executed, or on which diagnostics may be performed.

Mib Dlep

Common Verbs
Help
List
Display

GROUP Dlep Vsp PModule PBlock Operational (Oper)

Properties Operational

Description This group contains status information about the *ProcessingBlock* component.

Mib Dlep

ATTRIBUTE Dlep Vsp PModule PBlock serviceList (servList)

Access Read only

Description This attribute indicates the components that have resources allocated on this *ProcessingBlock* component.

This attribute is not displayed if the *Shelf Card cardType* attribute is set to ***2pOC3ChSmIrVsp3*** or ***2pVS***.

Mib Dlep

List of The name of the component

Default No default

GROUP Dlep Vsp PModule PBlock Utilization (Util)

Properties Operational

Description This group contains information about processing utilization of this *PBlock* component.

This group is filtered if the *modType* attribute of the parent *PModule* component is not set to ***spm***, or on the ***12mVspAal*** card.

Mib Dlep

ATTRIBUTE Dlep Vsp PModule PBlock timeInterval

Access Read only

Description This attribute indicates the time period for which the average, minimum, and maximum utilization values are calculated.

If the associated *Vsp* component is locked this attribute will be reset to ***0***.

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	This attribute is reset to ***0*** every 15 minutes.
Mib	Dlep
Values	Decimal (0..15)
Units	minutes
Default	No default

ATTRIBUTE **Dlep Vsp PModule PBlock** **cpuUtil**

Access	Read only
Description	This attribute indicates the approximate processing utilization of this *PBlock* component.
Mib	Dlep
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE **Dlep Vsp PModule PBlock** **cpuUtilAvg**

Access	Read only
Description	This attribute indicates average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	Dlep
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE **Dlep Vsp PModule PBlock** **cpuUtilAvgMin**

Access	Read only
Description	This attribute indicates the minimum average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	Dlep
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE **Dlep Vsp PModule PBlock** **cpuUtilAvgMax**

Access	Read only

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Description	This attribute indicates the maximum average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	Dlep
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Dlep Vsp Test (Test)

Groups	GROUP Dlep Vsp Test OsiState (State) GROUP Dlep Vsp Test Setup (Setup) GROUP Dlep Vsp Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	Dlep
Common Verbs	Help List Display

VERB START Dlep Vsp Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Dlep Vsp Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Dlep Vsp Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For

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component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — Dlep

ATTRIBUTE Dlep Vsp Test adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Dlep

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Dlep Vsp Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Dlep

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Dlep Vsp Test usageState (osiUsage)

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

GROUP Dlep Vsp Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Dlep

ATTRIBUTE Dlep Vsp Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Dlep
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Dlep Vsp Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test.

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remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Dlep

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Dlep Vsp Test frmSize (size)

Access: Read and write

Description:

This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Dlep

Values: Decimal (4..4096)

Units: bytes

Default: 1024

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ATTRIBUTE Dlep Vsp Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Dlep
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Dlep Vsp Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Dlep
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Dlep Vsp Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Dlep
Values	Decimal (0..1814400)
Units	seconds
Default	0

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ATTRIBUTE Dlep Vsp Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Dlep
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Dlep Vsp Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Dlep Vsp Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Dlep

ATTRIBUTE Dlep Vsp Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started.

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a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	Dlep
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE **Dlep Vsp Test** **bitsTx**

Access	Read only

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Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test bytesRx

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Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the

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	link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Dlep
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Dlep Vsp Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Dlep Vsp Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Dlep Vsp Ethernet1000BaseSX (GigE)

Instance	Decimal (0..1)
Groups	GROUP Dlep Vsp GigE OsiState (State) GROUP Dlep Vsp GigE Eth1000Operational (Oper) GROUP Dlep Vsp GigE Eth1000Statistics (Stats)

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Scope	Device
Description	*Lp/n Vsp GigE/n* This component monitors and provides access to statistical measurements of the *VspEth1000BaseSX* ports on the card, when the ***vgsIpGigE*** or the ***vgsIpG729GigE*** feature is provisioned. Two *VspEth1000BaseSX* ports are supported on the ***2pGeMmSrVsp3*** Function Processor.
Mib	Dlep
Common Verbs	Help List Display Add DELete

GROUP Dlep Vsp GigE OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep Vsp GigE adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dlep

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep Vsp GigE operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep Vsp GigE usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

GROUP Dlep Vsp GigE Eth1000Operational (Oper)

Properties	Operational
Description	This group contains the port operational attributes of the *VspEth1000BaseSX* component.

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Mib	Dlep

ATTRIBUTE Dlep Vsp GigE macAddress (macAdd)

Access	Read only
Description	This attribute indicates the medium access controller address. The value of this attribute will be assigned by the system. The medium access controller address is displayed in canonical format.
Mib	Dlep
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Dlep Vsp GigE autoNegotiationStatus (negStatus)

Access	Read only
Description	This attribute indicates the status of the auto negotiation at the physical level. Possible values are: ***succeeded*** – auto-negotiation has completed successfully. ***failed*** – auto-negotiation has failed to negotiate a compatible set of capabilities. ***inProgress*** – auto-negotiation is currently in progress. ***disabled*** – the port has detected that the far end does not support auto-negotiation.
Mib	Dlep
Values	succeeded failed inProgress disabled
Default	No default

ATTRIBUTE Dlep Vsp GigE ingressFlowControlStatus (ingFcStatus)

Access	Read only
Description	This attribute indicates whether the ingress flow control has been successfully negotiated with the link partner. Possible values are: ***enabled*** - this state will generate pause frames when internal congestion is detected.

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disabled - in this state, no pause frames are generated. In addition, there is a risk that the received packets may be discarded due to lack of internal resources.

Mib	Dlep
Values	enabled disabled
Default	No default

ATTRIBUTE Dlep Vsp GigE lossofSyncAlarm (syncAlarm)

Access	Read only
Description	This attribute indicates whether the loss of synchronization alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	Dlep
Values	on off
Default	No default

ATTRIBUTE Dlep Vsp GigE autoNegIncompleteAlarm (negAlarm)

Access	Read only
Description	This attribute indicates whether the auto-negotiation incomplete alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	Dlep
Values	on off
Default	No default

ATTRIBUTE Dlep Vsp GigE remoteFaultIndicationAlarm (remFaultAlarm)

Access	Read only
Description	This attribute indicates whether the remote fault indication alarm is ***on*** or ***off***.

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	Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	Dlep
Values	on off
Default	No default

GROUP Dlep Vsp GigE Eth1000Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for the *VspEth1000BaseSX* component.
Mib	Dlep

ATTRIBUTE Dlep Vsp GigE framesTransmittedOk (frmTxOk)

Access	Read only
Description	This attribute counts the frames that were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE framesReceivedOk (frmRxOk)

Access	Read only
Description	This attribute counts the number of frames that were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE octetsTransmittedOk (octetsTxOk)

Access	Read only
Description	This attribute counts the octets that were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer

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Default	No default

ATTRIBUTE Dlep Vsp GigE octetsReceivedOk (octetsRxOk)

Access	Read only
Description	This attribute counts the octets that were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE pauseFramesTransmitted (txPause)

Access	Read only
Description	This attribute counts the pause medium access controller control frames transmitted. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE pauseFramesReceived (rxPause)

Access	Read only
Description	This attribute counts the pause medium access controller control frames received. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE undersizeFrames (underFrm)

Access	Read only
Description	This attribute counts the frames that were received but were less than the minimum size (64 bytes). This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE framesTooLong (longFrm)

Access	Read only

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Description	This attribute counts the frames that were received but were greater than the maximum size. The count includes frames which have a bad frame check sequence. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE frameCheckSequenceErrors (fcsErr)

Access	Read only
Description	This attribute counts the frames received that were an integral number of octets in length and did not pass the FCS check. This count does not include frames received that were too long or too short. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE symbolErrors (symErr)

Access	Read only
Description	This attribute counts the times a valid length frame was received and had at least one occurance of a data reception or symbol error. This counter increments once per valid Carrier Event as defined by the specification IEEE 802.3 - 2000 edition. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE broadcastFramesReceivedOk (bcastRxOk)

Access	Read only
Description	This attribute counts the valid broadcast frames received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE discardedFrames (discFrm)

Access	Read only

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Description	This attribute counts the valid frames discarded because of a lack of resources available to receive them. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Dlep

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - DpnGate

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COMPONENT DpnGateway (DpnGate)

Instance	Decimal (0..65535)
Groups	GROUP DpnGate IfEntryProv (IfEntry) GROUP DpnGate Provisioned (Prov) GROUP DpnGate Overrides GROUP DpnGate OsiState (State) GROUP DpnGate OperationalStatus (OperStatus) GROUP DpnGate Operational (Oper) GROUP DpnGate Transport GROUP DpnGate Statistics (Stats)

COLLECTED STATS DpnGateway

Scope	Network
Description	*DpnGateway/n* The *DpnGateway* component provides a connection to a DPN-100 module. It controls a protocol stack associated with a logical port on a Functional Processor providing a connection to a DPN-100 UTP Trunk or Network Link. The underlying link protocol may be provided by either *Utp* or *FrAccess*. A maximum of 256 instances of *DpnGateway* may be provisioned on a module.
Mib	DpnTrunks
Opt. Subcomp.	COMPONENT DpnGate Utp COMPONENT DpnGate FrAccess
Dyn. Subcomp.	COMPONENT DpnGate ForwardingStatistics (FwdStats)
Common Verbs	Help List Display Add DELete Unlock

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VERB LOCK DpnGate

Impact	Service
Description	*Lock [-force][-forever] <component name>* This verb will cause the specified component to no longer providing service and enter the OSI ***locked*** administrative state. In some cases, locking a component causes all its subcomponents to shut down also. **Options:** *-force* If this option is present, service to current clients is terminated and the ***locked*** state is entered immediately. Without this option, *Lock* behaves as described above. -forever If this option is present, then after service to current clients is terminated and the ***locked*** state is entered, an unlock command is required to get the service into the ***unlocked*** state. Without this option, the service automatically returns to the ***unlocked*** state after five minutes.

GROUP DpnGate **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	DpnTrunks

ATTRIBUTE DpnGate **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	DpnTrunks
Values	up down testing
Default	up

ATTRIBUTE DpnGate **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	DpnTrunks
Values	Decimal (1..65535)

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Default	No default

GROUP DpnGate Provisioned (Prov)

Properties	Provisioned
Description	This group of provisionable attributes provide parameters used by *DpnGateway* for staging.
Mib	DpnTrunks

ATTRIBUTE DpnGate expectedRemoteNamsId (expectedRemote)

Access	Read and write
Description	This attribute specifies the expected NAMS identifier of the module to which this *DpnGateway* is connected. The *DpnGateway* end points exchange their NAMS identifiers through the *DpnGateway*'s staging protocol. The staged value is validated and the *remoteValidationAction* will be executed for those values not matching the value supplied for this attribute. If this value is zero, then the comparison is always successful.
Mib	DpnTrunks
Values	Decimal (0..65535)
Default	0

ATTRIBUTE DpnGate remoteValidationAction (validation)

Access	Read and write
Description	This attribute specifies the action to be taken if there is a mismatch between the provisioned value and the value received from the remote end, in cases where the *expectedRemoteNamsId* is non-zero. If this attribute is provisioned to ***continue*** then upon an unsuccessful validation staging continues, otherwise, if ***disable*** is set then the *DpnGateway* does not continue to stage but, attempts to stage again after a one minute time out. All unsuccessful validation when *expectedRemoteNamsId* has been set result in the generation of an alarm.
Mib	DpnTrunks
Values	continue disable
Default	continue

ATTRIBUTE DpnGate linkType (type)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the type of network link. If this attribute is provisioned to ***dedicated*** then the link is a dedicated network link to a DPN module. If this attribute is provisioned to ***dialIn*** then the link is connected to the DPN module through a public telephone network, on a dial line.
Mib	DpnTrunks
Values	dedicated dialIn
Default	dedicated

GROUP DpnGate Overrides

Properties	Provisioned
Description	Theses attribute comprise the set of provisionable override parameters supported by both the *Trunk* and *DpnGateway* components. The attributes are used when reporting operational attributes (used for metric calculations) to the routing system.
Mib	DpnTrunks

ATTRIBUTE DpnGate overrideTransmitSpeed (ots)

Access	Read and write
Description	This is the overridden value of link speed (bit/s) that, if staged successfully with the remote, is reported to the routing system for metric calculations. A zero indicates that an override value has not been provided and that only the measured value will be reported to the routing system. If this value is changed on a *Trunk* or *DpnGateway* that is enabled, the LOCK and UNLOCK commands must be issued to the component to restage the override with the remote.
Mib	DpnTrunks
Values	Decimal (0; 1000..4294967295)
Units	bit/s
Default	0

ATTRIBUTE DpnGate overrideRoundTripDelay (ortd)

Access	Read and write
Description	This is the overridden value of link delay (ms) that, if staged successfully with the remote, is reported to the routing system for metric calculations. A zero indicates that an override value has not been provided and that only the measured value will be reported to the routing system. If this value is changed on a *Trunk* or *DpnGateway* that is enabled, the LOCK and UNLOCK commands must be issued to the component to restage the override with the remote.
Mib	DpnTrunks

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Values	Decimal (0.0..1500.0)
Units	msec
Default	0.0

GROUP DpnGate OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DpnTrunks

ATTRIBUTE DpnGate adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DpnTrunks
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DpnGate operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

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The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: DpnTrunks

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE DpnGate usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: DpnTrunks

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE DpnGate availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test

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procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	DpnTrunks
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE DpnGate proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	DpnTrunks
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE DpnGate controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	DpnTrunks
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE DpnGate alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	DpnTrunks
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE DpnGate standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	DpnTrunks
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE DpnGate unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	DpnTrunks
Values	false true
Default	false

GROUP DpnGate OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	DpnTrunks

ATTRIBUTE DpnGate snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	DpnTrunks
Values	up down testing
Default	up

GROUP DpnGate Operational (Oper)

Properties	Operational

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Description	This group of attributes contain the operational information associated with this *DpnGateway* and the remote to which it has it staged.
Mib	DpnTrunks

ATTRIBUTE DpnGate remoteComponentName (remote)

Access	Read only
Description	This attribute indicates the Component Name of the remote DPN-100 UTP Trunk or Network Link supplied by the staging protocol. It is in the format *PM/n PE/n PI/n PO/n* where *PM* is the remote module NAMS identifier, *PE* is the remote module Processor Element that is staged with, *PI* is the remote module Peripheral Interface card associated with the *PE*, and *PO* is the remote module Port (physical or virtual) on the *PI* that the physical line is connected to.
Mib	DpnTrunks
Values	String (1..26, ASCII)
Default	No default

ATTRIBUTE DpnGate remoteNamsMnemonic (remoteNams)

Access	Read only
Description	This attribute indicates the NAMS Mnemonic of the remote DPN-100 Module supplied by the staging protocol. It can be used as a parameter to *Rtg Dpn* for displaying all *DpnGateway* that are connect to the same module.
Mib	DpnTrunks
Values	String (1..12, ASCII)
Default	No default

ATTRIBUTE DpnGate linkMode (mode)

Access	Read only
Description	This attribute indicates whether the *DpnGateway* is a ***Trunk*** connected to a DPN-100 RM or a ***NetworkLink*** connected to a DPN-100 AM.
Mib	DpnTrunks
Values	trunk networkLink unknown
Default	No default

ATTRIBUTE DpnGate activateReason (reason)

Access	Read only

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Description	This attribute indicates the reason the *DpnGateway* has been activated by the remote end. The value corresponds to the link type of the DPN end. It is always ***unknown*** until the link comes into service. If this attribute is set to ***dedicated***, the DPN is a dedicated network link. If this attribute is set to ***dnl***, the DPN end is a dial network link, meaning a network link which is connected through a dial-up service. If this attribute is set to ***dbnl***, the DPN end is dial backup network link, activated because the main network link is out of service. If this attribute is set to ***bwod***, the DPN end is a bandwidth on demand link, activated because extra bandwidth is required. If the attribute is set to ***unknown***, the link is either not currently in use, or the DPN end has an unrecognized link type.
Mib	DpnTrunks
Values	dedicated dnl dbnl dialIn bwod unknown
Default	unknown

GROUP DpnGate Transport

Properties	Operational
Description	This group of attributes contains the set of operational parameters measured and maintained by both the *Trunk* and *DpnGateway* components.
Mib	DpnTrunks

ATTRIBUTE DpnGate measuredSpeedToIf (spd)

Access	Read only
Description	This attribute indicates the current “transmittable” bandwidth of the underlying facility. For a *Trunk* with a *Unack* subcomponent, and a *DpnGateway* with a *Utp* subcomponent, if a serial port is used, the value is the measured transmit speed of the port; if a channelized port (E1/DS1) is used, the value is the measured transmit speed of the *Channel*. For a *Trunk* with an *AtmAccess* subcomponent, the value is calculated by converting the VCC transmit cell rate to an equivalent bit rate. The VCC transmit cell rate is determined based on the *vccReportingBw* attribute of the *Trunk AtmAccess* component. If *vccReportingBw* has a value of ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***no***, the peak cell rate (PCR) of the VCC, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, is used. If *vccReportingBw* has a value of ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***yes***, the minimum of the PCR, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, and the current cell rate (CCR) of the VCC is used. If *vccReportingBw* has a value of ***acr***, the best measurement of the actual cell rate (ACR) of the VCC is used, which is the minimum of

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	the PCR, the CCR and the actual shaping rate (ASR). For a *Trunk* with an *MplsAccess* subcomponent, the value is the transmit bandwidth reserved on the MPLS transport *Lsp*. For a *DpnGateway* with a *FrAccess* subcomponent, the value indicates the *committedInformationRate* of *FrAccess FrMuxSetup*. A value of zero is displayed when the underlying facility is disabled or the current “transmittable” bandwidth is unknown.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

ATTRIBUTE DpnGate maxTxUnit (mtu)

Access	Read only
Description	This is the maximum transmission unit (byte size) that is supported by the *Trunk* or *DpnGateway* component. This size includes the data and routing headers. A value of zero indicates the MTU has not yet been determined.
Mib	DpnTrunks
Values	Decimal (0..65535)
Units	bytes
Default	0

ATTRIBUTE DpnGate measuredRoundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the measured Round Trip Delay (msec) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. The value includes emission, propagation, and queuing delays. A 512 byte data packet is used to perform the measurement. A value of zero is displayed when the link is disabled or the measured Round Trip Delay is unknown.
Mib	DpnTrunks
Values	Decimal (0.0..1500.0)
Units	msec
Default	0.0

GROUP DpnGate Statistics (Stats)

Properties	Operational
Description	This group of attributes contains statistics collected by the *DpnGateway* component.

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Mib	DpnTrunks

ATTRIBUTE DpnGate pktFromIf (pkt)

Access	Read only
Description	This attribute counts the number of packets received from the remote module. This counter wraps around to zero when the maximum value is reached.
Mib	DpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate trunkPktFromIf (trk)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets received from the remote module. These packets are forwarded to the *DpnGateway* component. This counter wraps around to zero when the maximum value is reached.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate trunkPktToIf (trkti)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets transmitted to the remote module. This counter wraps around to zero when the maximum value is reached.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate discardUnforward (disc)

Access	Read only
Description	This attribute counts the number of packets received from the remote module that have been discarded. This counter wraps around to zero when the maximum value is reached. Two main reasons that cause this counter to increment are: the remote protocol is not compatible to the local protocol stack or, the packet cannot be forwarded due to either a recent loss of connectivity or due to congestion.
Mib	DpnTrunks

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Values	Long Integer
Default	No default

ATTRIBUTE DpnGate discardTrunkPktFromIf (discTrk)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets received from the remote module that have been discarded. This counter wraps around to zero when the maximum value is reached. The two main reasons that cause this counter to increment is if the DpnGateway is un-synchronized with DPN-100 and if the remote protocol is not the same version as the local protocol.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate stagingAttempts (statt)

Access	Read only
Description	This attribute counts the number of times that the staging protocol has attempted to stage with the remote module. This counter wraps around to zero when the maximum value is reached. The main reason for this counter to increment is that the local hardware is up but the local protocol cannot stage with the remote protocol due to a faulty connection. If the value is zero, then the local hardware has never enabled successfully.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate discardTrunkPktToIf (discTrkti)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets that have been discarded before being transmitted to the remote module. This counter wraps around to zero when the maximum value is reached. The main reason that causes this counter to increment is that the DpnGateway can not get sufficient resources to create an internal trunk protocol packet.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS DpnGateway

Description	The statistics record generated by the DpnGateway component.

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ATTRIBUTE DpnGate remoteComponentName (remote)

Description	This attribute is the component name of the remote end which it has supplied through the *Trunk* or *DpnGateway* staging protocol.
Values	String (1..26, ASCII)

ATTRIBUTE DpnGate measuredSpeedToIfMax

Description	This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredSpeedToIfMin

Description	This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredSpeedToIfCurrent

Description	This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredRoundTripDelayMax

Description	This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE DpnGate measuredRoundTripDelayMin

Description	This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE DpnGate measuredRoundTripDelayCurrent

Description	This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.
Values	Decimal (0..1500)

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ATTRIBUTE DpnGate fwdPktFromIf (fwdPkt)

Description	This attribute counts the number of forwarding packets received on the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE DpnGate fwdDiscUnforwardFromIf (fwdDisc)

Description	This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE DpnGate fwdOctetFromIf (fwdOctet)

Description	This attribute counts the number of forwarding bytes received on the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

COMPONENT DpnGate Utp

Groups	GROUP DpnGate Utp Provisioned (Prov) GROUP DpnGate Utp OsiState (State) GROUP DpnGate Utp Operational (Op) GROUP DpnGate Utp Statistics (Stats)
Scope	Network
Description	*DpnGateway/n Utp* The *Utp* component provides the Utp Level2 link protocol, an acknowledged protocol that provides selective retransmission of frames. A *Framer* subcomponent is automatically added providing the underlying HDLC framing and associated hardware that the *Utp* component will use.
Mib	UtpDpnTrunks
Subcomponents	COMPONENT DpnGate Utp Framer
Common Verbs	Help List Display Add DELete

GROUP DpnGate Utp Provisioned (Prov)

Properties	Provisioned
Description	This group of provisionable attributes contains the parameters used by *Unacknowledged*, *Utp,* and *FrAccess* for monitoring link quality.
Mib	UtpDpnTrunks

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ATTRIBUTE DpnGate Utp maximumErroredInterval

Access	Read and write
Description	This attribute specifies the interval time over which the error threshold (as specified by *receiveErrorSensitivity)* must be continuously exceeded before the *Unacknowledged, Utp,* or *FrAccess* component can be degraded. Once the error interval count exceeds the provisioned value, the *Unacknowledged*, *Utp,* or *FrAccess* component issues an alarm indicating that link quality has degraded, and it disables its parent component. The exception to this is a value of zero, the default, which indicates that the mechanism is completely disabled.
Mib	UtpDpnTrunks
Values	Decimal (0; 1..15)
Units	minutes
Default	0

ATTRIBUTE DpnGate Utp receiveErrorSensitivity

Access	Read and write
Description	This attribute is the allowable error rate beyond which the *Unacknowledged*, *Utp,* or *FrAccess* component can be degraded if it persists for a duration longer than the *maximumErrorInterval*. The threshold is expressed as a percentage of number of errored frames in the last interval per number of frames received in the last interval. The exception to this is a value of zero, which indicates that the mechanism is completely disabled. The configurable values are: 0 = the mechanism is completely disabled 1 = 1/(2**1) 2 = 1/(2**2) 3 = 1/(2**3) : 10 = 1/(2**10)
Mib	UtpDpnTrunks
Values	Decimal (0; 1..10)
Default	3

GROUP DpnGate Utp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UtpDpnTrunks
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DpnGate Utp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UtpDpnTrunks
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE DpnGate Utp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UtpDpnTrunks
Values	idle active (activ) busy
Default	idle

ATTRIBUTE DpnGate Utp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

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The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	UtpDpnTrunks
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE DpnGate Utp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform

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its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	UtpDpnTrunks
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE DpnGate Utp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	UtpDpnTrunks
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE DpnGate Utp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	UtpDpnTrunks
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE DpnGate Utp standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	UtpDpnTrunks
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE DpnGate Utp **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	UtpDpnTrunks
Values	false true
Default	false

GROUP DpnGate Utp **Operational (Op)**

Properties	Operational
Description	This group of attributes contains the set of UTP operational parameters measured and maintained by this component.
Mib	UtpDpnTrunks

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ATTRIBUTE DpnGate Utp roundTripDelay (rtd)

Access	Read only
Description	This is the measured Round Trip Delay (ms) discovered with the remote through the UTP staging protocol. The value includes emission, propagation, and queuing delays. A 2 byte control frame is used to perform the measurement. A value of zero is displayed when the link is disabled or the measured Round Trip Delay is unknown.
Mib	UtpDpnTrunks
Values	Decimal (0..1500)
Units	msec
Default	No default

GROUP DpnGate Utp Statistics (Stats)

Properties	Operational
Description	This group of attributes contains the set of Utp frame counters collected by this component.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp discardBadFromIf (discfi)

Access	Read only
Description	This attribute is the number of received frames discarded by the *Utp* component. UTP discards any received frame that is unknown to its protocol. This counter wraps around to zero when the maximum value is reached.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate Utp discardExcessToIf (discti)

Access	Read only
Description	This attribute is the number of transmitted frames discarded by the *Utp* component. Transmitted frames are discarded if the wait for transmission queue is congested. This counter wraps around to zero when the maximum value is reached.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE DpnGate Utp frmRexmtToIf (rexmt)

Access	Read only
Description	This attribute is the number of frames retransmitted by the *Utp* component. This counter wraps around to zero when the maximum value is reached.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate Utp areYouThereModeEntries (ayt)

Access	Read only
Description	This attribute is the number of times the *Utp* component entered the AreYouThere mode. UTP enters this mode whenever the acknowledgment for the last transmitted frame has not been received within a certain time interval. In this mode UTP verifies that the remote end is still active. If so, it will retransmit all frames that were waiting to be acknowledged. This counter wraps around to zero when the maximum value is reached.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate Utp windowClosures (closures)

Access	Read only
Description	This attribute is the number of times the *Utp* component closed its frame window. The frame window determines the maximum number of unacknowledged frames allowed. Typically, the frame window closes when the remote end cannot keep up with the frame arrival rate. This counter wraps around to zero when the maximum value is reached.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	No default

COMPONENT DpnGate Utp Framer

Groups

GROUP DpnGate Utp Framer Provisioned (Prov)
GROUP DpnGate Utp Framer LinkOptions (Link)
GROUP DpnGate Utp Framer OsiState (State)
GROUP DpnGate Utp Framer Statistics (Stats)
GROUP DpnGate Utp Framer LinkUtilization (Util)
GROUP DpnGate Utp Framer LinkUtilThreshold (UtilThreshold)

COLLECTED STATS DpnGateway Utp Framer

Scope Device

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Description

Trunk/n Utp Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib UtpDpnTrunks

Common Verbs
Help
List
Display

GROUP DpnGate Utp Framer **Provisioned (Prov)**

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer **interfaceName**

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib UtpDpnTrunks

Values Link (Hardware, applicationFramerName)

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Default	No default

GROUP DpnGate Utp Framer **LinkOptions (Link)**

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer **framingType**

Access	Read and write
Criticality	Process
Description	This attribute defines the type of framing on the link.
Mib	UtpDpnTrunks
Values	hdlc
Default	hdlc

ATTRIBUTE DpnGate Utp Framer **dataInversion**

Access	Read and write
Description	This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed. This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density. Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.
Mib	UtpDpnTrunks
Values	off on
Default	off

ATTRIBUTE DpnGate Utp Framer **frameCrcType**

Access	Read and write
Description	This attribute defines the type of CRC used.

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The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness.
NoCrc means that CRC is not used.

Mib: UtpDpnTrunks

Values:
crc16
crc32
noCrc

Default: crc16

ATTRIBUTE DpnGate Utp Framer **flagsBetweenFrames**

Access: Read and write

Description:

This attribute defines the number of flags that are inserted between frames sent to the link interface.

Mib: UtpDpnTrunks

Values: Decimal (1..16)

Default: 1

GROUP DpnGate Utp Framer **OsiState (State)**

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer **adminState (osiAdmin)**

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — UtpDpnTrunks

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE DpnGate Utp Framer **operationalState (osiOper)**

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — UtpDpnTrunks

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE DpnGate Utp Framer **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — UtpDpnTrunks

Values — idle
active (activ)
busy

Default — idle

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GROUP DpnGate Utp Framer **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics data for a UTP Framer component.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer **aborts**

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **crcErrors**

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **lrcErrors**

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **nonOctetErrors**

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	UtpDpnTrunks

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **overruns**

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **underruns**

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **largeFrmErrors**

Access	Read only
Description	This attribute is the total number of frames received which were too large. The frame exceeded the maximumFrameLengthLimit provisioned attribute or it contained more than the 255 block hardware limit.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **frmModeErrors**

Access	Read only
Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	UtpDpnTrunks

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **outOfSequenceFrm**

Access	Read only
Description	This attribute is the total number of out of sequence frames in interrupting mode that have been received from the link.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **repeatedFrm**

Access	Read only
Description	This attribute is the total number of repeated frames (frames with the same sequence number) in interrupting mode that have been received from the link.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer **frmToIf**

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	UtpDpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate Utp Framer **frmFromIf**

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	UtpDpnTrunks
Values	Long Integer

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Default	No default

ATTRIBUTE DpnGate Utp Framer **octetFromIf**

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	UtpDpnTrunks
Values	Long Integer
Default	No default

GROUP DpnGate Utp Framer **LinkUtilization (Util)**

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer **normPrioLinkUtilToIf**

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	UtpDpnTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE DpnGate Utp Framer **highPrioLinkUtilToIf**

Access	Read only
Description	This attribute is the utilization of the interrupting data traffic sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with a Transfer Priority (TP) of 11 and/or Emission Priority of 1. The utilization is the average for the last minute.
Mib	UtpDpnTrunks
Values	Decimal (0..100)
Units	%

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Default	0

ATTRIBUTE DpnGate Utp Framer **normPrioLinkUtilFromIf**

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	UtpDpnTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE DpnGate Utp Framer **highPrioLinkUtilFromIf**

Access	Read only
Description	This attribute is the utilization of the interrupting data traffic received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with a Transfer Priority (TP) of 11 and/or Emission Priority of 1. The utilization is the average for the last minute.
Mib	UtpDpnTrunks
Values	Decimal (0..100)
Units	%
Default	0

GROUP DpnGate Utp Framer **LinkUtilThreshold (UtilThreshold)**

Properties	Provisioned
Description	This group contains all of the provisioning data required to set the link utilization alarm thresholds. All thresholds are percentages which can take on any value in the range of 0% through 100%. The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the minor alarm threshold is less than the other thresholds and that the major alarm threshold is less than the critical alarm threshold.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer **minorLinkUtilAlarmThreshold (minor)**

Access	Read and write

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Description

This attribute provides the threshold value which defines when a minor alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the minor alarm threshold is less than the other thresholds.

Mib: UtpDpnTrunks

Values: Decimal (0..100)

Units: %

Default: 75

ATTRIBUTE DpnGate Utp Framer **majorLinkUtilAlarmThreshold (major)**

Access: Read and write

Description

This attribute provides the threshold value which defines when a major alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the major alarm threshold is greater than the minor threshold and less than the critical threshold.

Mib: UtpDpnTrunks

Values: Decimal (0..100)

Units: %

Default: 85

ATTRIBUTE DpnGate Utp Framer **criticalLinkUtilAlarmThreshold (critical)**

Access: Read and write

Description

This attribute provides the threshold value which defines when a critical alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued

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after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the critical alarm threshold is greater than the other thresholds.

Mib	UtpDpnTrunks
Values	Decimal (0..100)
Units	%
Default	95

ATTRIBUTE DpnGate Utp Framer **linkUtilAlarmStatus (status)**

Access	Read and write
Description	This attribute provides control of the generation of link utilization alarms. If the value is ***disabled***, none of the alarms are generated (this is equivalent to setting all of the thresholds to 100%). If the value is ***enabled***, the individual thresholds are handled.
Mib	UtpDpnTrunks
Values	enabled (ena) disabled (dis)
Default	disabled

COLLECTED STATS DpnGateway Utp Framer

Description	The statistics record generated by the DpnGateway Utp Framer component.

ATTRIBUTE DpnGate Utp Framer **rxBytes**

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DpnGate Utp Framer **rxFrames**

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DpnGate Utp Framer **txBytes**

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

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ATTRIBUTE DpnGate Utp Framer **txFrames**

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DpnGate Utp Framer **rxTotalLinkUtil**

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT DpnGate **ForwardingStatistics (FwdStats)**

Groups	GROUP DpnGate FwdStats Operational (Oper)
Scope	Application
Description	*Trunk/n ForwardingStatistics* This is a dynamic subcomponent of a *Trunk* or *DpnGateway* which appears when packet forwarding traffic is used over the *Trunk* or *DpnGateway*. It contains statistics associated with packet forwarding traffic for *Trunks* and *DpnGateways*.
Mib	DpnTrunks
Common Verbs	Help List Display

GROUP DpnGate FwdStats **Operational (Oper)**

Properties	Operational
Description	This operational group counts the *Trunk* or *DpnGateway* packet forwarding traffic statistics for operator console display.
Mib	DpnTrunks

ATTRIBUTE DpnGate FwdStats **fwdPktFromIf (fwdPkt)**

Access	Read only
Description	This attribute counts the number of forwarding packets received by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	DpnTrunks
Values	Long Integer
Default	No default

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ATTRIBUTE DpnGate FwdStats fwdDiscUnforwardFromIf (fwdDisc)

Access	Read only
Description	This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	DpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate FwdStats fwdOctetFromIf (fwdOctet)

Access	Read only
Description	This attribute counts the number of forwarding bytes received by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	DpnTrunks
Values	Long Integer
Default	No default

COMPONENT DpnGate FrAccess

Groups	GROUP DpnGate FrAccess Provisioned (Prov) GROUP DpnGate FrAccess OsiState (State) GROUP DpnGate FrAccess Operational (Op) GROUP DpnGate FrAccess Statistics (Stats)
Scope	Network
Description	*DpnGate/n FrAccess* This component provides Layer 2 trunking protocol, to be used by *DpnGateway* running over *FrMux* frame relay interface.
Mib	FraDpnTrunks
Subcomponents	COMPONENT DpnGate FrAccess FrMuxSetup
Common Verbs	Help List Display Add DELete

GROUP DpnGate FrAccess Provisioned (Prov)

Properties	Provisioned
Description	This group of provisionable attributes contains the parameters used by *Unacknowledged*, *Utp,* and *FrAccess* for monitoring link quality.

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Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess maximumErroredInterval

Access	Read and write
Description	This attribute specifies the interval time over which the error threshold (as specified by *receiveErrorSensitivity)* must be continuously exceeded before the *Unacknowledged, Utp,* or *FrAccess* component can be degraded. Once the error interval count exceeds the provisioned value, the *Unacknowledged*, *Utp,* or *FrAccess* component issues an alarm indicating that link quality has degraded, and it disables its parent component. The exception to this is a value of zero, the default, which indicates that the mechanism is completely disabled.
Mib	FraDpnTrunks
Values	Decimal (0; 1..15)
Units	minutes
Default	0

ATTRIBUTE DpnGate FrAccess receiveErrorSensitivity

Access	Read and write
Description	This attribute is the allowable error rate beyond which the *Unacknowledged*, *Utp,* or *FrAccess* component can be degraded if it persists for a duration longer than the *maximumErrorInterval*. The threshold is expressed as a percentage of number of errored frames in the last interval per number of frames received in the last interval. The exception to this is a value of zero, which indicates that the mechanism is completely disabled. The configurable values are: 0 = the mechanism is completely disabled 1 = 1/(2**1) 2 = 1/(2**2) 3 = 1/(2**3) : 10 = 1/(2**10)
Mib	FraDpnTrunks
Values	Decimal (0; 1..10)
Default	3

GROUP DpnGate FrAccess OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this

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group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — FraDpnTrunks

ATTRIBUTE DpnGate FrAccess adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — FraDpnTrunks

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE DpnGate FrAccess operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — FraDpnTrunks

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Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DpnGate FrAccess usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FraDpnTrunks
Values	idle active (activ) busy
Default	idle

ATTRIBUTE DpnGate FrAccess availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

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The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — FraDpnTrunks

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE DpnGate FrAccess proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FraDpnTrunks
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE DpnGate FrAccess **controlStatus (osiCntrl)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

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The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FraDpnTrunks

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE DpnGate FrAccess alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: FraDpnTrunks

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

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ATTRIBUTE DpnGate FrAccess standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	FraDpnTrunks
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE DpnGate FrAccess unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FraDpnTrunks
Values	false true
Default	false

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GROUP DpnGate FrAccess Operational (Op)

Properties	Operational
Description	This group of attributes contains the set of LTP operational parameters measured and maintained by this component.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess roundTripDelay (rtd)

Access	Read only
Description	This is the measured Round Trip Delay (ms) discovered with the remote through the LTP staging protocol. The value includes emission, propagation, and queuing delays. A 2 byte control frame is used to perform the measurement. A value of zero is displayed when the link is disabled or the measured Round Trip Delay is unknown.
Mib	FraDpnTrunks
Values	Decimal (0..1500)
Units	msec
Default	No default

GROUP DpnGate FrAccess Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for *FrAccess*.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess receivedBytesFromIf (rbfi)

Access	Read only
Description	This attribute counts the number of bytes received by *FrAccess* in information frames. When the maximum count is reached the count wraps to zero.
Mib	FraDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate FrAccess lostFramesFromIf (lfti)

Access	Read only
Description	This attribute counts the frames lost in the direction from interface, the loss of which is detected based on the sequence number mechanism. The

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reason for a loss may be the congestion-related loss in the external frame relay network, or errors/congestion developing in the *FrMux* service. When *FrMux* statistics do not show errors/congestion developing internally in *FrMux*, then the losses visible through this statistic should be attributed to the external frame relay network. When the maximum count is reached the count wraps to zero.

Mib	FraDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate FrAccess discardBadFromIf (dbfi)

Access	Read only
Description	This attribute counts the number of frames discarded in the direction 'from interface', because they are unknown to the *FrAccess* protocol. When the maximum count is reached the count wraps to zero.
Mib	FraDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate FrAccess discardExcessToIf (deti)

Access	Read only
Description	This attribute counts the number of frames discarded in the direction 'to interface' because of congestion on the transmit queue. When the maximum count is reached the count wraps to zero.
Mib	FraDpnTrunks
Values	Decimal (0..4294967295)
Default	0

COMPONENT DpnGate FrAccess FrMuxSetup

Groups	GROUP DpnGate FrAccess FrMuxSetup TrafficDescriptors (TrafficDescr) GROUP DpnGate FrAccess FrMuxSetup DlciCompNameOp
Scope	Application

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Description	*DpnGate/n FrAccess FrMuxSetup* This component contains operational and provisionable attributes for setting up a *FrMux Dlci* to act as a transport for *DpnGate/n FrAccess*.
Mib	FraDpnTrunks
Subcomponents	COMPONENT DpnGate FrAccess FrMuxSetup PvcSetup
Common Verbs	Help List Display

GROUP DpnGate FrAccess FrMuxSetup TrafficDescriptors (TrafficDescr)

Properties	Provisioned
Description	This group contains the provisionable attributes for the application of which this *FrMuxSetup* is a subcomponent. The parameters are used for maximum frame size checking and traffic shaping and are to be passed over to *FrMux Dlci* associated with the application. The attributes in this group are defined in T1.606 Addendum 1.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess FrMuxSetup committedInformationRate (cir)

Access	Read and write
Criticality	Process
Description	This attribute specifies, in bit/s, the committed information rate (CIR) to which the traffic transmitted towards the interface is shaped. The minimum value is 4800 bit/s.
Mib	FraDpnTrunks
Values	Decimal (4800..2048000)
Units	bit/s
Default	64000

ATTRIBUTE DpnGate FrAccess FrMuxSetup maximumFrameSize (n203)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.

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Mib	FraDpnTrunks
Values	Decimal (1..4096)
Units	octets
Default	4096

GROUP DpnGate FrAccess FrMuxSetup DlciCompNameOp

Properties	Operational
Description	This group contains the component name of the *Dlci* which carries the traffic for this application.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess FrMuxSetup dlciCompName

Access	Read only
Description	This attribute specifies the component name of the *Dlci* with which the application using this *FrMuxSetup* component is associated. The name is a string *FrMux/n Dlci/m*. For a PVC this is the same component name as provisioned under the subcomponent *FrMuxPvcSetup*.
Mib	FraDpnTrunks
Values	The name of the component
Default	No default

COMPONENT DpnGate FrAccess FrMuxSetup PvcSetup

Groups	GROUP DpnGate FrAccess FrMuxSetup PvcSetup Provisioned (Prov)
Scope	Application
Description	*DpnGate/n FrAccess FrMuxSetup PvcSetup* This component contains provisionable attributes for setting up a *Dlci* associated with the application using this component. The *Dlci* is of a PVC type.
Mib	FraDpnTrunks
Common Verbs	Help List Display

GROUP DpnGate FrAccess FrMuxSetup PvcSetup Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for setting up a *Dlci*

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	associated with the application using the *FrMuxSetup* component. The *Dlci* is of the PVC type.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess FrMuxSetup PvcSetup **dlciName**

Access	Read and write
Criticality	Process
Description	This attribute is the link to the *Dlci* which is associated with the application using the *FrMuxSetup* component.
Mib	FraDpnTrunks
Values	Link (Hardware, applicationName)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - DpnGate

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - em

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COMPONENT EM

Scope	Device
Description	*Em/string* This component represents the local node. An instance of the *EM* component class (with the local node name as its instance string) is automatically created as the root of the component hierarchy; that is, all of the top level components are its subcomponents. The local node name is provisioned as the *nodeName* attribute of the *ModuleData* component. An operator need not enter the *EM* component at the start of a component name; the local node is assumed by default. However, to specify some

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	other node, it must be entered. Similarly, on output, the local node name is suppressed.
Mib	no_mib
Subcomponents	RncInterfaceNode (RncIn) CpdsNode (Cpds) ProvisioningSystem (Prov) Shelf Software (Sw) ModuleData (Mod) NetworkManagementInterfaceSystem (Nmis) Time (Time) Collector (Col) ActiveAlarmServices (AAServ)
Opt. Subcomp.	Router (Rtr) PortBridgeGroup (Pbg) EthernetTransportSystem (Ets) LogicalProcessor (Lp) AccessControl (Ac) NetworkSynchronization (NS) Routing (Rtg) CallRouter (CR) VoiceNetworkingCallServer (Vncs) IpInterfaceOverFrameRelay (IpiFr) IpInterfaceOverVc (Ipivc) Trunk (Trk) DpnGateway (DpnGate) FrameRelayNni (FrNni) FrameRelayUni (FrUni) FrameRelayAtmInterface (FrAtm) VoiceService (Vs) "BitTransparentDataService (Btds)" HdlcTransparentDataService (Htds) X25Dte AtmRouting (ARtg) VirtualRouter (Vr) FrameRelayDte (FrDte) PointToPointProtocol (Ppp) "ClusterBridge (CB)" PseudoBridge (PB) LanApplication (La) RemoteServerAgent (Rsa) FrMux "AtmInterface (AtmIf)" SignallingChannel (SigChan) VoiceRoute (VRoute) VoiceSubroute (Vsr) AtmMultiprotocolEncapsulation (AtmMpe) Aal1CircuitEmulationService (Aal1Ces) DataSignallingChannel (DataSigChan)

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McsManager (McsMgr)
MpaNetworkLink (MpanI)
LanEmulationClient (Lec)
NarrowbandServicesTrunkOverATM (Nsta)
"GsmIwfCallServer (GsmCs)"
GsmIwfBearerChannel (GsmBc)
"Dcme"
DcmeLink (Dcl)
HuntGroup (Hg)
CallRedirectionServer (Crs)
VirtualMedia (Vm)
AutomaticProtectionSwitching (Aps)
TdmaIwfCallServer (TdmaCs)
TdmaIwfBearerChannel (TdmaBc)
RoutingGateway (RGty)
PCUSupportApplication (Pcusa)
PacketControlUnitSupportNode (Pcusn)
PcGprsTransportLayer (PcGtl)
TdmaIwfFcBearerChannel (TdmaFcBc)
Layer2TunnelingProtocolAccessConcentrator (Lac)
MaintenanceMonitorTx (MmTx)
FrameRelayIpServer (FrIpServer)
PppIwf (Piwf)
IuxInterface (IuxIf)
"DualLpEquipmentProtection (Dlep)"
IpDlciGroup (IpDlciGrp)
LocalMedia
ServiceTrace (SrvTrace)
SignallingSystem7 (Ss7)
IuPc (IuPc)
LpGroup (LpG)
RoutineExerciser (Rex)
VcTester (Vct)
LineAutomaticProtectionSwitching (Laps)

Dyn. Subcomp.

FileSystem (Fs)
TransportResource (Trm)
NumberingPlanIndicator (Npi)
LpPair (LpP)

Common Verbs

Help
List

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VERB LOGOUT (LOGOFF)

Impact	Passive
Description	*Logout* This verb terminates a Local or Telnet Operator session. If the session was in provisioning mode, an *End Prov* command is effectively executed before the session terminates. The edit view is neither saved nor modified by logging out while in provisioning mode.

VERB ME

Impact	Passive
Description	*Me* This verb displays an FMIP, Local or Telnet Operator's component name and userid as well as other information.

VERB CANCEL

Impact	Passive
Description	*Cancel* This verb aborts the latest command, if possible.

VERB QUIT (EXIT)

Impact	Passive
Description	*Quit* This verb terminates a Local or Telnet Operator session, just like the *Logout* command does. If the session was in provisioning mode, an *End Prov* command is effectively executed before the session terminates. The edit view is neither saved nor modified by logging out while in provisioning mode.

VERB RESETLOCAL

Impact	System_admin
Description	Resetlocal This verb logs out a user currently using the local operator port on the CP. This command can be executed from a telnet session to force another user out of the local port.

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Components Reference - em

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Components Reference - Ets

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COMPONENT EthernetTransportSystem (Ets)

Groups	GROUP Ets Provisioned (Prov) GROUP Ets Operational (Oper)
Scope	Network
Description	*EthernetTransportSystem* This component represents the Ethernet transport system. It is used to provide aggregation of one or more EVLS VLANs from one Ethernet interface to another Ethernet interface over a single ATM virtual circuit (VC). It can establish one or more ATM VCs to provide connectivity among multiple Ethernet interfaces, one ATM VC for each Ethernet interface pair. At least one *EvlsAtmTransport* subcomponent must exist under this component.
Mib	no_mib
Opt. Subcomp.	COMPONENT Ets EvlsAtmTransport (EAtmTrsp)
Common Verbs	Help List Display Add DELete

GROUP Ets Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetTransportSystem* component.
Mib	no_mib

ATTRIBUTE Ets nsapAddress (nsapAddr)

Access	Read and write
Criticality	Component

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Description	This attribute specifies a 40-digit ATM address in standard ISO NSAP format. This is the local address of the shelf for the *EthernetTransportSystem* component within the ATM routing database. If the default value is used, an internal NSAP address is generated using the value of the *ModuleData nodePrefix* attribute and the value of the End System Identifier (ESI) that is the assigned number for ETS. This internal NSAP address can be displayed using the *Ets activeNsapAddress* operational attribute.
Mib	no_mib
Values	String (40, AESANsapAddress)
Default	470000000000000000000000000000000000000000

GROUP Ets Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *EthernetTransportSystem* component.
Mib	no_mib

ATTRIBUTE Ets activeNsapAddress (actNsapAddr)

Access	Read only
Description	This attribute indicates the local NSAP address of the shelf for the *EthernetTransportSystem* component in the ATM network.
Mib	no_mib
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Ets totalAdmittedConnections (tAdmConns)

Access	Read only
Description	This attribute indicates the total number of EVLS VLANs that are being aggregated by the Ethernet Transport System.
Mib	no_mib
Values	Decimal (0..32000)
Default	No default

ATTRIBUTE Ets connectionAttemptFailures (conFail)

Access	Read only
Description	This attribute counts the total number of EVLS VLANs that have requested admission, and have not been admitted.

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When this count reaches the maximum, it wraps around to zero.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ets EvlsAtmTransport (EAtmTrsp)

Instance	Decimal (1..256)
Groups	GROUP Ets EAtmTrsp Provisioned (Prov) GROUP Ets EAtmTrsp OsiState (State) GROUP Ets EAtmTrsp OperationalStatus (OperStatus) GROUP Ets EAtmTrsp Operational (Oper)
Scope	Application
Description	*Ets EvlsAtmTransport/n* This component represents connectivity between a local Ethernet interface and either a far end Ethernet interface or a far end ATM UNI. It is responsible for aggregating one or more EVLS VLANs for the specified *LanApplication* instance and mapping these VLANs to a single shared ATM transport VC.
Mib	no_mib
Opt. Subcomp.	COMPONENT Ets EAtmTrsp EthSourceEvlsAtmTransport (SrcEAtmTrsp)
Opt. Subcomp.	COMPONENT Ets EAtmTrsp EthernetOverAtmSpvc (Spvc)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Ets EAtmTrsp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the *EvlsAtmTransport* component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp lanApplication (lanApp)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the component name of the *LanApplication* component. It is used to ensure the transport of traffic, over this shared ATM transport VC, is to and from a single local Ethernet interface.
Mib	no_mib
Values	The name of the component
Default	No default

ATTRIBUTE Ets EAtmTrsp prefixNsapAddress (preNsapAddr)

Access	Read and write
Description	This attribute specifies the 40-digit NSAP of the far end Ethernet interface. The Ethernet Transport System searches for an *EvlsAtmTransport* component with a value of this attribute that matches exactly the *remoteAddress* of an EVC configured to use aggregation. The value of this attribute must be unique among all the *EvlsAtmTransport* components that share the same *lanApplication* value.
Mib	no_mib
Values	String (40, AESANsapAddress)
Default	No default

GROUP Ets EAtmTrsp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Ets EAtmTrsp operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Ets EAtmTrsp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

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GROUP Ets EAtmTrsp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Ets EAtmTrsp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *EvIsAtmTransport* component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp remoteAddress (rAddr)

Access	Read only
Description	This attribute indicates the 40-digit NSAP address of the far end *EthernetTransportSystem* component that terminates this ATM transport VC.
Mib	no_mib
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Ets EAtmTrsp remoteEvIsAtmTransportId (rEAtmTrspId)

Access	Read only
Description	This attribute indicates the instance value of the *EvIsAtmTransport* component on the far end *EthernetTransportSystem* to which this ATM transport VC is established.
Mib	no_mib

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Values	Decimal (0..512)
Default	No default

ATTRIBUTE Ets EAtmTrsp admittedConnections (admConns)

Access	Read only
Description	This attribute is a vector of five elements that indicates how many EVCs are established over this ATM transport VC for each ATM service category.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	ubr rtvbr nrtvbr cbr ubrplus
Default	No default

COMPONENT Ets EAtmTrsp EthSourceEvlsAtmTransport (SrcEAtmTrsp)

Groups	GROUP Ets EAtmTrsp SrcEAtmTrsp Provisioned (Prov)
Scope	Application
Description	*Ets EAtmTrsp/n EthernetSourceEvlsAtmTransport* This component represents the connection setup information used by the calling end of this *EvlsAtmTransport* component to establish connectivity to either a far end *EthernetTransportSystem* component, or in the case that the *EthoAtmSourceVcc* is also configured to a far end ATM UNI. This component must exist if the *Spvc* component is provisioned.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Ets EAtmTrsp SrcEAtmTrsp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthSourceEvlsAtmTransport* component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp SrcEAtmTrsp remoteAddress (rAddr)

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Access	Read and write
Criticality	Component
Description	For an end-to-end *EvIsAtmTransport* component configuration, this attribute indicates the 40-digit NSAP address of the far end *EthernetTransportSystem* component to which this *EvIsAtmTransport* component is to be established. For a single-ended EVLS Atm Transport configuration, this attribute indicates the 40-digit NSAP address of the far end ATM UNI to which this *EvIsAtmTransport* component is to be established.
Mib	no_mib
Values	String (40, AESANsapAddress)
Default	No default

ATTRIBUTE Ets EAtmTrsp SrcEAtmTrsp **remoteEvIsAtmTransportId (rEAtmTrspId)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the instance value of the *EvIsAtmTransport* component on the far end Ethernet transport system to which this Atm transport is to be established.
Mib	no_mib
Values	Decimal (1..256)
Default	No default

ATTRIBUTE Ets EAtmTrsp SrcEAtmTrsp **retryPeriod (retry)**

Access	Read and write
Description	This attribute specifies the interval at which an SPVC connection attempts re-establishment after the calling end of the SPVC initiates the setup request and receives a release message.
Mib	no_mib
Values	Decimal (10..3600)
Units	seconds
Default	20

COMPONENT Ets EAtmTrsp **EthernetOverAtmSpvc (Spvc)**

Instance	Decimal (0..0)
Groups	GROUP Ets EAtmTrsp Spvc Operational (Oper) GROUP Ets EAtmTrsp Spvc TrafficManagementOper (TmOper) GROUP Ets EAtmTrsp Spvc AtmSpvcInfo (SpvcInfo)

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Scope	Network
Description	*Ets EAtmTrsp/x EthernetOverAtmSpvc/m* This component represents one of the SPVC endpoints of the ATM transport connection. This component can be dynamically created or provisioned. When this component is dynamically created, it implicitly indicates that a connection has been established and this SPVC is the called endpoint of the VCC. The *Spvc endPoint* operational attribute is used to indicate the called end. This dynamically created component does not exist when there is no connection. When this component is provisioned, it implies that this is the calling endpoint of the VCC. It does not imply that a connection is established. A provisioned *Spvc* component allows initiation of the setup request to the called end of the ATM transport connection
Mib	no_mib
Subcomponents	COMPONENT Ets EAtmTrsp Spvc TrafficManagement (Tm)
Opt. Subcomp.	COMPONENT Ets EAtmTrsp Spvc EthoAtmSourceVcc (SrcVcc)
Dyn. Subcomp.	COMPONENT Ets EAtmTrsp Spvc AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) **Ets EAtmTrsp Spvc**

Impact	Service
Description	*Clear Ets EAtmTrsp/n EthernetOverAtmSpvc/m* This command can be issued on the calling or called SPVC endpoint. At the calling end, this command tears down the active SPVC connection and tries to re-establish the connection immediately. At the called end, this command tears down the active SPVC connection and waits for a new incoming call request. If there is no active SPVC, the *clear* command has no effect.

GROUP **Ets EAtmTrsp Spvc** **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes for the *EthernetOverAtmSpvc* component.

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This group is displayed in calling end, and only *spvcStatus* and *endPoint* attributes are displayed in called end.

Mib no_mib

ATTRIBUTE Ets EAtmTrsp Spvc spvcStatus (status)

Access Read only

Description This attribute indicates the status of the incoming and outgoing connection.

serviceNotReady indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests are processed.

serviceReady indicates that a connection has not yet been established and that setup requests are sent in calling end of the SPVC or that the setup request is expected in the called end of the SPVC.

waitingForConnect indicates that a connection has not been established and the component is waiting to restart.

connected indicates that a connection has been established.

setupFailed indicates that the ATM Networking resources are not available to setup the connection at the calling end of the SPVC

connectFailed indicates that the ATM Networking resources are not available to setup the connection at the called end of the SPVC.

releaseFailed indicates that retryLimit consecutive connection setup attempts have failed, and the connection procedure has been aborted.

Mib no_mib

Values
serviceNotReady
serviceReady
waitingForConnect
connected
setupFailed
connectFailed
releaseFailed

Default No default

ATTRIBUTE Ets EAtmTrsp Spvc endPoint (endPt)

Access Read only

Description This attribute indicates whether this SPVC is the called or calling endpoint of the VCC. If the value is ***called***, this is the endpoint that receives the setup request from the remote end of the ATM transport connection. If the

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value is ***calling,*** this is the endpoint that initiates the setup request to the remote end of the ATM transport connection.

Mib no_mib

Values called
calling

Default No default

ATTRIBUTE Ets EAtmTrsp Spvc **retryFailures (failures)**

Access Read only

Description This attribute indicates consecutive failed connection attempts prior to the current attempt.It is reset to ***0*** whenever a connection is successfully established. The value wraps to ***0*** when it exceeds the maximum value.

If this attribute increments, please refer to the *Spvc lastSetupFailureCause* attribute and *lastSetupFailureDiagnostic* attribute for diagnostics.

Mib no_mib

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Ets EAtmTrsp Spvc **lastFailureCauseCode (cause)**

Access Read only

Description This attribute indicates the cause of the last ATM transport connection failure.

The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib no_mib

Values Decimal (0..255)

Default No default

ATTRIBUTE Ets EAtmTrsp Spvc **lastFailureDiagCode (diag)**

Access Read only

Description This attribute indicates a diagnostic to supplement *lastTearDownCause* attribute.

The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib no_mib

Values String (0..8, ASCII)

Default No default

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GROUP Ets EAtmTrsp Spvc **TrafficManagementOper (TmOper)**

Properties	Operational
Description	This group contains the traffic management operational attributes for the *EthernetOverAtmSpvc* component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp Spvc **txTrafficDescType (txTdt)**

Access	Read only
Description	This attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* attribute determines the number and meaning of the parameters in the attribute.
Mib	no_mib
Values	3 8 9
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc **rxTrafficDescType (rxTdt)**

Access	Read only
Description	This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.
Mib	no_mib
Values	3 8 9
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc **atmServiceCategory (sc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the desired ATM service category for this Spvc connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	no_mib

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Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr)
Default	unspecifiedBitRate

ATTRIBUTE Ets EAtmTrsp Spvc forceTagging (tagging)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR service category. A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection. A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection. For ***4pOC12SmIrAtm*** and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Ets EAtmTrsp Spvc txQosClass (txQos)

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.
Mib	no_mib
Values	0
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc rxQosClass (rxQos)

Access	Read only

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Description	This attribute indicates the quality of service for the called to calling direction for this connection. Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.
Mib	no_mib
Values	0
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc bearerClassBbc (bcBbc)

Access	Read only
Description	This attribute indicates the bearer capability for this connection. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.
Mib	no_mib
Values	x
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc transferCapabilityBbc (tcBbc)

Access	Read only
Description	This attribute indicates the transfer capability for this connection. Uni 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> 0: NoIndication, NoIndication 2: NoIndication, no 5: CBR, yes 9: VBR, yes The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data. The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing. The value yes for end-to-end timing indicates that end-to-end timing is required for the connection.

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The value no for end-to-end timing indicates that end-to-end timing is not required for the connection.

Mib: no_mib

Values:
0
2
5
9

Default: No default

ATTRIBUTE Ets EAtmTrsp Spvc bestEffort

Access: Read only

Description: This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

Mib: no_mib

Values:
indicated
notIndicated

Default: No default

ATTRIBUTE Ets EAtmTrsp Spvc txPacketWiseDiscard (txpd)

Access: Read only

Description: This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

Mib: no_mib

Set of:
ppd
epd

Default: No default

ATTRIBUTE Ets EAtmTrsp Spvc rxPacketWiseDiscard (rxpd)

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Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements. A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.
Mib	no_mib
Set of	ppd epd
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc **txTrafficDescParm (txTdp)**

Access	Read only
Description	This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute. Parameters 4 and 5 are unused by the *EthernetTransportSystem*. The values of peak cell rate (PCR), sustained cell rate (SCR), and minimum cell rate (MCR) are expressed in cell/s. When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused. When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 is unused. When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 is unused; parameter 3 represents the MCR.
Mib	no_mib
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc **rxTrafficDescParm (rxTdp)**

Access	Read only

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Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), and minimum cell rate (MCR) are expressed in cell/s. Parameter 4 is unused by the *EthernetTransportSystem*. When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameters 2 and 3 are unused. When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 is unused. When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 is unused; parameter 3 represents the MCR.
Mib	no_mib
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc txQosParameters (tqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	no_mib
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc rxQosParameters (rqp)

Access	Read only

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Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this connection. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	no_mib
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

GROUP Ets EAtmTrsp Spvc **AtmSpvcInfo (SpvcInfo)**

Properties	Operational
Description	This group contains connection operational information for the *EthernetOverAtmSpvc* component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp Spvc **totalBandwidth (tbw)**

Access	Read only
Description	This attribute indicates the total bandwidth of this SPVC connection in bits per second. If the *atmServiceCategory* of the SPVC is ***rt-vbr*** or ***nrt-vbr***, the value of this attribute is derived from the sustained cell rate (SCR) value of the SPVC. If the *atmServiceCategory* of the SPVC is ***ubr*** or ***cbr***, the value of this attribute is derived from the peak cell rate (PCR) value of the SPVC. Cell rate is converted to bits/s by multiplying by 424 bits/cell.
Mib	no_mib
Values	Long Integer
Units	bit/s
Default	No default

ATTRIBUTE Ets EAtmTrsp Spvc **availableBandwidth (abw)**

Access	Read only
Description	This attribute indicates the available bandwidth of this SPVC connection in bits per second. Available bandwidth is calculated by subtracting the total

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sum of the bandwidth of VLANs using this SPVC transport from the *totalBandwidth* value. If the value of this attribute is positive, this SPVC is under-subscribed. If the value of this attribute is ***0*** and alarm 70724104 is cleared, this SPVC is subscribed to its maximum bandwidth. If the value of this attribute is ***0*** and alarm 70724104 is set, this SPVC is over-subscribed. When the SPVC is over-subscribed, traffic loss may occur.

Mib	no_mib
Values	Long Integer
Units	bit/s
Default	No default

COMPONENT Ets EAtmTrsp Spvc EthoAtmSourceVcc (SrcVcc)

Groups	GROUP Ets EAtmTrsp Spvc SrcVcc Provisioned (Prov)
Scope	Device
Description	*Ets EAtmTrsp/x Spvc/m EthernetOverAtmSourceVcc* This component specifies the far end ATM UNI information for a single-ended configuration. This component takes precedence over the *EthSourceEvlsAtmTransport* component if both exist, forcing a single-ended configuration.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Ets EAtmTrsp Spvc SrcVcc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthOverAtmSourceVcc* component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp Spvc SrcVcc calledVpiVci (cdVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the far end ATM UNI VCC that is the called end of this EVLS ATM Transport.
Mib	no_mib

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Values	Integer Sequence (0..255; 32..65536)
Default	No default

COMPONENT Ets EAtmTrsp Spvc TrafficManagement (Tm)

Groups	GROUP Ets EAtmTrsp Spvc Tm Provisioned (Prov)
Scope	Network
Description	*Ets EAtmTrsp/x Spvc/m Tm* This component represents the traffic management parameters for the ATM SPVC transport connection.
Mib	no_mib
Common Verbs	Help List Display

GROUP Ets EAtmTrsp Spvc Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *TrafficManagement* component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp Spvc Tm atmServiceCategory (sc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the desired ATM service category for this Spvc connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	no_mib
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE Ets EAtmTrsp Spvc Tm bearerClassBbc (bcBbc)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the bearer capability. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***) and timing requirements are user defined (that is, transparent to the network).When ***x*** is set the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.
Mib	no_mib
Values	x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE Ets EAtmTrsp Spvc Tm **transferCapabilityBbc (tcBbc)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. Uni 3.0/ 3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> 0: NoIndication, NoIndication 2: NoIndication, no 5: CBR, yes 9: VBR, yes The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data. The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing. The value yes for end-to-end timing indicates that end-to-end timing is required. The value no for end-to-end timing indicates that end-to-end timing is not required.

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The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: no_mib

Values:
0
2
5
9
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE Ets EAtmTrsp Spvc Tm bestEffort

Access: Read and write

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: no_mib

Values:
indicated
notIndicated
derivedFromServiceCategory (derived)

Default: derivedFromServiceCategory

ATTRIBUTE Ets EAtmTrsp Spvc Tm txPacketWiseDiscard (txpd)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic.

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Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functionsare Early Packet Discard (EPD) and Partial Packet Discard (PPD).

EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the "goodput" of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell.

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***4pOC3MmAtm*** and ***4pOC3SmIrAtm*** cards, the packet-wise discard function includes PPD. PPD applies to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. PPD is controlled by this attribute. This attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm*** and ***16pOC3SmIrAtm*** cards, the packet-wise discard functions include PPD. PPD and applies to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Spvc txPacketWiseDiscard* operational attribute.

Mib	no_mib
Values	disabled enabled
Default	enabled

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ATTRIBUTE Ets EAtmTrsp Spvc Tm **rxPacketWiseDiscard (rxpd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD). PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted. For ***4pOC3MmAtm*** and ***4pOC3SmIrAtm*** cards, this attribute may safely be set to ***enabled*** for any connection since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected. For ***4pOC12SmIrAtm*** and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point. At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup. The receive packet-wise discard functions that are active are visible in the *Spvc rxPacketWiseDiscard* operational attribute.
Mib	no_mib
Values	disabled enabled
Default	enabled

ATTRIBUTE Ets EAtmTrsp Spvc Tm **trafficDescType (tdt)**

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Access	Read and write
Criticality	Component
Description	This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	no_mib
Values	3 8 9
Default	3

ATTRIBUTE Ets EAtmTrsp Spvc Tm trafficDescParm (tdp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five transmit traffic parameters whose mapping is defined by the traffic descriptor type. Parameters 4 and 5 are unused by the *EthernetTransportSystem*. The values of peak cell rate (PCR), sustained cell rate (SCR), and minimum cell rate (MCR) are expressed in cell/s. When the traffic descriptor type is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameter 2 is unused. When the traffic descriptor type is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging. When the traffic descriptor type is 9, parameter 1 represents the PCR; parameter 2 is unused; parameter 3 represents the MCR.
Mib	no_mib
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

COMPONENT Ets EAtmTrsp Spvc AtmConnection (AtmCon)

Groups	GROUP Ets EAtmTrsp Spvc AtmCon Operational (Oper)
Scope	Device

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Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	no_mib
Common Verbs	Help List Display

GROUP Ets EAtmTrsp Spvc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	no_mib

ATTRIBUTE Ets EAtmTrsp Spvc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	no_mib
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Ets

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Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrAtm

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Type: NTP
Language type: U.S. English

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COMPONENT FrameRelayAtmInterface (FrAtm)

Instance	Decimal (1..4294967295)
Groups	GROUP FrAtm CustomerIdentifierData (CidData) GROUP FrAtm OsiState (State) GROUP FrAtm Statistics (Stats) GROUP FrAtm IfEntryProv (IfEntry) GROUP FrAtm OperationalStatus (OperStatus) GROUP FrAtm EmissionPriorityQs GROUP FrAtm TrafficStatistics (TrafficStats)
Scope	Application
Description	*FrameRelayAtmInterface/n* This component defines an instance of the Frame Relay to ATM interworking interface. It manages the set of Frame Relay DLCI connections that are interworked with ATM connections. The component instance value is a unique positive integer within a module. Framer is created whenever the FrAtm is added. Users who need VirtualFramer should delete the Framer first, then add the VirtualFramer.
Mib	FrameRelayAtm
Subcomponents	COMPONENT FrAtm LocalManagementInterface (Lmi) COMPONENT FrAtm ConnectionAdministrator (Ca)
Opt. Subcomp.	COMPONENT FrAtm Framer COMPONENT FrAtm DataLinkConnectionIdentifier (Dlci) COMPONENT FrAtm VirtualFramer (VFramer) COMPONENT FrAtm Address (Addr) COMPONENT FrAtm Reroute
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP FrAtm CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	FrameRelayAtm
Values	Decimal (0; 1..8191)
Default	0

GROUP FrAtm OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayAtm
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrAtm operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayAtm
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrAtm usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayAtm
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrAtm availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

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The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	FrameRelayAtm
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrAtm proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: FrameRelayAtm

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE FrAtm controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FrameRelayAtm

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

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ATTRIBUTE FrAtm alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	FrameRelayAtm
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE FrAtm standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service

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but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: FrameRelayAtm

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE FrAtm unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: FrameRelayAtm

Values:
false
true

Default: false

GROUP FrAtm Statistics (Stats)

Properties: Operational

Description: FrUni/n Statistics
This group contains the statistics about the operational behavior of the service at the interface level.

Mib: FrameRelayAtm

ATTRIBUTE FrAtm lastUnknownDlci (ludlc)

Access: Read only

Description: This attribute identifies the most recent DLCI which user frames were received on for which a DLCI has not been provisioned on the port.

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Mib	FrameRelayAtm
Values	Decimal (0..1023)
Default	0

ATTRIBUTE FrAtm unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute contains a count of the number of frames received from the interface with an unknown DLCI (DLCI which is not provisioned). When the maximum is reached the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is reached the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

GROUP FrAtm IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayAtm
Values	up down testing
Default	up

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ATTRIBUTE FrAtm ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayAtm
Values	Decimal (1..65535)
Default	No default

GROUP FrAtm OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayAtm
Values	up down testing
Default	up

GROUP FrAtm EmissionPriorityQs

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the number of Frame Relay egress emission priority queues to be used on that Frame Relay Interface and the provisionable attribute to determine whether emission queue size is doubled.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm numberOfEmissionQs

Access	Read and write
Criticality	Process

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Description	This attribute specifies the number of egress emission priority queues that will be used for that Frame Relay interface. For V.35, V.11, HSSI, E1, DS1, E3, DS3 or 8pDS1 the possible values are: ***2*** (in which case they are hardware queues), or ***4*** (in which case they are software queues). For DS1C, E1C or DS3C the possible values are ***2, 4*** (in all cases they are software queues). For 32 port Msa cards the possible values are ***2, 4*** (in all cases they are hardware queues). For 4pDS3Ch, 1pSTM1ChSmIr PQC6v2 (also known as PQC2) the possible values are ***2, 4*** (in all cases they are hardware queues). For 4pDS3Ch PQC12, setting this attribute has no effect on the number of egress emission priority queues, four hardware queues are always used.
Mib	FrameRelayAtm
Values	Decimal (2; 4)
Default	2

ATTRIBUTE FrAtm doubleEmissionQSize (deqs)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the emission queue's size is doubled for the frame relay interface and it is only supported on *frUni*. When *doubleEmissionQSize* is set to ***yes***, the default frame relay interface emission queue size is doubled. This will reduce packets loss, but latency will be increased as the queue length grows. When the attribute is set to ***no***, the default emission queues size will be used. When frame relay interface is linked to a virtual framer, the *doubleEmissionQSize* must be set to ***no***, or a semantic check error will occur. For V11, E1 and E1C cards, the possible values of the *doubleEmissionQSize* attribute are ***yes*** and ***no***. For other cards, *doubleEmissionQSize* must always be set to ***no***, or a semantic check error will occur.
Mib	FrameRelayAtm
Values	no yes

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Default	no

GROUP FrAtm TrafficStatistics (TrafficStats)

Properties	Operational
Description	This operational group provides the traffic statistics of the service at the interface level. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm frmToIfByQueue

Access	Read only
Description	This attribute counts the frames transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

ATTRIBUTE FrAtm octetToIfByQueue

Access	Read only
Description	This attribute counts the octets transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

COMPONENT FrAtm Framer

Groups	GROUP FrAtm Framer Provisioned (Prov) GROUP FrAtm Framer LinkOptions (Link)

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GROUP FrAtm Framer OsiState (State)
GROUP FrAtm Framer Statistics (Stats)
GROUP FrAtm Framer LinkUtilization (Util)

COLLECTED STATS FrameRelayAtmInterface Framer

Scope: Application

Description:

FrUni/n Framer
FrNni/n Framer
FrAtm/n Framer
This component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib: FrameRelayAtm

Common Verbs:
Help
List
Display
Add
DELete

GROUP FrAtm Framer Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib: FrameRelayAtm

ATTRIBUTE FrAtm Framer interfaceName

Access: Read and write

Criticality: Process

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Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayAtm
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrAtm Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Framer dataInversion

Access	Read and write
Description	This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed. This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density. Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted. This attribute may only take its default value for non-MSA cards.
Mib	FrameRelayAtm
Values	off on
Default	off

ATTRIBUTE FrAtm Framer frameCrcType

Access	Read and write
Description	This attribute defines the type of CRC used.

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The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness.
NoCrc means that CRC is not used.

This attribute may take only its default value for non-MSA cards.

Mib: FrameRelayAtm

Values:
crc16
crc32
noCrc

Default: crc16

ATTRIBUTE FrAtm Framer flagsBetweenFrames

Access: Read and write

Description:

This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.

Mib: FrameRelayAtm

Values: Decimal (1..16)

Default: 1

GROUP FrAtm Framer OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: FrameRelayAtm

ATTRIBUTE FrAtm Framer adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	FrameRelayAtm
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrAtm Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayAtm
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrAtm Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayAtm
Values	idle active (activ) busy

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Default	idle

GROUP FrAtm Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer nonOctetErrors

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.

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Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer overruns

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer underruns

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer largeFrmErrors

Access	Read only
Description	This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer frmModeErrors

Access	Read only
Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.

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Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

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GROUP FrAtm Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayAtm
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE FrAtm Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayAtm
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS FrameRelayAtmInterface Framer

Description	The statistics record generated by the FrameRelayAtmInterface Framer component.

ATTRIBUTE FrAtm Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

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Values Long Integer

ATTRIBUTE FrAtm Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrAtm Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrAtm Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrAtm Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT FrAtm LocalManagementInterface (Lmi)

Groups
GROUP FrAtm Lmi ProtocolParameters (Parms)
GROUP FrAtm Lmi OsiState (State)
GROUP FrAtm Lmi ProtocolStatusInfo (Psi)
GROUP FrAtm Lmi Statistics (Stats)
GROUP FrAtm Lmi UspProtocolParameters (UspParms)

Scope Application

Description
FrUni/n LocalManagementInterface
FrNni/n LocalManagementInterface
FrAtm/n LocalManagementInterface
This component defines the parameters for implementing the Local Management Interface protocol.

Mib FrameRelayAtm

Common Verbs
Help
List
Display

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GROUP FrAtm Lmi ProtocolParameters (Parms)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *LMI* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Lmi procedures (proc)

Access	Read and write
Criticality	Process
Description	This attribute selects the procedures to be used for the Local Management Interface. The following procedures are supported: ***none:*** no Local Management Interface procedures are running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures. The remaining attributes of this group are ignored. For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrUni* is set to ***none***, only ***none*** is permitted for the *procedures* attribute of this *Lmi* component. ***vendorForum***: Local Management Interface procedures from the Vendor Forum specification are supported on this interface. *DLCI 1023* is used for the LMI protocol. This value cannot be used if the side attribute is both. ***ansi***: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol. ***itu***: Local Management Interface procedures from the ITU-T specification are supported. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***. ***autoConfigure***: The interface determines automatically which Local Management Interface procedures to use. This value cannot be used if the side attribute is user. The procedures currently in use can be seen in the operational attribute *opProcedures*.
Mib	FrameRelayAtm
Values	none vendorForum ansi itu (ccitt) autoConfigure
Default	autoConfigure

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ATTRIBUTE FrAtm Lmi asyncStatusReport (asr)

Access	Read and write
Description	This attribute selects the use of asynchronous PVC status report procedures as specified in ANSI, CCITT, and Vendor Forum. This attribute can be set to ***on*** or ***off***. If *procedure*s is set to ***none***, this attribute is ignored.
Mib	FrameRelayAtm
Values	off on
Default	off

ATTRIBUTE FrAtm Lmi errorEventThreshold (n392)

Access	Read and write
Description	An event is defined as follows: (1) receipt of a STATUS ENQUIRY message; or (2) expiration of timer T392. An error event is (1) nonreceipt of STATUS ENQUIRY in T392 seconds; (2) invalid contents of a LMI message; (3) invalid receive sequence number. This attribute specifies the number of error events which, if they occur within *eventCount* events, cause a protocol error condition. The condition is cleared after *eventCount* sequential correct events occur. This attribute corresponds to the nN2 parameter described in the Vendor Forum Specification. It must be less than or equal to *eventCount*.
Mib	FrameRelayAtm
Values	Decimal (1..10)
Default	3

ATTRIBUTE FrAtm Lmi eventCount (n393)

Access	Read and write
Description	This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed. This attribute corresponds to the nN3 parameter described in the Vendor Forum Specification. It must be greater than or equal to *errorEventThreshold*.
Mib	FrameRelayAtm
Values	Decimal (1..10)

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Default	4

ATTRIBUTE FrAtm Lmi checkPointTimer (t392)

Access	Read and write
Description	This attribute selects the time (in seconds) within which a STATUS ENQUIRY message is expected. This attribute corresponds to the nT2 parameter described in the Vendor Forum Specification. It must be less than *messageCountTimer*.
Mib	FrameRelayAtm
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	15

ATTRIBUTE FrAtm Lmi messageCountTimer (nt3)

Access	Read and write
Description	This attribute selects the time (in seconds) within which at most five (this is a fixed value and corresponds to maximum message count in VendorForum) STATUS ENQUIRY messages are expected. This attribute applies only when the *lmiProcedures* is set to ***vendorForum***. *messageCountTimer* must always be greater than *checkPointTimer*.
Mib	FrameRelayAtm
Values	Decimal (5; 10; 15; 20; 25; 30)
Units	seconds
Default	20

ATTRIBUTE FrAtm Lmi ignoreActiveBit (inab)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the Frame Relay LMI Active Bit (A-bit) has a bearing on the transfer of user data across this Frame Relay interface for both directions of traffic flow. When this attribute is set to ***yes***, the A-bit status of a user DLCI connection does not affect data transfer. When this attribute is set to ***no,*** data received from the local interface will be discarded if an A-bit =0 condition exists towards the local user. Data

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	being sent to the local interface is discarded if an A-bit = 0 condition exists towards the subnet.
Mib	FrameRelayAtm
Values	no yes
Default	no

ATTRIBUTE FrAtm Lmi side

Access	Read and write
Criticality	Process
Description	This attribute can be set to ***user, network,*** or ***both***. When this attribute is set to ***user***, USP LMI procedures are running. When this attribute is set to ***network***, NSP LMI procedures are running. When this attribute is set to ***both***, USPNSP LMI procedures are running. When the value is ***both***, the *procedures* attribute must not be set to ***vendorForum***. Setting the value to ***user*** when the *procedures* attribute is set to ***autoConfigure*** is disallowed semantically.
Mib	FrameRelayAtm
Values	network user both
Default	network

ATTRIBUTE FrAtm Lmi pvcConfigParmsInFsr (pvcConfig)

Access	Read and write
Description	When this attribute is set to ***yes***, additional Q.933 information elements are included in the LMI Full Status message to facilitate CPE PVC parameter configuring. When set to ***yes***, the *Check Prov* command fails if the *Lmi side* is not set to ***network***. When set to ***yes***, *Check Prov* fails if the number of DLCIs on the *FrUni* is greater than 300. Vendor Forum LMI Extensions will only be enabled if this attribute is set to ***vendorForumExtensions*** and both of the following conditions are met: 1. The value of the *Lmi procedures* attribute is ***vendorForum*** 2. The value of the *Lmi side* attribute is ***network***

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If either of these conditions are not met, Vendor Forum Extensions will not be enabled, and this attribute is ignored.

When Vendor Forum Extensions is enable the value of the *Dlci cirPresent* attribute will be included as the PVC Bandwidth in the LMI PVC Status IE.

If Vendor Forum Extensions is enable and the value of the *asyncStatusReport* is ***yes***, when a DLCI is deleted the Delete Bit will be set to 1 in the LMI PVC Status IE in the asyncronous status report.

If the service is not a *FrUni* this attribute is ignored.

Mib: FrameRelayAtm

Values:
no
yes
vendorForumExtensions

Default: no

ATTRIBUTE FrAtm Lmi pvcAlarmsReporting (pvcAlarms)

Access: Read and write

Description: This attribute specifies if alarms are generated when PVCs change state in the local network, an adjacent network or in remote networks.

When the value is ***internal***, PVCs operational status change in the local network are reported in alarms. When the value is ***external***, PVCs operational status change in an adjacent or remote networks are reported in alarms. When the value is ***both***, PVCs status change in local and adjacent or remote networks are reported in alarms. When the value is ***none***, no alarms are issued for PVCs status change.

There are four kinds of alarms controlled by the attribute.
Alarm 7007 200x reports PVCs that have lost connectivity in an adjacent or remote networks.
Alarm 7007 201x reports PVCs that have reached the data transfer state in an adjacent or remote networks.
Alarm 7007 202x reports PVCs that have lost connectivity in the local network.
Alarm 7007 203x reports PVCs that have reached the data transfer state in the local network.

Each alarm can report a maximum of 112 DLCIs. Up to nine alarms of the same kind may be required to report all PVCs that have changed state if all these PVCs have experienced the same condition at the *FrUni* interface.

Mib: FrameRelayAtm

Values:
external
internal

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	both none
Default	external

GROUP FrAtm Lmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Lmi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayAtm
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrAtm Lmi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	FrameRelayAtm
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrAtm Lmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayAtm
Values	idle active (activ) busy
Default	idle

GROUP FrAtm Lmi ProtocolStatusInfo (Psi)

Properties	Operational
Description	This group provides the protocol status of the Local Management Interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Lmi protocolStatus

Access	Read only
Description	This attribute indicates whether the LMI is in an error condition or whether the LMI procedures are behaving normally. When operating with no LMI protocol, this attribute is always set to ***normalCondition***. When operating with LMI procedures, this attribute is set to ***errorCondition*** after n392 of the last n393 events are in error. The consequence of an ***errorCondition*** is that all DLCIs on this interface will become inactive in both directions. The ***errorCondition*** is cleared and a ***normalCondition*** is indicated when

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a sufficient number of events have occurred without error. In ANSI, this occurs when n393 consecutive good events take place.

If the *procedures* attribute is set to ***autoConfigure***, this attribute is set to ***configuring*** while adaptive LMI determines which LMI procedures are running on the link. A single LMI error event during auto configuration causes the attribute value to change to ***errorCondition***. If during ***configuring*** no LMI message is received, an LMI ***errorCondition*** is raised after n392 x t392 seconds.

Mib: FrameRelayAtm

Values:
errorCondition
normalCondition
configuring

Default: No default

ATTRIBUTE FrAtm Lmi opProcedures (opproc)

Access: Read only

Criticality: Process

Description

The *opProcedures* attribute indicates the procedures being used for the Local Management Interface. This attribute should be ignored if *protocolStatus* is not ***normalCondition***. The following procedures are supported:

none: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures.

vendorForum: Local Management Interface procedures from the Vendor Forum specification are running on this interface. *DLCI 1023* is used for the LMI protocol.

ansi: Local Management Interface procedures from the ANSI specification are running. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are running. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

unknown: Local Management Interface procedures have yet to be determined by Adaptive LMI.

Mib: FrameRelayAtm

Values:
none
vendorForum
ansi
itu
unknown

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Default	No default

GROUP FrAtm Lmi Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Local Management Interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Lmi keepAliveStatusToIf (kasti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive status messages sent to the external user device in response to a status enquiry for keep alive status. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi fullStatusToIf (fsti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi keepAliveStatusEnqFromIf (kafi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid keep alive status enquiry messages received from the external user device. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrAtm Lmi fullStatusEnqFromIf (fsfi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid full status enquiry messages received from the external user device. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi networkSideEventHistory (nsh)

Access	Read only
Description	This attribute displays the Local Management Interface network side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The leftmost event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status enquiry message. An error event is one of three possibilities, either a nT2/T392 timer expiry, receipt of a status enquiry message with bad sequence numbers, or when *lmiProcedures* is provisioned to vendorForum and we receive more than nN4 status enquiry messages within the provisioned *messageCountTimer* (nT3).
Mib	FrameRelayAtm
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE FrAtm Lmi protocolErrors (proto)

Access	Read only
Description	This attribute counts the number of Local Management Interface protocol errors. It is the sum of the sequence (*sequenceErrors*), timeout (*pollingVerifTimeouts*) and too many status enquiry messages received within the *messageCountTimer* (nT3) errors. The too many status enquiries error only applies when *lmiProcedures* is set to ***vendorForum***. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrAtm Lmi unexpectedIes (uie)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an Information Element identifier that is unknown or unexpected. An unexpected Information Element is not a protocol error. When the maximum count is reached, this counter wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi sequenceErrors (seq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status Enquiry message sequence errors. A sequence error is receipt of a Status Enquiry message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi unexpectedReports (ur)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an unknown or unexpected report type. An unexpected report type is not a protocol error. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi pollingVerifTimeouts (tmo)

Access	Read only
Description	This attribute counts the number of *checkPointTImer* (t392) timer expiries occurring on the Local Management Interface. When the maximum count is reached the counter wraps to zero.

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Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi keepAliveEnqToIf (kaeti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive enquiry status messages sent to the external user device for keep alive status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi fullStatusEnqToIf (fseti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi userSideEventHistory (ush)

Access	Read only
Description	This attribute displays the Local Management Interface user side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The left most event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status message. An error event is either a nT1/T391 timer expiry or receipt of a status message with bad sequence numbers.
Mib	FrameRelayAtm
Values	String (1..10, ASCII)
Default	No default

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ATTRIBUTE FrAtm Lmi statusSequenceErrors (stseq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status message sequence errors. A sequence error is receipt of a Status message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi noStatusReportCount (nsrc)

Access	Read only
Description	This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented in two cases: i) after a status enquiry is sent out and T391 timer expires without having a status report received. ii) an invalid status report is received. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

GROUP FrAtm Lmi UspProtocolParameters (UspParms)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Local Management Interface user side procedure.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Lmi fullStatusPollingCycles (n391)

Access	Read and write
Description	This attribute specifies how frequently the Frame Relay UNI service should initiate a Status Enquiry for a full PVC status report. A polling cycle is a Status Enquiry and Status Report exchange. This attribute is used only if the *side* attribute is either ***user*** or ***both***.

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Mib	FrameRelayAtm
Values	Decimal (1..255)
Default	6

ATTRIBUTE FrAtm Lmi linkVerificationTimer (t391)

Access	Read and write
Description	This attribute specifies how frequently the Frame Relay UNI service should initiate a Status Enquiry for link integrity verification. It must be less than *checkPointTimer (t392)*. When the Lmi *side* is ***network***, this attribute is ignored.
Mib	FrameRelayAtm
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	10

COMPONENT FrAtm DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007)
Groups	GROUP FrAtm Dlci OsiState (State) GROUP FrAtm Dlci ABitStatus (ABit) GROUP FrAtm Dlci ServiceParametersOp (SpOp) GROUP FrAtm Dlci Statistics (Stats) GROUP FrAtm Dlci CallData (CalId) GROUP FrAtm Dlci IntervalData (Int)
Scope	Application
Description	*FrAtm/n DataLinkConnectionIdentifier/n* This component represents a data link connection. The instance value defines the DLCI value for this connection. For example, *Dlci*/30 defines a logical connection with a DLCI of 30. For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrAtm* is set to ***none***, no *Dlci* component is allowed under this *FrAtm*. The *Dlci* component is a subcomponent of *FrAtm*, and is responsible for

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	the Frame Relay U-plane (User-plane) protocol for the specified data link connection.
Mib	FrameRelayAtm
Subcomponents	COMPONENT FrAtm Dlci ServiceParameters (Sp)
Opt. Subcomp.	COMPONENT FrAtm Dlci ServiceInterworkingFunction (Siwf) COMPONENT FrAtm Dlci NetworkInterworkingFunction (Niwf) COMPONENT FrAtm Dlci EgressServiceParameters (EgSp)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrAtm Dlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayAtm

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE FrAtm Dlci operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayAtm

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrAtm Dlci usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayAtm

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Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrAtm Dlci availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

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The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	FrameRelayAtm
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrAtm Dlci proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	FrameRelayAtm
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrAtm Dlci controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	FrameRelayAtm
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrAtm Dlci alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	FrameRelayAtm
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE FrAtm Dlci standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	FrameRelayAtm
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrAtm Dlci unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayAtm
Values	false true
Default	false

GROUP FrAtm Dlci ABitStatus (ABit)

Properties	Operational
Description	This group contains the A-Bit status information for this Data Link Connection Identifier.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci aBitStatusToIf (abti)

Access	Read only
Description	This attribute contains the most recent A-bit status sent to the interface. The A-bit status is part of the LMI protocol, and indicates the remote end's willingness to accept data from the local interface. When an inactive setting is sent out, the Frame Relay service will discard any data offered from the local interface. When an active setting is sent out, the Frame Relay service tries to process all data offered from the local interface.
Mib	FrameRelayAtm
Values	inactive active notApplicable
Default	No default

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ATTRIBUTE FrAtm Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute provides the reason (if any) for an inactive status to be sent to the interface. This reason is ***notApplicable*** for an active status.
Mib	FrameRelayAtm
Values	notApplicable remoteUserSignaled localLmiError remoteLmiError localLinkDown remoteLinkDown pvcDown
Default	No default

ATTRIBUTE FrAtm Dlci aBitStatusFromIf (abfi)

Access	Read only
Description	This attribute indicates the most recent A-Bit status received from the interface.
Mib	FrameRelayAtm
Values	inactive active notApplicable
Default	No default

ATTRIBUTE FrAtm Dlci aBitReasonFromIf (abrfi)

Access	Read only
Description	This attribute provides the reason (if any) for an inactive status to be sent to the subnet. The value is ***notApplicable*** when the *aBitStatusFromIf* attribute is ***active***. The value is ***remoteUserSignaled*** if the remote interface originating the A-Bit status detects that the virtual circuit is down at the remote network through the LMI protocol. The remote interface must be running network site LMI protocol for this A-Bit status reason to be sent. The value is ***localLmiError*** if the LMI protocol is down at this interface. The value is ***localLinkDown*** if the physical link is disabled at this interface. The value is ***pvcDown*** if no A-Bit status has been sent to this interface from the local network. The value is ***missingFromLmiReport*** if the remote interface did not provide a reason along with the inactive A-Bit status.
Mib	FrameRelayAtm

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Values	notApplicable remoteUserSignaled localLmiError localLinkDown pvcDown missingFromLmiReport
Default	No default

GROUP FrAtm Dlci ServiceParametersOp (SpOp)

Properties	Operational
Description	This group contains service parameters for the *Dlci* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci maximumFrameSize (n203)

Access	Read only
Description	This attribute indicates the maximum number of octets which can be included in the information field. This definition does not include the FrameRelay header and CRC octets. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.
Mib	FrameRelayAtm
Values	Decimal (1..8187)
Units	octets
Default	No default

ATTRIBUTE FrAtm Dlci rateEnforcement (re)

Access	Read only
Description	This attribute indicates whether rate enforcement is in effect for this user Data Link Connection on this *FrAtm* interface. When rate enforcement is on, Committed Information Rate (CIR) and DE=1 traffic will be measured and enforced. When rate enforcement is off, all frames from the user will be accepted and no modifications to the frame with respect to the DE bit will be made.
Mib	FrameRelayAtm
Values	off on
Default	No default

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ATTRIBUTE FrAtm Dlci committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (CIR) in bits per second (bit/s) and represents the rate at which the network agrees to transfer information under normal conditions when *rateEnforcement* is ***on***. This rate is measured over a measurement interval (t). Changing the value of this attribute will result in a change to the required bandwidth of the ATM connection, and a service impact to this Dlci. This attribute is not applicable when *rateEnforcement* is ***off***.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE FrAtm Dlci committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (Bc) in bits and represents the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*) when rateEnforcement is ***on***. Data marked with DE=1 is not accounted for in committed burst size. Changing the value of this attribute will result in a change to the required bandwidth of the ATM connection, and a service impact to this Dlci. This attribute is not applicable when *rateEnforcement* is ***off***.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE FrAtm Dlci excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (Be) in bits and represents the amount of uncommitted data that the network attempts to deliver over measurement interval (t) when *rateEnforcement* is ***on***. Data marked DE=1 by the user or by the network is accounted for here. Changing the value of this attribute will result in a change to the required bandwidth of the ATM connection, and a service impact to this Dlci.

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	This attribute is not applicable ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE FrAtm Dlci measurementInterval (t)

Access	Read only
Description	This attribute indicates the time interval over which rates and burst sizes are measured. Changing the value of this attribute will result in a change to the required bandwidth of the ATM connection, and a service impact to this Dlci. This attribute is not applicable when *rateEnforcement* is ***off***.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE FrAtm Dlci emissionPriorityToIf (epToIf)

Access	Read only
Description	This attribute indicates the emission priority of frames sent to the interface. If the value of *FrAtm/n numberOfEmissionQs* is ***2***, set the value of this attribute to either ***0*** or ***1***; if the value of *FrAtm/n numberOfEmissionQs* is ***4***, set the value of this attribute to one of ***0, 1, 2, 3***.
Mib	FrameRelayAtm
Values	Decimal (0; 1; 2; 3)
Default	No default

ATTRIBUTE FrAtm Dlci dlciType (dlcty)

Access	Read only
Description	This attribute indicates the type of DLCI. A value of ***serviceInterworking*** indicates that a *FrAtm/n Dlci/n Siwf* component is present. A value of ***networkInterworking*** indicates that a *FrAtm/n Dlci/n Niwf* component is present.
Mib	FrameRelayAtm

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Values	serviceInterworking networkInterworking
Default	No default

ATTRIBUTE FrAtm Dlci troubled (trb)

Access	Read only
Description	This attribute indicates whether or not the connection is in a troubled state. Connections may become troubled for the following reasons; if CAC failed to admit the call, or if one of the attributes *aBitStatusToIf*, *aBitStatusFromIf* goes inactive; otherwise it is set to no.
Mib	FrameRelayAtm
Values	no yes
Default	no

ATTRIBUTE FrAtm Dlci troubledReason (trbrc)

Access	Read only
Description	This attribute provides the reason (if any) for a troubled connection. A value of ***notApplicable*** indicates no current failures; either Connection Admission Control (CAC) is off, or call was admitted. A value of ***notAdmitted*** indicates the CAC algorithm fails to admit this connection. Check if there is a sufficient bandwidth allocation. A value of ***aBitInactive*** indicates that either the aBitStatusToIf or aBitStatusFromIf is inactive.
Mib	FrameRelayAtm
Values	notApplicable notAdmitted aBitInactive
Default	notApplicable

GROUP FrAtm Dlci Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier.
Mib	FrameRelayAtm

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ATTRIBUTE FrAtm Dlci frmToIf (fti)

Access	Read only
Description	This attribute counts the number of frames sent to the interface. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the number of frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the number of frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci deFrmToIf (deti)

Access	Read only
Description	This attribute counts the number of frames sent to the interface with the Discard Eligibility (DE) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discCongestedToIf (discardcti)

Access	Read only

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Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the interface. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discDeCongestedToIf (discarddecti)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion in the direction toward the interface. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci frmFromIf (ffi)

Access	Read only
Description	This attribute counts the number of frames received from the interface. Frames that are discarded due to error or excess are not counted. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the number of frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci becnFrmFromIf (becnfi)

Access	Read only

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Description	This attribute counts the number of frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci efciFrmFromNetwork (efcifnwk)

Access	Read only
Description	This attribute counts the number of frames received from the interworking function with the Explicit Forward Congestion Indication (EFCI) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the number of frames received from the interface with the Discard Eligibility (DE) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci excessFrmFromIf (excess)

Access	Read only
Description	This attribute counts the number of frames received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discExcessFromIf (discardefi)

Access	Read only

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Description	This attribute counts the number of frames which were discarded due to rate enforcement. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discFrameAbit (discfab)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay Service, due to an inactive PVC status, in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discCongestedFromIf (discardcfi)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discDeCongestedFromIf (discarddecfi)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set due to local congestion in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci errorShortFrmFromIf (shortfi)

Access	Read only

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Description	This attribute counts the number of frames received with 0 octets in the information field. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the number of frames received with number of octets in the information field greater than the subscribed maximum. When the maximum count is reached, the count wraps to zero. The hardware ignores frame lengths greater than the hardware receive buffer, and therefore does not includes them in this count.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci becnFrmSetByService (becnset)

Access	Read only
Description	This attribute counts the number of frames with BECN set by the Frame Relay service. It is incremented when the Frame Relay service sets BECN on a frame upon detecting local congestion. This count is incremented regardless of whether the frame already bears a set BECN bit since its use is to determine the place of congestion. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci bytesToIf (bti)

Access	Read only
Description	This attribute counts the number of bytes sent out the interface. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE FrAtm Dlci deBytesToIf (debti)

Access	Read only
Description	This attribute counts the number of bytes sent to the interface with the Discard Eligibility (DE) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discCongestedToIfBytes (discardctib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the link. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discDeCongestedToIfBytes (discarddectib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the link. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the number of bytes received from the interface. Bytes that are discarded by the interface due to framing errors (such as CRC errors for example) are not counted. However bytes that are discarded by the application due to rate enforcement or congestion are counted. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE FrAtm Dlci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the number of bytes received from the interface with the Discard Eligibility (DE) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci excessBytesFromIf (excessb)

Access	Read only
Description	This attribute counts the number of bytes received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discExcessFromIfBytes (discardebi)

Access	Read only
Description	This attribute counts the number of bytes which were discarded due to rate enforcement. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discByteAbit (discbab)

Access	Read only
Description	This attribute counts the bytes number of which were discarded due to the A-bit being turned off. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE FrAtm Dlci discCongestedFromIfBytes (discardcbib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discDeCongestedFromIfBytes (discarddecbib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci errorShortBytesFromIf (shortbi)

Access	Read only
Description	This attribute counts the number of bytes received with 0 octets in the information field. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci errorLongBytesFromIf (longbi)

Access	Read only
Description	This attribute counts the number of bytes received when the number of octets in the information field is greater than the subscribed maximum. The hardware ignores bytes lengths greater than the hardware receive buffer and therefore does not include them in this count. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)

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Default	No default

GROUP FrAtm Dlci CallData (CallId)

Properties	Operational
Description	This group contains the operational values for the *FrAtm Dlci* call data. If the *accountingEnabled* attribute is ***no***, then this group except for *accountingEnabled* is not displayed.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci accountingEnabled

Access	Read only
Description	This attribute indicates whether accounting is enabled. To enable accounting, the *FrAtm Ca accountCollection* attribute must be non-empty and *FrAtm Dlci Sp accounting* attribute must be ***on***.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci accountingEnd

Access	Read only
Description	This attribute indicates whether this DLCI represents the called or calling end of the connection. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE FrAtm Dlci correlationTag

Access	Read only
Description	This attribute indicates the unique string which identifies this connection. The value of this operational attribute can be provisioned in the correlationTag attribute of either the Siwf Npvc, Siwf Spvc, or Niwf Spvc subcomponents. For the Siwf Spvc and Niwf Spvc cases, when the provisionable correlationTag is an empty string, then this attribute receives the value of a system- generated correlationTag. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. If the accountingEnabled attribute is no, then this attribute is not displayed.
Mib	FrameRelayAtm

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Values	String (0..32, ASCII)
Default	""

GROUP FrAtm Dlci IntervalData (Int)

Properties	Operational
Description	This group contains the operational statistics for the *FrAtm Dlci* interval data.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci startTime

Access	Read only
Description	This attribute indicates the start time of this interval. A new interval is started each time an accounting record is generated and call at a setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrAtm Dlci totalIngressBytes (tib)

Access	Read only
Description	This attribute counts the total payload bytes in received from the link since the start of the interval. To calculate total valid payload bytes received from link, subtract *discardedBytes* from this attribute. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci totalEgressBytes

Access	Read only
Description	This attribute counts the total payload bytes sent to the link since the start of the interval. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm

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Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci eirIngressBytes

Access	Read only
Description	This attribute counts the total valid payload bytes in frames with the Discard Eligibility (DE) bit set to 1 received from the link since the start of the interval. Subtract this attribute and *discardedBytes* from *totalIngressBytes* to calculate total valid payload bytes in frames received from the link, with the DE bit set to 0. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci eirEgressBytes

Access	Read only
Description	This attribute counts the total valid payload bytes in frames with the Discard Eligibility (DE) bit set sent to the link since the start of the interval. Subtract the value of this attribute from *totalEgressBytes* to calculate total valid payload bytes in frames, with DE set to 0, sent to the link. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci discardedBytes

Access	Read only
Description	This attribute counts the total payload bytes in invalid frames received from the link and discarded at the DLCI since the start of the interval. This count is a sum of octets in frames discarded due to: frames too long or too short; A-Bit off; or to rate enforcement. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.

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Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci totalIngressFrames

Access	Read only
Description	This attribute counts the total number of frames received from the link since the start of the interval. To calculate the total valid number of frames received from the link, subtract *discardedFrames* from this attribute. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Dlci totalEgressFrames

Access	Read only
Description	This attribute counts the total number of frames sent to the link since the start of the interval. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Dlci eirIngressFrames

Access	Read only
Description	This attribute counts the number of valid frames with the Discard Eligibility (DE) bit set to 1 received from the link since the start of the interval. Subtract this attribute and *discardedFrames* from *totalIngressFrames* to calculate total valid frames received from the link, with the DE bit set to 0. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrAtm Dlci eirEgressFrames

Access	Read only
Description	This attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the link since the start of the interval. Subtract the value of this attribute from *totalEgressFrames* to calculate total frames, with DE set to 0, sent to the link.The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Dlci discardedFrames

Access	Read only
Description	This attribute counts the number of invalid frames received from the link and discarded at the DLCI. The count is reset to zero when an accounting record is generated or at call setup. The count is a sum of frames discarded due to: frames too long or too short; A-Bit is off; or rate enforcement. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Dlci elapsedDifference

Access	Read only
Description	This attribute indicates the elapsed time representing the of this interval data. It is the elapsed time in 0.1 second increments since the start of the interval. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrAtm Dlci ServiceParameters (Sp)

Groups	GROUP FrAtm Dlci Sp Provisioned (Prov)
Scope	Application

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Description	*FrAtm/n Dlci/n ServiceParameters* This component is a subcomponent of *Dlci*. It contains the provisionable attributes for the parent *Dlci* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Dlci Sp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Data Link Connection Identifier. These attributes reflect the service parameters specific to this instance of DLCI. The congestion control attributes in this group are defined in T1.606 Addendum 1.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Sp maximumFrameSize (n203)

Access	Read and write
Description	This attribute specifies the maximum number of octets which may be included in the information field. The Frame Relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.
Mib	FrameRelayAtm
Values	Decimal (1..8187)
Units	octets
Default	2100

ATTRIBUTE FrAtm Dlci Sp rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether rate enforcement is in effect for this user data link connection. When *rateEnforcement* is *on,* the *CIR* and *De=1* traffic will be measured and enforced. When *rateEnforcement* is *off*, all frames from the user are accepted and no modifications to the frame with respect to the *De* bit will be made.
Mib	FrameRelayAtm

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Values	off on
Default	on

ATTRIBUTE FrAtm Dlci Sp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR). It represents the rate at which the network agrees to transfer information under normal conditions when rate enforcement is in effect. When rate enforcement is not in effect, this attribute is ignored. Determination of the actual CIR is based on *committedInformationRate*, *committedBurstSize* and a measurement interval. The measurement interval is determined internally when *committedInformationRate* has a non-zero value. Otherwise, it is based on *measurementInterval* which must be explicitly provisioned. Note: The *committedBurstSize* must have a value of 0 when rate enforcement is in effect and *committedInformationRate* has a value of 0.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrAtm Dlci Sp committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size (Bc). It represents the amount of data that a network agrees to transfer under normal conditions over a measurement interval when rate enforcement is in effect. Data marked DE=1 is not accounted for in the committed burst size. When rate enforcement is not in effect, this attribute is ignored. Note: The *committedInformationRate* must have a value of 0 when rate enforcement is in effect and *committedBurstSize* has a value of 0.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrAtm Dlci Sp excessBurstSize (be)

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Access	Read and write
Description	This attribute specifies the excess burst size (Be). It represents the amount of uncommitted data that the network will attempt to deliver over a measurement interval when rate enforcement is in effect. Data marked DE=1 by the user or by the network is accounted for here. *committedInformationRate*, *committedBurstSize*, and *excessBurstSize* cannot all be zero when rate enforcement is in effect.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrAtm Dlci Sp measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval over which rates and burst sizes are measured when rate enforcement is in effect. When rate enforcement is in effect and both *committedInformationRate* and *committedBurstSize* have values of zero, this attribute must have a non-zero value. When rate enforcement is not in effect or when *committedInformationRate* and *committedBurstSize* have non-zero values, this attribute is ignored. When *committedInformationRate* and *committedBurstSize* have non-zero values, the time interval is internally calculated. In this situation, *measurementInterval* is ignored, and it does not represent the time interval.
Mib	FrameRelayAtm
Values	Decimal (0..25500)
Units	msec
Default	0

ATTRIBUTE FrAtm Dlci Sp accounting (ac)

Access	Read and write
Description	This attribute allows the operator to control accounting for this DLCI. To enable accounting data collection and record generation, the value of this attribute must be ***on*** and at least one of the *accountCollection* reasons in the *FrAtm Ca* component must be set.
Mib	FrameRelayAtm

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Values	off on
Default	off

COMPONENT FrAtm Dlci ServiceInterworkingFunction (Siwf)

Groups	GROUP FrAtm Dlci Siwf ConnectionOp (ConnOp) GROUP FrAtm Dlci Siwf ServiceDescriptorsOp (SdOp) GROUP FrAtm Dlci Siwf FrAtmDlcSiwfSoftPvcOp (SiwfSpvcOp) GROUP FrAtm Dlci Siwf Statistics (Stats)
Scope	Application
Description	*FrAtm/n Dlci/n ServiceInterworkingFunction* The *Siwf* component provides the service interworking function capability between a Frame Relay data link connection and an ATM connection.
Mib	FrameRelayAtm
Opt. Subcomp.	COMPONENT FrAtm Dlci Siwf ServiceDescriptor (Sd) COMPONENT FrAtm Dlci Siwf NailedUpPvc (NPvc) COMPONENT FrAtm Dlci Siwf SoftPvc (SPvc) COMPONENT FrAtm Dlci Siwf QualityOfService (QoS)
Dyn. Subcomp.	COMPONENT FrAtm Dlci Siwf AtmConnection (AtmCon) COMPONENT FrAtm Dlci Siwf RerouteInfo (RerInfo)
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf ConnectionOp (ConnOp)

Properties	Operational
Description	This group contains operational attributes for the ATM connection.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf discardPriority (dp)

Access	Read only
Description	This attribute indicates the discard priority of frames sent to and received from the ATM connection. When *discardPriority* is ***dp3*** the frames belonging to this connection will be discarded first when the *FrAtm/n Dlci/n Siwf* and the ATM End-Point experience congestion. When *discardPriority* is ***dp2*** the frames belonging to this connection will be discarded after all the ***dp3*** priority frames are discarded when the *FrAtm/n*

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Dlci/n Siwf and the ATM End-Point experience congestion.

When *discardPriority* is ***dp1*** the frames belonging to this connection will be discarded after all the ***dp2*** and ***dp3*** priority frames are discarded when the *FrAtm/n Dlci/n Siwf* and the ATM End-Point experience congestion.

Mib — FrameRelayAtm

Values
dp1
dp2
dp3

Default — No default

ATTRIBUTE FrAtm Dlci Siwf atmServiceCategory (sc)

Access — Read only

Description — This attribute indicates the ATM service category that is used for this connection. This attribute is only displayed for SPVCs.

Mib — FrameRelayAtm

Values
ubr
cbr
rtVbr
nrtVbr
notApplicable

Default — No default

ATTRIBUTE FrAtm Dlci Siwf trafficParmConvPolicy (tpcp)

Access — Read only

Description — This attribute indicates the traffic parameter conversion policy that is being used for this connection.

For Npvcs, this attribute is not displayed.

Policy ***3*** characterizes the traffic in the following way:
- ATM traffic descriptor type 6 is selected
- ATM service category rtVbr and nrtVbr supported only
- PCR0+1 is based on AR
- SCR0+1 is based on CIR and EIR
- MBS0+1 is based on Bc, Be, CIR, EIR and AR
- Takes into account that the instantaneous rate of the frame relay stream can be above CIR and up to the AR.

Policy ***4*** characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer.
- PCR0+1 is based on AR
- SCR0 is based on CIR

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- MBS0 is based on Bc, CIR, and AR
- There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR.

Policy ***5*** characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer
- ATM service category rtVbr and nrtVbr supported only
- PCR0+1 is based on CIR and EIR
- SCR0 is based on the CIR
- MBS0 is based on the CIR
- The maximum PCR is no longer based on the AR but rather on the CIR and EIR or CIR.

Policy ***6*** characterizes the traffic in the following way:
- ATM traffic descriptor type 3 is selected
- ATM service category ubr, cbr, rtVbr and nrtVbr supported only
- PCR0+1 is based only on CIR.

Mib: FrameRelayAtm

Values:
3
4
5
6
notApplicable

Default: No default

ATTRIBUTE FrAtm Dlci Siwf avgFrameSize (afs)

Access: Read only

Description: This attribute indicates the average frame size that is used for this connection as part of the traffic parameter conversion policy. Average frame size is not applicable for Npvcs, and therefore it is not displayed.

Mib: FrameRelayAtm

Values: Decimal (0..8187)

Units: bytes

Default: No default

ATTRIBUTE FrAtm Dlci Siwf remoteAddress (raddr)

Access: Read only

Description: This attribute indicates the remote address (native E.164, native X.121 or NSAP) for this connection. This attribute is only displayed for SPVCs.

Mib: FrameRelayAtm

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Values	String (1..44, NativeAESANsapAddress)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf remoteConnectionIdentifier (rci)

Access	Read only
Description	This attribute indicates the remote connection identifier. This identifier is either a remote *Atm Vpi.Vci* logical channel number or a remote *Frame Relay Dlci* logical channel number. The remote *Atm Vpi.Vci* logical channel number is displayed as "***Vpi.Vci***". and the remote *Frame Relay Dlci* logical channel number is displayed as "***0.remoteDlci***". For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Integer Sequence (0..255; 0..16128)
Default	No default

GROUP FrAtm Dlci Siwf ServiceDescriptorsOp (SdOp)

Properties	Operational
Description	This group contains operational information for a *Siwf* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf mode

Access	Read only
Description	This attribute indicates the mode of interoperability between the Frame Relay and ATM connections regarding upper layer protocol encapsulations. A value of ***translationMode*** indicates that the interworking function performs translation between RFC 1490 and RFC 1483 encapsulated headers, including routed protocol translation, bridged protocol translation, and connection oriented protocol translation (except for RFC 1490 connection oriented protocol without RFC 1490 header, which is done in *speTranslationMode*). A value of ***transparentMode*** indicates that the interworking function forwards data without altering the upper layer user protocol encapsulation. Transparent mode is selected when the upper layer user protocol encapsulation methods are compatible between terminal equipments. A value of ***speTranslationMode*** indicates that the interworking function performs single protocol translation between RFC 1490 with no header and RFC 1483 encapsulated packets.
Mib	FrameRelayAtm

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Values	translationMode transparentMode speTranslationMode
Default	No default

ATTRIBUTE FrAtm Dlci Siwf **deToClpMapping (detclp)**

Access	Read only
Description	This attribute indicates the type of DE to CLP mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the DE field in a Q.922 core frame is copied to the ATM CLP field of every cell containing the information of that frame. A value of ***always0*** indicates that the CLP field of every generated ATM cell is always 0. A value of ***always1*** indicates that the CLP field of every generated ATM cell is always1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	No default

ATTRIBUTE FrAtm Dlci Siwf **clpToDeMapping (clptde)**

Access	Read only
Description	This attribute indicates the type of CLP to DE mapping that is performed in the ATM to Frame Relay direction. A value of ***preserve*** indicates that the DE field of the Q.922 Core frame is set when one or more ATM cells belonging to an AAL5 frame have their CLP field set. A value of ***always0*** indicates that the DE field of the Q.922 Core frame is always set to 0. A value of ***always1*** indicates that the DE field of the Q.922 Core frame is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve

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Default	No default

ATTRIBUTE FrAtm Dlci Siwf fecnToEfciMapping (fecntefci)

Access	Read only
Description	This attribute indicates the type of FECN to EFCI mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the FECN field in a Q.922 Core frame is copied directly to the ATM EFCI field of every cell. A value of ***always0*** indicates that the EFCI field in every ATM cell generated is set to 0.
Mib	FrameRelayAtm
Values	always0 preserve
Default	No default

ATTRIBUTE FrAtm Dlci Siwf crToUuMapping (crtuu)

Access	Read only
Description	This attribute indicates the type of CR to UU mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the proprietary and CR bits are mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. The proprietary bits are used for rate enforcement and rate adaption but are unused according to the FRF8 standard. A value of ***standardFRF8*** indicates that only the CR bit is mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. This is in accordance with the FRF8 standard. This option is provided to avoid equipment inter-working issues with the proprietary use of the unused bits of the CPCS-UU field for rate enforcement and rate adaption.
Mib	FrameRelayAtm
Values	standardFRF8 preserve
Default	preserve

ATTRIBUTE FrAtm Dlci Siwf transferPriority (tp)

Access	Read only

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Description	This attribute indicates the transfer priority used to establish the connection. For Npvcs, the value is ***notApplicable***.
Mib	FrameRelayAtm
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 notApplicable
Default	No default

ATTRIBUTE FrAtm Dlci Siwf assignedBandwidthPool (asgBwPool)

Access	Read only
Description	This attribute specifies the bandwidth pool that this *Dlci* uses.
Mib	FrameRelayAtm
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	No default

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GROUP FrAtm Dlci Siwf FrAtmDlcSiwfSoftPvcOp (SiwfSpvcOp)

Properties	Operational
Description	This group contains operational attributes for the *FrAtm Dlci Siwf Spvc* connection.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf peakCellRate0 (pcr0)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0). The *pcr0* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf peakCellRate01 (pcr01)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *pcr01* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf sustainedCellRate0 (scr0)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the ATM VCC to which this interworking function is linked for high priority cells (with CLP=0).

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	The *scr0* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping.* For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf sustainedCellRate01 (scr01)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the ATM VCC that to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *scr01* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf maximumBurstSize0 (mbs0)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the ATM VCC to which this interworking function is linked for high priority cells (with CLP=0). The *mbs0* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf maximumBurstSize01 (mbs01)

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Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *mbs01* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping.* For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf equivalentBitRate (ebr)

Access	Read only
Description	This attribute indicates the access reserved bandwidth for this FR-ATM connection when CAC is on. If a connection is subscribed to CIR only or CIR plus EIR service, the EBR reserved is CIR. If a connection is subscribed to EIR only service, the EBR reserved is 0.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf type (typ)

Access	Read only
Description	This attribute indicates if the component provisioned is a calling or called end. If the value is ***master***, the *Dlci Siwf Spvc* component is provisioned as a calling end and is responsible for originating the call to set up the ATM VCC. If the value is ***slave***, this *Dlci Siwf* component is provisioned as a called end and is responsible for terminating call setup requests from the remote end. This attribute is not displayed for NPVCs.
Mib	FrameRelayAtm
Values	master slave notApplicable
Default	No default

ATTRIBUTE FrAtm Dlci Siwf vccClearCause (vclc)

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Access	Read only
Description	This attribute indicates the last received clear cause message from the network. This attribute is not displayed for NPVCs. Please refer to ATM User-Network Interface Specification for possible clear causes.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf vccCauseDiag (vcdg)

Access	Read only
Description	This attribute indicates the diagnostic value of the last release message received from the network. This attribute is not displayed for NPVCs. Please refer to ATM User-Network Interface Specification for possible diagnostic values.
Mib	FrameRelayAtm
Values	String (1..8, Hex)
Default	No default

GROUP FrAtm Dlci Siwf Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *Siwf* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf unknown1490Frames (unknown1490)

Access	Read only
Description	This attribute counts the number of frames received from the interface that have a frame header that is not recognized by the RFC 1490. When the maximum count is reached, it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf invalid1490Frames (invalid1490)

Access	Read only

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Description	This attribute counts the number of frames received from the interface that have an invalid frame header. An invalid frame header occurs when the frame has less than the expected number of bytes. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf lastUnknown1490ProtocolHeader (lastUnk1490)

Access	Read only
Description	This attribute contains the most recent unrecognized protocol header that was received from the interface. All the RFC 1490 protocols described in sections 5.3.1.1 through 5.3.1.3 of FRF.8 are supported, except ARP is not supported.
Mib	FrameRelayAtm
Values	String (1..8, Hex)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf unknown1483Frames (unknown1483)

Access	Read only
Description	This attribute counts the number of frames received from the ATM connection that have a frame header that is not recognized by the RFC 1483. When the maximum count is reached, it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf invalid1483Frames (invalid1483)

Access	Read only
Description	This attribute counts the number of frames received from the ATM connection that have an invalid frame header. An invalid frame header occurs when the frame has less than the expected number of bytes. When the maximum count is reached, it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE FrAtm Dlci Siwf lastUnknown1483ProtocolHeader (lastUnk1483)

Access	Read only
Description	This attribute identifies the most recent unrecognized protocol header that was received from the ATM connection. All the RFC 1483 protocols described in sections 5.3.1.1 through 5.3.1.3 of FRF.8 are supported except ARP.
Mib	FrameRelayAtm
Values	String (1..8, Hex)
Default	No default

COMPONENT FrAtm Dlci Siwf ServiceDescriptor (Sd)

Groups	GROUP FrAtm Dlci Siwf Sd Provisioned (Prov)
Scope	Application
Description	*FrAtm/n Dlci/n Siwf ServiceDescriptor* The *Sd* component contains provisioning information for its parent *Siwf* component. It is a required component when *Npvc* is provisioned. In the case of *Spvc*, if this component is not provisioned, the connection will use the provisioning information from the *FrAtm Ca* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf Sd Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the parent *Siwf* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf Sd mode

Access	Read and write
Description	This attribute specifies the mode of interoperability between the Frame Relay and ATM connections regarding upper layer protocol encapsulations. When ***translationMode*** is selected, the interworking function performs

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translations between RFC 1490 and RFC 1483 encapsulated headers, including routed protocol translation, bridged protocol translation, and connection oriented protocol translation (except for RFC 1490 connection oriented protocol without RFC 1490 header, which is done in *speTranslationMode*).

A value of ***transparentMode*** indicates that the interworking function forwards data without altering the upper layer user protocol encapsulation. Transparent mode is selected when the upper layer user protocol encapsulation methods are compatible between terminal equipments.

A value of ***speTranslationMode*** indicates that the interworking function performs single protocol translation between RFC 1490 with no header and RFC 1483 encapsulated packets.

The default value is ***sameAsInterface,*** which means as defined in ***FrAtm/ n Ca sdMode.***

Mib — FrameRelayAtm

Values
translationMode
transparentMode
speTranslationMode
sameAsInterface

Default — sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf Sd deToClpMapping (detclp)

Access — Read and write

Description — This attribute specifies the DE to CLP mapping that is performed in the Frame Relay to ATM direction.

When ***preserve*** is selected, the DE field in the Q.922 core frame is mapped to the ATM CLP field of every cell generated by the segmentation process of the AAL5 PDU containing the information of that frame.

When ***always0*** is selected, the CLP field of every ATM cell generated by the segmentation process of the AAL5 PDU containing the information of that frame is always set to 0.

When ***always1*** is selected, the CLP field of every ATM cell generated by the segmentation process of the AAL5 PDU containing the information of that frame is always set to 1.

Mib — FrameRelayAtm

Values
always0
always1
preserve
sameAsInterface

Default — sameAsInterface

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ATTRIBUTE FrAtm Dlci Siwf Sd **clpToDeMapping (clpToDe)**

Access	Read and write
Description	This attribute specifies the type of CLP to DE mapping that is performed in the ATM to Frame Relay to direction. When ***preserve*** is selected, the DE field of the Q.922 Core frame is set when one or more ATM cells belonging to an AAL5 frame have their CLP field set. When ***always0*** is selected, the DE field of the Q.922 Core frame is always set to 0. When ***always1*** is selected, the DE field of the Q.922 Core frame is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve sameAsInterface
Default	sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf Sd **fecnToEfciMapping (fecntefci)**

Access	Read and write
Description	This attribute specifies the type of FECN to EFCI mapping that is performed in the Frame Relay to ATM direction. When ***preserve*** is selected, the FECN field in the Q.922 Core frame is mapped directly to the ATM EFCI field of every cell generated by the AAL5 segmentation process. When ***always0*** is selected, the EFCI field in every ATM cell generated is set to 0.
Mib	FrameRelayAtm
Values	always0 preserve sameAsInterface
Default	sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf Sd **crToUuMapping (crtuu)**

Access	Read and write
Description	This attribute indicates the type of CR to UU mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the proprietary and CR bits are mapped

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to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. The proprietary bits are used for rate enforcement and rate adaption but are unused according to the FRF8 standard.

A value of ***standardFRF8*** indicates that only the CR bit is mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. This is in accordance with the FRF8 standard. This option is provided to avoid equipment inter-working issues with the proprietary use of the unused bits of the CPCS-UU field for rate enforcement and rate adaption.

Mib	FrameRelayAtm
Values	standardFRF8 preserve sameAsInterface
Default	sameAsInterface

COMPONENT FrAtm Dlci Siwf NailedUpPvc (NPvc)

Groups	GROUP FrAtm Dlci Siwf NPvc Provisioned (Prov) GROUP FrAtm Dlci Siwf NPvc FrAtmDlcSiwfNailedUpPvcOp (SiwfNpvcOp)
Scope	Application
Description	*FrAtm/n Dlci/n Siwf NailedUpPvc* This component associates an interworking function with an ATM connection.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf NPvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the NPvc component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf NPvc atmConnection (atmConn)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM connection to which the interworking function is linked.

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	The ATM connection must be linked to an ATM end-point. For example *AtmIf/m Vcc/m Nep.*
Mib	FrameRelayAtm
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf NPvc correlationTag

Access	Read and write
Description	This attribute specifies a unique string, set by the operator, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. Normally, this value is provisioned with the same value at each end of the connection. If the value of accountingEnabled is no, this attribute has no effect. This attribute is also visible in the FrAtm Dlci component when accounting is enabled.
Mib	FrameRelayAtm
Values	String (0..32, ASCII)
Default	""

GROUP FrAtm Dlci Siwf NPvc FrAtmDlcSiwfNailedUpPvcOp (SiwfNpvcOp)

Properties	Operational
Description	This group contains the operational attributes for the *FrAtm Dlci Siwf Npvc* connection.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf NPvc connectionToAtm (connToAtm)

Access	Read only
Description	This attribute indicates the ATM connection to which the interworking function is linked.
Mib	FrameRelayAtm
Values	The name of the component
Default	No default

COMPONENT FrAtm Dlci Siwf SoftPvc (SPvc)

Groups	GROUP FrAtm Dlci Siwf SPvc Provisioned (Prov)
Scope	Application

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Description	*FrAtm/n Dlci/n Siwf SoftPvc* The *Spvc* component specifies the remote end for a soft PVC.
Mib	FrameRelayAtm
Opt. Subcomp.	COMPONENT FrAtm Dlci Siwf SPvc RerouteOverride (RerOv)
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf SPvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the soft PVC component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf SPvc remoteAddress (raddr)

Access	Read and write
Description	This attribute specifies the remote address of the SPVC. It is represented as a prefix NPI string and a sequence of up to 15 digits to specify either a native (E.164 or X.121) address format or Atm End System Address(AESA) in ISO NSAP format. For example: native E.164 = “e.upto15digits” native X.121 = “x.upto14digits” NSAP E.164 ATM address = “n.upto15digits.ESI.SEL” NSAP address = “40 hexadecimal digits”
Mib	FrameRelayAtm
Values	String (1..44, ASCII)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf SPvc remoteConnectionIdentifier (rci)

Access	Read and write
Description	This attribute specifies the remote connection identifier. The identifier is either a remote *Atm Vpi.Vci* logical channel number assignment or a remote *Frame Relay Dlci* logical channel number assignment. The remote *Atm Vpi.Vci* logical channel number is input as “***Vpi.Vci***” and the remote *Frame Relay Dlci* logical channel number is input as “***0.remoteDlci***”.
Mib	FrameRelayAtm
Values	Integer Sequence (0..255; 0..16128)

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Default	No default

ATTRIBUTE FrAtm Dlci Siwf SPvc correlationTag

Access	Read and write
Description	This attribute specifies the unique string, set by the operator, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. If the value of accountingEnabled is no, this attribute has no effect. This attribute is also visible in the FrAtm Dlci component when accounting is enabled. When this attribute is an empty string, the operational correlationTag attribute in the FrAtm Dlci component receives the value of a system-generated correlationTag.
Mib	FrameRelayAtm
Values	String (0..32, ASCII)
Default	""

COMPONENT FrAtm Dlci Siwf SPvc RerouteOverride (RerOv)

Groups	GROUP FrAtm Dlci Siwf SPvc RerOv Provisioned (Prov)
Scope	Device
Description	*FrAtm/n Dlci/x Siwf RerouteOverride* This component represents the ability to override rerouting capability subscription options on a per connection basis for provisioned SPVC and SPVP connections. The addition of this component and changes to the attributes contained in this component are critical to the parent SPVC or SPVP. However, the deletion of this component is not a critical change for the connection. If this component is deleted, the connection remains active with the last provisioned subscription options. Subscription is lost when the connection goes down and re-establishes.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE FrAtm Dlci Siwf SPvc RerOv

Impact	Service
Description	*OPTimize FrAtm/n Dlci/x Siwf RerOv* This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is cancelled. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP FrAtm Dlci Siwf SPvc RerOv **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes related to rerouting subscription options for provisioned connections.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv **protocol**

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by the connection segment. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsInterface***: The requested rerouting protocols are specified by the *protocol* attribute under the *Reroute Ov* component for the interface. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr***: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	FrameRelayAtm
Values	localGlobal localOnly

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globalOnly
localEbr
ebrOnly
sameAsInterface (sameAs)

Default sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv **localConnectionRecoverySubscr (lRecSub)**

Access Read and write

Description This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local connection recovery.
no: The connection segment does not request subscription to local connection recovery.

Mib FrameRelayAtm

Values no
yes
sameAsInterface (sameAs)

Default sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv **localPathOptimizationSubscr (lOptSub)**

Access Read and write

Description This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription.

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If the connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local path optimization.
no: The connection segment does not request subscription to local path optimization.

Mib — FrameRelayAtm

Values — no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv **globalConnectionRecoverySubscr (gRecSub)**

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR connection recovery.
no: The connection segment does not request subscription to global or EBR connection recovery.

Mib — FrameRelayAtm

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Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv globalPathOptimizationSubscr (gOptSub)

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. If the connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription. If the connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted. One of the following values can be specified: ***sameAsInterface***: The subscription rule is determined by the *globalPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise the connection segment does not request subscription. ***yes:*** The connection segment requests subscription to global or EBR path optimization. ***no***: The connection segment does not request subscription to global or EBR path optimization.
Mib	FrameRelayAtm
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

COMPONENT FrAtm Dlci Siwf QualityOfService (QoS)

Groups	GROUP FrAtm Dlci Siwf QoS Provisioned (Prov)
Scope	Application

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Description	*FrAtm/n Dlci/n Siwf QualityOfService* The *QoS* component provides quality of service overrides for its parent *Siwf* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf QoS Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable quality of service attributes for the *Qos* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf QoS emissionPriorityToIf (epToIf)

Access	Read and write
Description	This attribute specifies the emission priority of frames sent to the *FrAtm* interface. Frames in a higher priority queue, represented by a numerically higher number, will be sent before frames in a lower priority queue. The value of this attribute is interpreted according to the value of the provisionable attribute *numberOfEmissionQs* under the parent *FrAtm* component. If the *numberOfEmissionQs* attribute is set to ***2***, *emissionPriorityToIf* value of ***0*** maps to emission priority queue 0 representing a lower priority queue, and *emissionPriorityToIf* values of ***1, 2,*** and ***3*** are mapped to emission priority queue 1 representing the highest priority queue. If the *numberOfEmissionQs* is set to ***4***, the *emissionPriorityToIf* values are directly assigned to the emission priority queues. A value of ***deriveFromTp*** specifies that the emission priority is to be extracted from the *Mod Frs AtmNet Tpm/n* component using the *transferPriority* attribute. A value of ***sameAsInterface*** specifies that the emission priority is to be extracted from the *FrAtm Ca* component using the *niwfEmissionPriorityToIf* attribute.
Mib	FrameRelayAtm
Values	0 1 2 3 deriveFromTp sameAsInterface
Default	sameAsInterface

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ATTRIBUTE FrAtm Dlci Siwf QoS transferPriority (tp)

Access	Read and write
Description	This attribute specifies the transfer priority of frames sent to the ATM connection using this particular Dlci. In the Frame Relay to ATM direction, the *tp* selects the ATM service category of the connection. In the ATM to Frame Relay direction, the *tp* selects the *FrAtm* emission priority queue. A value of ***sameAsInterface*** specifies that the emission priority extracts from the *FrAtm Ca* component using the *siwfTransferPriority* attribute.
Mib	FrameRelayAtm
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 sameAsInterface
Default	sameAsInterface

COMPONENT FrAtm Dlci Siwf AtmConnection (AtmCon)

Groups	GROUP FrAtm Dlci Siwf AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Dlci Siwf AtmCon Operational (Oper)

Properties	Operational

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Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	FrameRelayAtm
Values	The name of the component
Default	No default

COMPONENT FrAtm Dlci Siwf RerouteInfo (RerInfo)

Groups	GROUP FrAtm Dlci Siwf RerInfo Operational (Oper) GROUP FrAtm Dlci Siwf RerInfo EbrOperational (EOper) GROUP FrAtm Dlci Siwf RerInfo LocalOperational (LOper) GROUP FrAtm Dlci Siwf RerInfo GlobalOperational (GOper) GROUP FrAtm Dlci Siwf RerInfo EbrStatistics (EStats) GROUP FrAtm Dlci Siwf RerInfo LocalStatistics (LStats) GROUP FrAtm Dlci Siwf RerInfo GlobalStatistics (GStats)
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci RerouteInfo* *AtmIf/n Vpc/vpi RerouteInfo* *AtmIf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo* This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Dlci Siwf RerInfo Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes that indicate rerouting activities at the connection level.
Mib	FrameRelayAtm

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ATTRIBUTE FrAtm Dlci Siwf RerInfo **lastOptimizationMetric (lOptMet)**

Access	Read only
Description	This attribute indicates which optimization metric was last used to select a path for the connection segment.
Mib	FrameRelayAtm
Values	cdv maxCtd aw specifiedPath
Default	No default

GROUP FrAtm Dlci Siwf RerInfo **EbrOperational (EOper)**

Properties	Operational
Description	This group contains attributes that indicate the EBR rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the EBR rerouting protocol.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo **ebrRecoverySubscribed (eRecSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **ebrOptimizationSubscribed (eOptSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR path optimization. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm

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Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrOptimizationMetricValue (eOptVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrOptimalMetricValue (eOptMetVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrOptimizationState (eOptSt)

Access	Read only
Description	This attribute indicates the current EBR optimization state of the connection segment.

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	One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	optimal recovered optimized
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **ebrTimeOfLastRecovery (eTime)**

Access	Read only
Description	This attribute indicates the date and time of the last EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Time (DHMS)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo **LocalOperational (LOper)**

Properties	Operational
Description	This group contains attributes that indicate the local rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo **localRecoverySubscribed (lRecSub)**

Access	Read only

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Description	This attribute indicates whether the connection segment is subscribed to local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **localOptimizationSubscribed (lOptSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local path optimization. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **localOptimizationMetricValue (lOptVal)**

Access	Read only
Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. A value of ***undefined*** indicates that the local optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **localOptimalMetricValue (lOptMetVal)**

Access	Read only
Description	This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a

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connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib — FrameRelayAtm

Values — Decimal (0..4294967294)
undefined

Default — No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **localOptimizationState (lOptSt)**

Access — Read only

Description — This attribute indicates the current local optimization state of the connection segment.

One of the following values is indicated:
optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib — FrameRelayAtm

Values — optimal
recovered
optimized

Default — No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **localTimeOfLastRecovery (lTime)**

Access — Read only

Description — This attribute indicates the date and time of the last local connection recovery.

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	This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Time (DHMS)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo **GlobalOperational (GOper)**

Properties	Operational
Description	This group contains attributes that indicate the global rerouting characteristics of a connection. This group is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo **globalRecoverySubscribed (gRecSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **globalOptimizationSubscribed (gOptSub)**

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global path optimization. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **globalOptimizationMetricValue (gOptVal)**

Access	Read only

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Description	This attribute indicates the global optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **globalOptimalMetricValue (gOptMetVal)**

Access	Read only
Description	This attribute indicates the global optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***globalOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.The ***primary*** and ***alternate*** values are used to denote the optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **globalOptimizationState (gOptSt)**

Access	Read only
Description	This attribute indicates the current global optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the

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	connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	optimal recovered optimized
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo globalTimeOfLastRecovery (gTime)

Access	Read only
Description	This attribute indicates the date and time of the last global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Time (DHMS)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo EbrStatistics (EStats)

Properties	Operational
Description	This group contains statistics related to Ebr rerouting for the connection segment.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalEbrConnectionRecoveries (eConnRec)

Access	Read only
Description	This attribute counts successful EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE FrAtm Dlci Siwf RerInfo **totalEbrPathOptimizations (ePathOpt)**

Access	Read only
Description	This attributes counts successful EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **totalEbrOptimizationAttempts (eOptAtt)**

Access	Read only
Description	This attribute counts the total number of EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo **LocalStatistics (LStats)**

Properties	Operational
Description	This group contains statistics related to local rerouting for the connection segment.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo **totalLocalConnectionRecoveries (lConnRec)**

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **totalLocalPathOptimizations (lPathOpt)**

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Access	Read only
Description	This attributes counts successful local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **totalLocalOptimizationAttempts (lOptAtt)**

Access	Read only
Description	This attribute counts the total number of local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo **GlobalStatistics (GStats)**

Properties	Operational
Description	This group contains statistics related to global rerouting for the connection segment.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo **totalGlobalConnectionRecoveries (gConnRec)**

Access	Read only
Description	This attribute counts successful global connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo **totalGlobalPathOptimizations (gPathOpt)**

Access	Read only

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Description	This attributes counts successful global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalGlobalOptimizationAttempts (gOptAtt)

Access	Read only
Description	This attribute counts the total number of global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

COMPONENT FrAtm Dlci NetworkInterworkingFunction (Niwf)

Groups	GROUP FrAtm Dlci Niwf Operational (Oper)
Scope	Application
Description	*FrAtm/n Dlci/n NetworkInterworkingFunction* The *Niwf* component provides the network interworking function capability between a Frame Relay data link connection and a FRF.5 ATM end point.
Mib	FrameRelayAtm
Subcomponents	COMPONENT FrAtm Dlci Niwf SoftPermanentVirtualCircuit (Spvc)
Opt. Subcomp.	COMPONENT FrAtm Dlci Niwf NetworkingDescriptor (Nd) COMPONENT FrAtm Dlci Niwf QualityOfService (QoS)
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Niwf Operational (Oper)

Properties	Operational
Description	This group contains operational networking description information for a *Niwf* component.

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Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Niwf deToClpMapping (detclp)

Access	Read only
Description	This attribute indicates the type of DE to CLP mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the DE field in the Q.922 core frame copies to the CLP field of every ATM cell containing the frame. A value of ***always0*** indicates that the CLP field of every ATM cell is always set to 0. A value of ***always1*** indicates that the CLP field of every ATM cell is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	No default

ATTRIBUTE FrAtm Dlci Niwf clpToDeMapping (clptde)

Access	Read only
Description	This attribute indicates the type of CLP to DE mapping that is performed in the ATM to Frame Relay direction. A value of ***preserve*** indicates that the DE field of the Q.922 core frame is set when one or more ATM cells belonging to the frame has its CLP field set, or when the DE field of the FR-SSCS PDU is set. A value of ***transparent*** indicates that the DE field of the Q.922 core frame copies directly from the DE field of the FR-SSCS PDU.
Mib	FrameRelayAtm
Values	preserve transparent
Default	No default

ATTRIBUTE FrAtm Dlci Niwf transferPriority (tp)

Access	Read only
Description	This attribute indicates the transfer priority in use for a specific connection. This is the transfer priority that the local Frame Relay network uses for this connection to an ATM network. In the Frame Relay to ATM direction, the *tp* selects the FRF.5 End Point which multiplexes the frames. In the ATM to Frame Relay direction, the *tp* selects the default *FrAtm* emission priority queue to be used by this *Dlci*.
Mib	FrameRelayAtm

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Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrAtm Dlci Niwf atmServiceCategory (asc)

Access	Read only
Description	This attribute indicates the ATM service category that was mapped for this connection. A value of ***scNotAvailable*** indicates that *atmServiceCategory* is not yet available for this connection.
Mib	FrameRelayAtm
Values	ubr cbr rtVbr nrtVbr scNotAvailable
Default	No default

ATTRIBUTE FrAtm Dlci Niwf trafficParmConvPolicy (tpcp)

Access	Read only
Description	This attribute indicates the traffic parameter conversion policy that is used for this connection. Policy ***3*** characterizes the traffic in the following way: - ATM traffic descriptor type 6 is selected. - PCR(0+1) is based on the ATM link rate. - SCR(0+1) is based on the CIR and EIR. - MB(0+1) is based on Bc, Be, CIR, EIR and AR. - Takes into account that the instantaneous rate of the frame relay stream can be above CIR and up to the AR. Policy ***4*** characterizes the traffic in the following way: - ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer. - PCR(0+1) is based on AR. - SCR(0) is based on the CIR. - MBS(0) is based on Bc, CIR, and AR. - There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR. Policy ***5*** characterizes the traffic in the following way: - ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer. - PCR(0+1) is based on the CIR and EIR. - SCR(0) is based on the CIR.

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- MBS(0) is based on the CIR.
- The maximum PCR is no longer based on the AR but rather on the CIR and EIR.

Policy ***6*** characterizes the traffic in the following way:
- ATM traffic descriptor type 3 is selected.
- PCR(0+1) is based only on the CIR

policyNotAvailable indicates that the *trafficParmConvPolicy* is not yet available for this connection.

Mib	FrameRelayAtm
Values	policyNotAvailable 3 4 5 6
Default	No default

ATTRIBUTE FrAtm Dlci Niwf **avgFrameSize (afs)**

Access	Read only
Description	This attribute indicates the average frame size that was used for this connection as part of the traffic parameter conversion policy. A value of zero indicates that the *avgFrameSize* is not yet available for this connection.
Mib	FrameRelayAtm
Values	Decimal (0..8187)
Units	bytes
Default	No default

ATTRIBUTE FrAtm Dlci Niwf **equivalentBitRate (ebr)**

Access	Read only
Description	This attribute indicates the access reserved bandwidth for this FR-ATM connection when CAC is on. If a connection is subcribed to CIR only or CIR plus EIR service, the EBR reserved is CIR. If a connection is subcribed to EIR only service, the EBR reserved is 0.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE FrAtm Dlci Niwf **atmDlci**

Access	Read only

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Description	This attribute displays the DLCI logical channel used inside the ATM VCC. A null value indicates that the *atmDlci* is not yet available for this connection.
Mib	FrameRelayAtm
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE FrAtm Dlci Niwf assignedBandwidthPool (asgBwPool)

Access	Read only
Description	This attribute specifies the bandwidth pool which is used by this *Dlci*.
Mib	FrameRelayAtm
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	No default

COMPONENT FrAtm Dlci Niwf SoftPermanentVirtualCircuit (Spvc)

Groups	GROUP FrAtm Dlci Niwf Spvc Provisioned (Prov)
Scope	Application
Description	*FrAtm/n Dlci/n Niwf SoftPermanentVirtualCircuit* The *Spvc* component represents the remote end of a soft PVC.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Dlci Niwf Spvc Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the provisionable attributes for the soft PVC component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Niwf Spvc remoteAddress (raddr)

Access	Read and write
Description	This attribute specifies the remote address of the SPVC. It is represented as a prefix NPI string and a sequence of up to 15 digits to specify either a native E.164 or native X.121 address format. For example, native E.164 = “e.upto15digits”.
Mib	FrameRelayAtm
Values	String (3..17, ASCII)
Default	No default

ATTRIBUTE FrAtm Dlci Niwf Spvc remoteDlci

Access	Read and write
Description	This attribute specifies the remote connection identifier. This identifier is the DLCI logical channel number assignment used inside the ATM pipe.
Mib	FrameRelayAtm
Values	Decimal (16..1007; 1022)
Default	1022

ATTRIBUTE FrAtm Dlci Niwf Spvc correlationTag

Access	Read and write
Description	This attribute specifies aunique string, set by the operator, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. Normally, the attribute is provisioned with the same value at both ends of the connection. If the value of accountingEnabled is no, this attribute has no effect. This attribute is also visible in the FrAtm Dlci component when accounting is enabled. When this attribute is an empty string, the operational correlationTag attribute in the FrAtm Dlci component receives the value of a system-generated correlationTag.
Mib	FrameRelayAtm
Values	String (0..32, ASCII)
Default	""

COMPONENT FrAtm Dlci Niwf NetworkingDescriptor (Nd)

Groups	GROUP FrAtm Dlci Niwf Nd Provisioned (Prov)
Scope	Application

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Description	*FrAtm/n Dlci/n Niwf NetworkingDescriptor* The *Nd* component provides networking descriptor overrides for its parent *Niwf* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Niwf Nd Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the parent *Niwf* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Niwf Nd deToClpMapping (detclp)

Access	Read and write
Description	This attribute specifies the type of DE to CLP mapping performs in the Frame Relay to ATM direction. When ***preserve*** is selected, the DE field in the Q.922 core frame copies to the CLP field of every ATM cell containing the frame. When ***always0*** is selected, the CLP field of every ATM cell is always set to 0. When ***always1*** is selected, the CLP field of every ATM cell is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve sameAsInterface
Default	sameAsInterface

ATTRIBUTE FrAtm Dlci Niwf Nd clpToDeMapping (clptde)

Access	Read and write
Description	This attribute specifies the type of CLP to DE mapping performs in the ATM to Frame Relay direction. When ***preserve*** is selected, the DE field of the Q.922 core frame is set when one or more ATM cells belonging the frame has its CLP field set, or when the DE field of the FR-SSCS PDU is set. When ***transparent*** is selected, the DE field of the Q.922 core frame copies directly from the DE field of the FR-SSCS PDU.

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Mib	FrameRelayAtm
Values	preserve transparent sameAsInterface
Default	sameAsInterface

COMPONENT FrAtm Dlci Niwf QualityOfService (QoS)

Groups	GROUP FrAtm Dlci Niwf QoS Provisioned (Prov)
Scope	Application
Description	*FrAtm/n Dlci/n Niwf QualityOfService* The *QoS* component provides quality of service overrides for its parent *Niwf* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Niwf QoS Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable quality of service attributes for the *Qos* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Niwf QoS emissionPriorityToIf (epToIf)

Access	Read and write
Description	This attribute specifies the emission priority of frames sent to the *FrAtm* interface. Frames in a higher priority queue, depicted by a numerically higher number, are sent before frames in a lower priority queue. The value of this attribute is interpreted according to the value of the provisionable attribute *numberOfEmissionQs* under the parent *FrAtm* component. If the *numberOfEmissionQs* attribute is set to ***2***, *emissionPriorityToIf* value of ***0*** maps to emission priority queue 0 representing a lower priority queue, and *emissionPriorityToIf* values of ***1, 2,*** and ***3*** map to emission priority queue 1 representing the highest priority queue. If the *numberOfEmissionQs* is set to ***4***, the *emissionPriorityToIf* values are directly assigned to the emission priority queues. A value of ***deriveFromTp*** specifies that the emission priority is to be extracted from the *Mod Frs AtmNet Tpm/n* component using the *transferPriority* attribute. A value of ***sameAsInterface*** specifies that the emission priority is extracts from the *FrAtm Ca* component using the *niwfEmissionPriorityToIf* attribute.

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Mib	FrameRelayAtm
Values	0 1 2 3 deriveFromTp sameAsInterface
Default	sameAsInterface

ATTRIBUTE FrAtm Dlci Niwf QoS transferPriority (tp)

Access	Read and write
Description	This attribute specifies the transfer priority of frames sent to the ATM connection. In the Frame Relay to ATM direction, the *tp* selects the FRF.5 End Point which multiplexes the frames. In the ATM to Frame Relay direction, the *tp* selects the default *FrAtm* emission priority queue to be used by this DLCI. A value of ***sameAsInterface*** specifies that the emission priority is to be extracted from the *FrAtm Ca* component using the *niwfTransferPriority* attribute.
Mib	FrameRelayAtm
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 sameAsInterface
Default	sameAsInterface

COMPONENT FrAtm Dlci EgressServiceParameters (EgSp)

Groups	GROUP FrAtm Dlci EgSp Provisioned (Prov)
Scope	Application

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Description	*FrAtm/n Dlci/n EgressServiceParameters* This component contains the provisionable attributes of the egress direction for the parent *Dlci* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci EgSp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the egress direction for the Data Link Connection Identifier. These attributes reflect the service parameters for the egress direction specific to this instance of *Dlci*.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci EgSp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR) for the egress direction. It is used for bandwidth reservation for the purpose of performing a Call Admission Control (CAC) function towards the egress link. This attribute is not used to perform rate enforcement towards the egress link.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrAtm Dlci EgSp committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size (Bc) for the egress direction. It is used for bandwidth reservation for the purpose of performing a Call Admission Control (CAC) function towards the egress link. This attribute is not used to perform rate enforcement towards the egress link.
Mib	FrameRelayAtm

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Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrAtm Dlci EgSp excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size (Be) for the egress direction. It is used for bandwidth reservation for the purpose of performing a Call Admission Control (CAC) function towards the egress link. This attribute is not used to perform rate enforcement towards the egress link.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrAtm Dlci EgSp measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval for the egress direction. It is used for bandwidth reservation for the purpose of performing a Call Admission Control (CAC) function towards the egress link. This attribute is not used to perform rate enforcement towards the egress link.
Mib	FrameRelayAtm
Values	Decimal (0..25500)
Units	msec
Default	0

COMPONENT FrAtm VirtualFramer (VFramer)

Groups	GROUP FrAtm VFramer Provisioned (Prov) GROUP FrAtm VFramer OsiState (State) GROUP FrAtm VFramer Statistics (Stats)
Scope	Application
Description	*FrUni/n VirtualFramer* *FrDte/n VirtualFramer*

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	The *VirtualFramer* component binds two services together to provide data transfer between them. It is mutually exclusive from *Framer* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm VFramer Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *VirtualFramer* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm VFramer otherVirtualFramer (ovf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the other *VirtualFramer* to which the service is linked, for example, *FrUni/n VirtualFramer*, *FrDte/n VirtualFramer.*
Mib	FrameRelayAtm
Values	Link (Service, otherVirtualFramer)
Default	No default

ATTRIBUTE FrAtm VFramer logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the service component will reside.
Mib	FrameRelayAtm
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP FrAtm VFramer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — FrameRelayAtm

ATTRIBUTE FrAtm VFramer adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — FrameRelayAtm

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE FrAtm VFramer operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — FrameRelayAtm

Values — enabled (ena)
disabled (dis)

Default — disabled

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ATTRIBUTE FrAtm VFramer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayAtm
Values	idle active (activ) busy
Default	idle

GROUP FrAtm VFramer **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics data for a *VirtualFramer* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm VFramer **frmToOtherVFramer**

Access	Read only
Description	This attribute counts the frames transmitted to the *otherVirtualFramer*.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm VFramer **frmFromOtherVFramer**

Access	Read only
Description	This attribute counts the frames received from the *otherVirtualFramer*.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm VFramer **octetFromOtherVFramer**

Access	Read only

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Description	This attribute counts the octets received from the *otherVirtualFramer*.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm VFramer discFrmFromOtherVFramer (discFrmFromOvf)

Access	Read only
Description	This attribute counts the discarded frames from the *otherVirtualFramer*. Incrementing of this counter indicates that some incoming traffic cannot be handled by the FP.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

COMPONENT FrAtm Address (Addr)

Groups	GROUP FrAtm Addr Provisioned (Prov) GROUP FrAtm Addr FrAtmAddrOp (addrOp)
Scope	Application
Description	*FrAtm/n Address* The *Addr* component contains the address for a *FrAtm* interface that supports native E.164 or X.121.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Addr Provisioned (Prov)

Properties	Provisioned
Description	This group specifies the address of the *FrAtm* Interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Addr address (addr)

Access	Read and write
Criticality	Process

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Description	This attribute contains digits which form the unique identifier of the customer. It is the equivalent of the telephone number in the telephone network (either native E.164 or X.121 address formats, or Atm End System Address(AESA) in ISO NSAP format). For example, E.164 prefix “e.613722”, X.121 prefix “x.302”, NSAP “45000441812460730F000000000020480D200100”.
Mib	FrameRelayAtm
Values	String (1..44, ASCII)
Default	No default

GROUP FrAtm Addr FrAtmAddrOp (addrOp)

Properties	Operational
Description	This group display the address of the *FrAtm* Interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Addr myAddress (myAddr)

Access	Read only
Description	This attribute displays the parent FRATM component’s address in the ISO NSAP format.
Mib	FrameRelayAtm
Values	String (40, ASCII)
Default	No default

COMPONENT FrAtm ConnectionAdministrator (Ca)

Groups	GROUP FrAtm Ca Provisioned (Prov) GROUP FrAtm Ca ServiceDescriptor (Sd) GROUP FrAtm Ca NetworkingDescriptor (Nd) GROUP FrAtm Ca InterfaceQualityOfService (IfQoS) GROUP FrAtm Ca Operational (Op) GROUP FrAtm Ca AccountingOptions
Scope	Application
Description	*FrAtm/n ConnectionAdministrator* The *Ca* component allows common subscription options applicable to interworking with ATM networking to be specified by the network operator on a *FrAtm* interface. The values defined under the *Ca* component interface defaults are used for the majority of the connections. For exception cases, the interface defaults specified in the *Ca* component can

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be overridden on a per connection basis by provisioning *FrAtm Dlci Siwf Qos* or *FrAtm Dlci Niwf Qos* components.

Mib	FrameRelayAtm
Opt. Subcomp.	COMPONENT FrAtm Ca TransferPriorityMapping (Tpm)
Common Verbs	Help List Display

GROUP FrAtm Ca Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes of the *Ca* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca callAdmissionControl (cac)

Access	Read and write
Criticality	Process
Description	This attribute specifies the control to turn on Call Admission Control (CAC). The default value for CAC is off.
Mib	FrameRelayAtm
Values	off on
Default	off

ATTRIBUTE FrAtm Ca overrideLinkRate (ovLinkRate)

Access	Read and write
Criticality	Process
Description	This attribute allows the link rate to be overridden for this interface. This allows the user to specify a value other than the actual physical link rate computed when a *Framer* component is provisioned. In the absence of a *Framer* component, or when a *VirtualFramer* component is provisioned, this value needs to be explictly set to provide an equivalent link rate. This attribute provides control on the amount of bandwidth available for performing CAC. This attribute also provides the requested amount of bandwidth that is negotiated across an ATM network for traffic conversion polices 3 and 4, since these policies are a function of the access rate.
Mib	FrameRelayAtm
Values	Decimal (0..520000000)

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Units	bit/s
Default	0

ATTRIBUTE FrAtm Ca bandwidthPool (bwPool)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15). This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000%. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentage assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentage for the 16 pools exceeds 100%. The sum of the percentage assigned to the 16 pools cannot exceed 1000%. The default is full sharing of port capacity without pre-set partitions between transfer priorities.
Mib	FrameRelayAtm
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(100, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrAtm Ca ServiceDescriptor (Sd)

Properties	Provisioned
Description	This group contains provisionable service interworking attributes for the *FrAtm* component. The attributes defined in this group provide the defaults for all the connections on the *FrAtm* interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca sdMode

Access	Read and write
Criticality	Process
Description	This attribute specifies the mode of interoperability between the Frame Relay and ATM connections regarding upper layer protocol encapsulations. This is used as the default for all the connections on the interface. When ***translationMode*** is selected, the interworking function performs translations between RFC1490 and RFC1483 encapsulated headers. This includes routed protocol translation, bridged protocol translation, and connection oriented protocol translation (except for RFC 1490 connection

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oriented protocol without RFC 1490 header, which is done in *speTranslationMode*).

A value of ***transparentMode*** indicates that the interworking function is forwarding data without altering the upper layer user protocol encapsulation. Use transparent mode when the upper layer user protocol encapsulation methods are compatible between terminal equipments.

A value of ***speTranslationMode*** indicates that the interworking function performs single protocol translation between RFC1490 with no header and RFC1483 encapsulated packets.

Mib	FrameRelayAtm
Values	translationMode transparentMode speTranslationMode
Default	translationMode

ATTRIBUTE FrAtm Ca sdDeToClpMapping (sdetclp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the DE to CLP mapping that is performed in the Frame Relay to ATM direction. This is used as the default for all the connections on the interface. When ***preserve*** is selected, the DE field in a Q.922 core frame copies to the ATM CLP field of every cell containing the information of that frame. When ***always0*** is selected, the CLP field of every generated ATM cell is always 0. When ***always1*** is selected, the CLP field of every generated ATM cell is always 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	preserve

ATTRIBUTE FrAtm Ca sdClpToDeMapping (sclpToDe)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the type of CLP to DE mapping that is performed in the ATM to Frame Relay direction. When ***preserve*** is selected, the DE field of the Q.922 core frame is set when one or more ATM cells belonging to an AAL5 frame has its CLP field set. When ***always0*** is selected, the DE field of the Q.922 core frame is always set to 0. When ***always1*** is selected, the DE field of the Q.922 core frame is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	preserve

ATTRIBUTE FrAtm Ca sdFecnToEfciMapping (sfecntefci)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of FECN to EFCI mapping that is performed in the Frame Relay to ATM direction. When ***preserve*** is selected, the FECN field in the Q.922 Core frame maps directly to the ATM EFCI field of every cell generated by the AAL5 segmentation process. When ***always0*** is selected, the EFCI field in every ATM cell generated is set to 0.
Mib	FrameRelayAtm
Values	always0 preserve
Default	preserve

ATTRIBUTE FrAtm Ca sdCrToUuMapping (scrtuu)

Access	Read and write
Criticality	Process
Description	This attribute indicates the type of CR to UU mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the proprietary and CR bits are mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation

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process. The proprietary bits are used for rate enforcement and rate adaption but are unused according to the FRF8 standard.

A value of ***standardFRF8*** indicates that only the CR bit is mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. This is in accordance with the FRF8 standard. This option is provided to avoid equipment inter-working issues with the proprietary use of the unused bits of the CPCS-UU field for rate enforcement and rate adaption.

Mib	FrameRelayAtm
Values	standardFRF8 preserve
Default	preserve

GROUP FrAtm Ca NetworkingDescriptor (Nd)

Properties	Provisioned
Description	This group contains the default provisionable networking attributes for the *FrAtm* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca ndDeToClpMapping (ndetclp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of DE to CLP mapping to be performed in the Frame Relay to ATM direction. When ***preserve*** is selected, the DE field in the Q.922 core frame copies to the CLP field of every ATM cell containing the frame. When ***always0*** is selected, the CLP field of every ATM cell is always set to 0. When ***always1*** is selected, the CLP field of every ATM cell is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	preserve

ATTRIBUTE FrAtm Ca ndClpToDeMapping (nclptde)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of CLP to DE mapping to be performed in the ATM to Frame Relay direction.

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When ***preserve*** is selected, the DE field of the Q.922 core frame is set when one or more ATM cells belonging to the frame has its CLP field set, or when the DE field of the FR-SSCS PDU is set.
When ***transparent*** is selected, the DE field of the Q.922 core frame copies directly from the DE field of the FR-SSCS PDU.

Mib: FrameRelayAtm

Values:
preserve
transparent

Default: preserve

GROUP FrAtm Ca InterfaceQualityOfService (IfQoS)

Properties: Provisioned

Description: This attribute group contains the provisionable quality of service attributes for the parent *FrAtm* interface.

Mib: FrameRelayAtm

ATTRIBUTE FrAtm Ca siwfEmissionPriorityToIf (sEpToIf)

Access: Read and write

Criticality: Process

Description: This attribute specifies the emission priority of frames sent to this *FrAtm* interface from its service interworking functions. Frames in a higher priority queue, designated by a numerically higher number, are sent before frames in a lower priority queue.
The value of this attribute is interpreted according to the value of the provisionable attribute *numberOfEmissionQs* under the parent *FrAtm* component. If the *numberOfEmissionQs* attribute is set to ***2***, *siwfEmissionPriorityToIf* value of ***0*** maps to emission priority queue 0 representing a lower priority queue, and *siwfEmissionPriorityToIf* values of ***1***, ***2*** or ***3*** map to emission priority queue 1 representing the highest priority queue. If the *numberOfEmissionQs* is set to ***4***, the *siwfEmissionPriorityToIf* values directly map to the emission priority queues.
A value of ***deriveFromTp*** specifies that the emission priority is extracted from the *Mod Frs AtmNet Tpm/n* component using the *siwfTransferPriority* attribute.
The *siwfEmissionPriorityToIf* can also be overridden on a per connection basis by setting the *emissionPriorityToIf* attribute in the *FrAtm Dlci Siwf Qos* component.

Mib: FrameRelayAtm

Values:
0
1
2
3
deriveFromTp

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Default	0

ATTRIBUTE FrAtm Ca siwfTransferPriority (stp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the transfer priority of frames sent to and received from the ATM connection, through the service interworking functions of this interface. In the Frame Relay to ATM direction, the *stp* selects the ATM service category of the connection. In the ATM to Frame Relay direction, the s*tp* selects the *FrAtm* emission priority queue. The *siwfTransferPriority* can also be overridden on a per connection basis by setting the *transferPriority* atribute in the *FrAtm Dlci Siwf Qos* component.
Mib	FrameRelayAtm
Values	Decimal (0..15)
Default	0

ATTRIBUTE FrAtm Ca niwfEmissionPriorityToIf (nEpToIf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority of frames sent to this *FrAtm* interface from its network interworking functions. Frames in a higher priority queue are sent before frames in a lower priority queue. The value of this attribute is interpreted according to the value of the provisionable attribute *numberOfEmissionQs* under the parent *FrAtm* component. If the *numberOfEmissionQs* attribute is set to ***2***, *niwfEmissionPriorityToIf* value of ***0*** maps to emission priority queue 0 representing a lower priority queue, and *niwfEmissionPriorityToIf* values of ***1, 2*** or ***3*** map to emission priority queue 1 representing the highest priority queue. If the *numberOfEmissionQs* is set to ***4***, the *emissionPrioToIf* values directly assign to the emission priority queues. A value of ***deriveFromTp*** specifies that the emission priority is extracted from the *Mod Frs AtmNet Tpm/n* component using the *niwfTransferPriority* attribute. The *niwfEmissionPriorityToIf* can also be overridden on a per connection basis by setting the *emissionPriorityToIf* atribute in the *FrAtm Dlci Niwf Qos* component.
Mib	FrameRelayAtm
Values	0 1 2

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	3 deriveFromTp
Default	deriveFromTp

ATTRIBUTE FrAtm Ca niwfTransferPriority (ntp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the transfer priority of frames sent to and received from the ATM connection, through the network interworking functions of this interface. In the Frame Relay to ATM direction, the *ntp* selects the *Frf5EndPoint* which multiplexes the frames. In the ATM to Frame Relay direction, the *ntp* selects the default *FrAtm* emission priority queue. The *niwfTransferPriority* can also be overridden on a per connection basis by setting the *transferPriority* atribute in the *FrAtm Dlci Niwf Qos* component.
Mib	FrameRelayAtm
Values	Decimal (0..15)
Default	0

GROUP FrAtm Ca Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *Ca* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca linkRate (linkRate)

Access	Read only
Description	This attribute indicates the link rate. If the provisionable attribute, *overrideLinkRate*, under the *Ca* component is 0, then the link rate reported is the actual link rate of the port or channel. Otherwise, the link rate reported is the *overrideLinkRate* provisioned under the *Ca* component.
Mib	FrameRelayAtm
Values	Decimal (0..520000000)
Units	bit/s
Default	No default

ATTRIBUTE FrAtm Ca nailedUpPvcs (nPvcs)

Access	Read only

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Description	This attribute indicates the number of nailed-Up PVCs currently provisioned on this interface.
Mib	FrameRelayAtm
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrAtm Ca troubledDlcis (trbDlcis)

Access	Read only
Description	This attribute indicates the total number of DLCIs that are disabled and are experiencing problems. This counter increments as a result of the following problem scenarios: Abit down, PVC down, local CAC failure, or call setup failure due to network problem.
Mib	FrameRelayAtm
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrAtm Ca softPvcs (sPvcs)

Access	Read only
Description	This attribute indicates the number of soft PVCs currently provisioned on this interface.
Mib	FrameRelayAtm
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrAtm Ca poolProvisionedBandwidth (poolProvBw)

Access	Read only
Description	This attribute represents the total bandwidth that is allowed for each pool. Total bandwidth for a given pool can be oversubscribed or undersubscribed. The value of this attribute for a given pool is a percentage of the value of the *linkRate* attribute. This percentage is provisioned by setting the *FrAtm Ca bandwidthPool* attribute.
Mib	FrameRelayAtm
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

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ATTRIBUTE FrAtm Ca poolAvailableBandwidth (poolAvailBw)

Access	Read only
Description	This attribute indicates the total available bandwidth from the bandwidth pool.
Mib	FrameRelayAtm
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrAtm Ca poolAdmittedBandwidth (poolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted bandwidth from each bandwidth pool. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayAtm
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

GROUP FrAtm Ca AccountingOptions

Properties	Provisioned
Description	This group contains the common provisioned attributes for accounting on a *FrAtm*.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class, which is reserved for network operations usage. Its value is an arbitrary number. The accounting records the value of this attribute.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	0

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ATTRIBUTE FrAtm Ca accountCollection (aco)

Access	Read and write
Description	This attribute controls accounting data collection at the interface level. It contains the following values: ***bill, test, study, audit, force*** which are used to specify the reason(s) for which accounting records are collected. If the ***bill, test, study and audit*** options are selected in the accountCollection field, accounting records are collected for bill, test, study, or audit purposes. If the ***force*** option is selected in the accountCollection field, accounting records are collected regardless of whether other reasons are provisioned. If no reason is provisioned for this attribute, then accounting data collection does not occur.
Mib	FrameRelayAtm
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE FrAtm Ca serviceExchange (sre)

Access	Read and write
Description	This attribute is an arbitrary number, which is reserved for network operations usage. It is recorded in the accounting record.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	0

COMPONENT FrAtm Ca TransferPriorityMapping (Tpm)

Instance	Decimal (0..15)
Groups	GROUP FrAtm Ca Tpm Provisioned (Prov)
Scope	Application
Description	*FrAtm/n Ca TransferPriorityMapping/n* The *Tpm* component defines the corresponding traffic management subscription options on a *FrAtm* interface corresponding to a particular

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transfer priority. This component is needed only if there is a requirement to override the *Mod Frs AtmNet Tpm* component defaults.

Mib: FrameRelayAtm

Common Verbs:
Help
List
Display
Add
DELete

GROUP FrAtm Ca Tpm Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes of the *Tpm* component at this interface.

Mib: FrameRelayAtm

ATTRIBUTE FrAtm Ca Tpm assignedBandwidthPool (asgBwPool)

Access: Read and write

Criticality: Process

Description: This attribute specifies the bandwidth pool that supports this transfer priority at this interface.

Mib: FrameRelayAtm

Values:
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
samePoolAsModule

Default: samePoolAsModule

ATTRIBUTE FrAtm Ca Tpm trafficParmConvPolicy (tpcp)

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Access	Read and write
Criticality	Process
Description	This attribute specifies the traffic parameter conversion policy to use for a specific transfer priority for specifying equivalent bandwidth rate at the *FrAtm* interface. Policy 3 characterizes the traffic in the following way: - ATM traffic descriptor type 6 is selected - ATM service category rtVbr and nrtVbr supported only - PCR0+1 is based on AR - SCR0+1 is based on CIR and EIR - MBS0+1 is based on Bc, Be, CIR, EIR and AR - Takes into account that the instantaneous rate of the Frame Relay stream can be above CIR and up to the AR. Policy 4 characterizes the traffic in the following way: - ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by the UPC traffic policer. - PCR0+1 is based on AR - ATM service category rtVbr and nrtVbr supported only - SCR0 is based on CIR - MBS0 is based on Bc, CIR, and AR - There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR. Policy 5 characterizes the traffic in the following way: - ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by the UPC traffic policer. - ATM service category rtVbr and nrtVbr supported only - PCR0+1 is based on CIR for descriptor type 7 - PCR0+1 is based on CIR and EIR for descriptor type 8 - SCR0 is based on CIR - MBS0 is based on Bc, CIR, and AR - The maximum PCR is no longer based on the AR but rather on the CIR and EIR or CIR Policy 6 characterizes the traffic in the following way: - ATM traffic descriptor type 3 is selected - ATM service category ubr, cbr, rtVbr and nrtVbr supported only - PCR0+1 is based only on CIR. The default value ***sameAsModule*** implies the *trafficParmConversionPolicy* of *Mod Frs AtmNet Tpm/n* is as defined as *Mod Frs AtmNet Tpm/n*.
Mib	FrameRelayAtm

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Values	sameAsModule policy3 policy4 policy5 policy6
Default	sameAsModule

ATTRIBUTE FrAtm Ca Tpm averageFrameSize (aFs)

Access	Read and write
Criticality	Process
Description	This attribute specifies the average frame size at the FrAtm interface for connections using this transfer priority. If a value of ***0*** is specified, the average frame size defined in *Mod Frs AtmNet Tpm/n avgFrameSize* attribute is used.
Mib	FrameRelayAtm
Values	Decimal (0..8187)
Units	bytes
Default	0

COMPONENT FrAtm Reroute

Groups	GROUP FrAtm Reroute LocalOperational (LOper) GROUP FrAtm Reroute GlobalOperational (GOper) GROUP FrAtm Reroute Statistics (Stats)
Scope	Device
Description	*FrAtm/n Reroute* This component represents the rerouting capabilities of the FrAtm interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	FrameRelayAtm
Subcomponents	COMPONENT FrAtm Reroute Ov
Common Verbs	Help List Display Add DELete

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VERB OPTIMIZE FrAtm Reroute

Impact	Service
Description	*Optimize [-all]FrAtm/n Reroute* This command triggers path optimization for the connection segments managed by the *Reroute* component. By default, only connection segments which are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection. The *-all* option causes all connection segments subscribed to path optimization to be considered. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP FrAtm Reroute **LocalOperational (LOper)**

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute **localSubscribedConnections (lsub)**

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute **localEligibleRecoveredCon (lerc)**

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	FrameRelayAtm

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute localIneligibleRecoveredCon (lirc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrAtm Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute globalSubscribedConnections (gsub)

Access	Read only

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Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute globalLastRrCauseCode (grrcc)

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrAtm Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	FrameRelayAtm

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Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only

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Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

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COMPONENT FrAtm Reroute Ov

Groups	GROUP FrAtm Reroute Ov Provisioned (Prov) GROUP FrAtm Reroute Ov LocalProvisioned (LProv) GROUP FrAtm Reroute Ov GlobalProvisioned (GProv)
Scope	Device
Description	*FrAtm/n Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the FrAtm interface.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr***: Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned

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with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib — FrameRelayAtm

Values
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default — sameAsARtgPnniReroute

ATTRIBUTE FrAtm Reroute Ov numOptAttempts

Access — Read and write

Description — This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib — FrameRelayAtm

Values
Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default — sameAs

ATTRIBUTE FrAtm Reroute Ov moduleOptimizationConnections

Access — Read and write

Description — This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component.

One of the following values can be specified:

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sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are using a path with a greater optimization metric than the best known value are considered for path optimization. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: FrameRelayAtm

Values:
none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE FrAtm Reroute Ov switchoverMechanism

Access: Read and write

Description: This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: FrameRelayAtm

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP FrAtm Reroute Ov LocalProvisioned (LProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for EBR and local rerouting protocols for the *FrAtm* interface.

Mib: FrameRelayAtm

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ATTRIBUTE FrAtm Reroute Ov localConnectionRecoverySubscr (lConRec)

Access	Read and write
Description	This attribute specifies whether the connection segments on this interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either a local domain rerouting node or a DTL originator. If a connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription. If a connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted. One of the following values can be specified: ***sameAsARtgPnniReroute***: The subscription rule is determined by the *Artg Pnni Reroute localConnectionRecoverySubscr* attribute. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segments request subscription to local connection recovery, otherwise, the connection segments do not request subscription. ***yes:*** The connection segments request subscription to local connection recovery. ***no***: The connection segments do not request subscription to local connection recovery.
Mib	FrameRelayAtm
Values	no yes sameAsARtgPnniReroute (follow)
Default	sameAsARtgPnniReroute

ATTRIBUTE FrAtm Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access	Read and write
Description	This attribute specifies whether the connection segments on this interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either a local domain rerouting node or a DTL originator. If a connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription. If a connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted. One of the following values can be specified: ***sameAsARtgPnniReroute***: The subscription rule is determined by the

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Artg Pnni Reroute localPathOptimizationSubscr attribute. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segments request subscription to local path optimization, otherwise, the connection segments do not request subscription.
yes: The connection segments request subscription to local path optimization.
no: The connection segments do not request subscription to local path optimization.

Mib — FrameRelayAtm

Values — no
yes
sameAsARtgPnniReroute (follow)

Default — sameAsARtgPnniReroute

GROUP FrAtm Reroute Ov GlobalProvisioned (GProv)

Properties — Provisioned

Description — This group contains the provisionable attributes for the global rerouting protocol for the *FrAtm* interface.

Mib — FrameRelayAtm

ATTRIBUTE FrAtm Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access — Read and write

Description — This attribute specifies whether the connection segments on this interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute only affects connection segments for a node that is a DTL originator.

If a connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

If a connection segment requests ***localEbr***, this attribute controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsARtgPnniReroute: The subscription rule is determined by the *Artg Pnni Reroute globalConnectionRecoverySubscr* attribute. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segments request subscription to global or EBR connection recovery, otherwise, the connection segments do not request subscription.
yes: The connection segments request subscription to global or EBR connection recovery.
no: The connection segments do not request subscription to global or EBR connection recovery.

Mib — FrameRelayAtm

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Values	no yes sameAsARtgPnniReroute (follow)
Default	sameAsARtgPnniReroute

ATTRIBUTE FrAtm Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access	Read and write
Description	This attribute specifies whether the connection segments on this interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute only affects connection segments for a node that is a DTL originator. If a connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription. If a connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted. One of the following values can be specified: ***sameAsARtgPnniReroute***: The subscription rule is determined by the *Artg Pnni Reroute globalPathOptimizationSubscr* attribute. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segments request subscription to global or EBR path optimization, otherwise, the connection segments do not request subscription. ***yes:*** The connection segments request subscription to global or EBR path optimization. ***no***: The connection segments do not request subscription to global or EBR path optimization.
Mib	FrameRelayAtm
Values	no yes sameAsARtgPnniReroute (follow)
Default	sameAsARtgPnniReroute

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrAtm

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Nortel Multiservice Switch 7400, 15000, 20000

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COMPONENT FrameRelayDte (FrDte)

Instance	Decimal (1..4294967295)
Groups	GROUP FrDte CustomerIdentifierData (CidData) GROUP FrDte IfEntryProv (IfEntry) GROUP FrDte Provisioned (Prov) GROUP FrDte OsiState (State) GROUP FrDte OperationalStatus (OperStatus) GROUP FrDte Operational (Oper) GROUP FrDte FrErrEntry (Err) GROUP FrDte ErrorStatistics (ErrStats)
Scope	Application
Description	*FrameRelayDte/n* The *FrameRelayDte* component defines the general parameters for implementing the Frame Relay DTE interface.
Mib	FrameRelayDte
Subcomponents	COMPONENT FrDte LinkManagementInterface (Lmi) COMPONENT FrDte RemoteGroup (Rg) COMPONENT FrDte DynamicDlciDefaults (DynDlciDefs)
Opt. Subcomp.	COMPONENT FrDte Framer COMPONENT FrDte StaticDlci (StDlci) COMPONENT FrDte LinkEmissionQueue (Leq) COMPONENT FrDte VirtualFramer (VFramer) COMPONENT FrDte DirectConnection (Dconn)
Dyn. Subcomp.	COMPONENT FrDte DataLinkConnectionIdentifier (Dlci)
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP FrDte CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayDte

ATTRIBUTE FrDte customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	FrameRelayDte
Values	Decimal (0; 1..8191)
Default	0

GROUP FrDte IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayDte

ATTRIBUTE FrDte ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayDte
Values	up down testing

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Default	up

ATTRIBUTE FrDte ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayDte
Values	Decimal (1..65535)
Default	No default

GROUP FrDte Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *FrDte* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte acceptUndefinedDlci (aud)

Access	Read and write
Description	This parameter allows previously undefined Data Link Connection Identifiers (DLCIs) to be dynamically accepted in the default remote group. If set to ***enabled***, undefined DLCIs will be accepted, if ***disabled***, they will not.
Mib	FrameRelayDte
Values	enabled disabled
Default	enabled

GROUP FrDte OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

ATTRIBUTE FrDte adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayDte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayDte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrDte usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — FrameRelayDte

Values
idle
active (activ)
busy

Default — idle

GROUP FrDte OperationalStatus (OperStatus)

Properties — Operational

Description — This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib — FrameRelayDte

ATTRIBUTE FrDte snmpOperStatus

Access — Read only

Description — The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib — FrameRelayDte

Values
up
down
testing

Default — up

GROUP FrDte Operational (Oper)

Properties — Operational

Description — This group contains the operational attributes for the *FrDte* component.

Mib — FrameRelayDte

ATTRIBUTE FrDte linkOperState (lstate)

Access — Read only

Description — This attribute describes the operational state of the Link Control protocol. If the interface to the physical link hardware is inactive, the *linkOperState* is in the ***down*** state.

The ***polling*** state only occurs when the Local Management Interface (LMI) is enabled and the physical link is active. The ***polling*** state indicates LMI is polling for its peer. Once communication is established the

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linkOperState will transition to the ***active*** state.

If the *procedure* attribute of the *Lmi* component is set to ***none***, *linkOperState* will transition to the ***active*** state once the physical link becomes active.

Mib	FrameRelayDte
Values	active down polling
Default	down

GROUP FrDte FrErrEntry (Err)

Properties	Operational
Description	This group contains the SNMP frErrEntry attributes for the *FrDte* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte errType (etype)

Access	Read only
Description	The type of error that was last seen on this interface. The error types are as follows: ***receiveShort***: This error indicates a received frame was discarded because it was less than four octets long or it was missing the Organizationally Unique Identifier (OUI) for a SNAP header. ***receiveLong***: This error indicates a received frame was discarded because it was longer than expected. This error is currently not used on this interface. ***illegalDlci***: This error indicates that a received frame was discarded because it's Q.922 address was not two octets in length. This error could also indicate that a frame was discarded because it was received on a DLCI reserved for LMI which had not been provisioned active. ***dlcmiProtoErr***: This error indicates an LMI frame was received with contents formatted incorrectly. ***dlcmiUnknownIe***: This error indicates that an LMI frame was received which contained an unsupported Information Element (IE) type ***dlcmiSequenceErr***: This error indicates that an LMI frame was received whose Keep Alive Sequence was incorrect. ***dlcmiUnknownRpt***: This error indicates that an LMI frame was received which contained a Report-type Information Element with an invalid type of

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report.

noErrorSinceReset: This error type indicates that there has not been an error since the interface has been reset.

unknownError: This error type contains the cumulation of receive frame errors that did not fit one of the MIB error descriptions above. These errors include those counted by the following attributes:

ulpUnknownProtocol - A received frame was discarded because the Upper Level Protocol (ULP) encapsulation used was unsupported.

badFc - A received frame was discarded because the frame control character was incorrect.

defragSequenceErrors - A fragment was received that was discarded due to an out of sequence error detection.

Mib	FrameRelayDte
Values	unknownError receiveShort receiveLong illegalDlci dlcmiProtoErr dlcmiUnknownIe dlcmiSequenceErr dlcmiUnknownRpt noErrorSinceReset
Default	noErrorSinceReset

ATTRIBUTE FrDte errData (edata)

Access	Read only
Description	An octet string containing the first part of the frame in which an error was last detected.
Mib	FrameRelayDte
Values	String (64, Hex)
Default	No default

ATTRIBUTE FrDte errTime (etime)

Access	Read only
Description	The time at which the last error was detected and recorded in *errType*.
Mib	FrameRelayDte
Values	Time (DHMS)
Default	No default

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ATTRIBUTE FrDte errDiscards (ed)

Access	Read only
Description	Number of inbound frames dropped because of format errors or because the virtual circuit was not known. Format errors, in this case, are any errors which would prevent the system from recognizing the DLCI and placing the error in the discard category. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte errFaults (ef)

Access	Read only
Description	This attribute counts the number of times LMI has taken down the interface. When the *procedure* attribute of the *Lmi* component is set to ***none***, this counter will not be incremented. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte errFaultTime (eftime)

Access	Read only
Description	The last time the *errFaults* counter was incremented.
Mib	FrameRelayDte
Values	Time (DHMS)
Default	No default

GROUP FrDte ErrorStatistics (ErrStats)

Properties	Operational
Description	This group contains error counters for the *FrDte*.
Mib	FrameRelayDte

ATTRIBUTE FrDte xmitDiscardPvcDown

Access	Read only
Description	This attribute counts the transmitted frames discarded because the DLCI of a component positioned in a hierarchical fashion above it (for example,

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	it's remote group or the *FrDte* component) was administratively disabled. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte xmitDiscardLmiInactive

Access	Read only
Description	Count of transmitted frames discarded because the Local Management Interface (LMI) was not yet active (i.e. LMI was still in the polling state). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte xmitDiscardFramerDown

Access	Read only
Description	Count of transmitted frames discarded because the *framer* component was down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte xmitDiscardPvcInactive

Access	Read only
Description	Count of transmitted frames discarded because the Local Management Interface (LMI) had inactivated or invalidated the DLCI. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte xmitDiscardCirExceeded

Access	Read only

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Description	Count of transmitted frames discarded because CIR was enabled on a DLCI without a *HibernationQueue* subcomponent and the traffic exceeded the combined Committed and Excess Burst thresholds. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte recvDiscardPvcDown

Access	Read only
Description	This attribute counts received frames discarded because the DLCI of a component positioned in a hierarchical fashion above it (for example its remote group or the *FrDte* component) was administratively disabled. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte recvDiscardLmiInactive

Access	Read only
Description	Count of received frames discarded because the Local Management Interface (LMI) was not yet active (i.e. LMI was still in the polling state). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte recvDiscardPvcInactive

Access	Read only
Description	Count of received frames discarded because the Local Management Interface (LMI) had inactivated or invalidated the DLCI. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrDte badFc

Access	Read only
Description	Count of received frames discarded because the frame control character was incorrect. This may indicate that the other side of the link is configured for a different link level protocol. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte ulpUnknownProtocol

Access	Read only
Description	Count of received frames discarded because the Upper Level Protocol (ULP) encapsulation used was unsupported. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte defragSequenceErrors

Access	Read only
Description	Count of fragments received which were discarded due to out of sequence error detection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte receiveShort

Access	Read only
Description	Count of received frames (including LMI frames) discarded because they were less than four octets long or they were missing the Organizationally Unique Identifier (OUI) for a SNAP header. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte illegalDlci

Access	Read only
Description	Count of received frames discarded because their Q.922 address was not two octets in length. This count also includes frames discarded because they were received on a DLCI reserved for LMI that had not been provisioned active. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte dlcmiProtoErr

Access	Read only
Description	Count of received LMI frames whose contents were formatted incorrectly. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte dlcmiUnknownIe

Access	Read only
Description	Count of received LMI frames which contained an unsupported Information Element (IE) type. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte dlcmiSequenceErr

Access	Read only
Description	Count of received LMI frames whose Keep Alive Sequence was incorrect. This counter will wrap around to 0 when it exceeds its maximum count.

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Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte dlcmiUnknownRpt

Access	Read only
Description	Count of received LMI frames which contained a Report-type Information Element with an invalid type of report. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrDte Framer

Groups	GROUP FrDte Framer Provisioned (Prov) GROUP FrDte Framer OsiState (State) GROUP FrDte Framer Statistics (Stats) GROUP FrDte Framer LinkUtilization (Util)
Scope	Application
Description	*FrDte/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisional attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisional attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface

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datapath statistics (such as frame counts and aborts).

Mib	FrameRelayDte
Common Verbs	Help List Display Add DELete

GROUP FrDte Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisional *Framer* groups.
Mib	FrameRelayDte

ATTRIBUTE FrDte Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayDte
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrDte Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

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ATTRIBUTE FrDte Framer **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayDte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte Framer **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayDte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrDte Framer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	FrameRelayDte
Values	idle active (activ) busy
Default	idle

GROUP FrDte Framer **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Framer **frmToIf**

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer **frmFromIf**

Access	Read only
Description	This attribute counts the number of frames received from the link interface by Framer.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer **aborts**

Access	Read only

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Description	This attribute counts the total number of aborts received.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred.
Mib	FrameRelayDte

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received which were too large. The frame exceeded the maximumFrameLengthLimit provisioned attribute or it contained more than the 255 block hardware limit.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal priority data sent to the link as a percentage of the available bandwidth on the link. The utilization is the average for the last minute.
Mib	FrameRelayDte
Values	Decimal (0..100)
Units	%
Default	0

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ATTRIBUTE FrDte Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal priority data received from the link as a percentage of the available bandwidth on the link. The utilization is the average for the last minute.
Mib	FrameRelayDte
Values	Decimal (0..100)
Units	%
Default	0

COMPONENT FrDte LinkManagementInterface (Lmi)

Groups	GROUP FrDte Lmi Provisioned (Prov) GROUP FrDte Lmi Operational (Oper)
Scope	Application
Description	*FrDte/n Lmi* This component defines parameters for implementing the Local Management Interface (LMI) protocol for the *FrDte* interface.
Mib	FrameRelayDte
Common Verbs	Help List Display

GROUP FrDte Lmi Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Lmi* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Lmi procedures (proc)

Access	Read and write
Description	This attribute selects the Local Management Interface (LMI) protocol to be used on the interface. This attribute is equivalent to the SNMP variable frDlcmiState. The ***vendorForum*** LMI protocol automatically implies that the DLCI used by the protocol is 1023. The ***ansi*** (T1.617 Annex D) and ***ccitt*** (Q.933 Annex A) LMI protocols use DLCI 0. If ***none*** is selected, no LMI procedures will run on the interface.
Mib	FrameRelayDte
Values	none vendorForum

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	ansi ccitt
Default	ccitt

ATTRIBUTE FrDte Lmi pollingInterval (polli)

Access	Read and write
Description	This is the number of seconds between successive status enquiry messages. This field corresponds to the parameter T391 described in the ANSI T1.617-1991 Annex D.
Mib	FrameRelayDte
Values	Decimal (5..30)
Units	seconds
Default	10

ATTRIBUTE FrDte Lmi fullEnquiryInterval (n391)

Access	Read and write
Description	The count of status polls before a full status enquiry message is issued. Every nth poll will request a full status. This field corresponds to the parameter N391 described in the ANSI T1.617-1991 Annex D.
Mib	FrameRelayDte
Values	Decimal (1..255)
Default	6

ATTRIBUTE FrDte Lmi errorThreshold (n392)

Access	Read and write
Description	The number of errors detected within the monitored events window before declaring the link non-functional. This field corresponds to the parameter N392 described in the ANSI T1.617-1991 Annex D.
Mib	FrameRelayDte
Values	Decimal (1..10)
Default	3

ATTRIBUTE FrDte Lmi monitoredEvents (n393)

Access	Read and write
Description	The number of status polling intervals over which the *errorThreshold* is counted This is used to determine if the *errorThreshold* is exceeded. This field corresponds to the parameter N393 described in the ANSI T1.617-1991 Annex D.
Mib	FrameRelayDte

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Values	Decimal (1..10)
Default	4

GROUP FrDte Lmi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Lmi* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Lmi lmiStatus

Access	Read only
Description	This indicates the status of the Frame Relay interface as determined by the performance of the link management interface (LMI). If no LMI is running, *lmiStatus* will stay in the ***running*** state indefinitely.
Mib	FrameRelayDte
Values	running fault initializing
Default	No default

COMPONENT FrDte RemoteGroup (Rg)

Instance	Decimal (1..256)
Groups	GROUP FrDte Rg IfEntryProv (IfEntry) GROUP FrDte Rg Provisioned (Prov) GROUP FrDte Rg MediaProv (Mp) GROUP FrDte Rg OsiState (State) GROUP FrDte Rg OperationalStatus (OperStatus)
Scope	Application
Description	*FrDte/n Rg/n* This component describes the links between a group of *Dlci*s and a Protocol Port.

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The *Rg/1* instance is required.

Mib	FrameRelayDte
Opt. Subcomp.	COMPONENT FrDte Rg BridgedFrameRouting (Bfr)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrDte Rg IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayDte
Values	up down testing
Default	up

ATTRIBUTE FrDte Rg ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayDte
Values	Decimal (1..65535)
Default	No default

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GROUP FrDte Rg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the Remote Group component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg maxTransmissionUnit (mtuSize)

Access	Read and write
Description	The Maximum Transmission Unit size of the largest datagram (including Frame Relay header) which can be sent on the interface.
Mib	FrameRelayDte
Values	Decimal (80..9190)
Units	octets
Default	1604

ATTRIBUTE FrDte Rg linkToFrDteDlci (ltDlci)

Access	Read and write
Description	This attribute associates a *Rg* component with zero or more *StDlci* components. The *Rg* and *StDlci* components must be under the same *FrDte* component.
Mib	FrameRelayDte
List of	Link (Service, linkToRemoteGroup)
List Size	256
Default	No default

GROUP FrDte Rg MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the Media Application component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	FrameRelayDte

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Values	Link (Service, linkToMedia)
Default	No default

GROUP FrDte Rg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayDte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte Rg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for

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operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — FrameRelayDte

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE FrDte Rg usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — FrameRelayDte

Values — idle
active (activ)
busy

Default — idle

GROUP FrDte Rg OperationalStatus (OperStatus)

Properties — Operational

Description — This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib — FrameRelayDte

ATTRIBUTE FrDte Rg snmpOperStatus

Access — Read only

Description — The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib — FrameRelayDte

Values — up
down
testing

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Default	up

COMPONENT FrDte Rg BridgedFrameRouting (Bfr)

Groups	GROUP FrDte Rg Bfr Provisioned (Prov) GROUP FrDte Rg Bfr Operational (Opr)
Scope	Application
Description	*FrDte/n Rg/n Bridged Frame Routing* The *BridgedFrameRouting* component defines the parameters for implementing the Bridged Frame Routing port.
Mib	FrameRelayDte
Common Verbs	Help List Display Add DELete

GROUP FrDte Rg Bfr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *Bfr* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg Bfr macType (macType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the MAC address type of the *Bfr* component. The value must be chosen based on the media of the traffic source. For traffic originated from FDDI, use ***fddi***; for Ethernet, use ***enet***; for Token Ring, use ***tokenRing***
Mib	FrameRelayDte
Values	fddi enet tokenRing
Default	enet

ATTRIBUTE FrDte Rg Bfr bfrIndex (index)

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Access	Read and write
Criticality	Process
Description	This attribute specifies the value which is used to derive a unique MAC address for the *Bfr*. The *bfrIndex* must be unique across all *Bfr*s on the same *Lp*.
Mib	FrameRelayDte
Values	Decimal (0..511)
Default	No default

GROUP FrDte Rg Bfr Operational (Opr)

Properties	Operational
Description	This group contains the operational attributes for the *Bfr* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg Bfr macAddr (macAddr)

Access	Read only
Description	This attribute indicates the unique MAC address of the *Bfr* component. This value is derived by the value of the attribute *bfrIndex.* The value is displayed in canonical format.
Mib	FrameRelayDte
Values	String (6, Dashed Hex)
Default	No default

COMPONENT FrDte DynamicDlciDefaults (DynDlciDefs)

Groups	GROUP FrDte DynDlciDefs Provisioned (Prov)
Scope	Application
Description	*FrDte/n DynDlciDefs* This component defines the default values that will be used when a *Dlci* of *creationType* ***dynamic*** is created.
Mib	FrameRelayDte
Common Verbs	Help List Display

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GROUP FrDte DynDlciDefs **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioned attributes for a virtual circuit. These attributes represent the default settings for the resulting *Dlci* components and can be operationally changed using the corresponding attributes under the *Dlci* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte DynDlciDefs **rowStatus**

Access	Read and write
Description	This attribute is used to manage the status of a *StDlci* component. Set to ***active*** to enable the *StDlci* component. Set to ***notInService*** to disable the *StDlci* component. Set to ***createAndGo*** (SNMP only) to create a new *StDlci* component. Set to ***destroy*** (SNMP only) to delete an existing *StDlci* component.
Mib	FrameRelayDte
Values	active notInService
Default	active

ATTRIBUTE FrDte DynDlciDefs **rateEnforcement (re)**

Access	Read and write
Description	This attribute specifies whether the CIR attributes *committedInformationRate*, *committedBurst*, and *excessBurst* are used to define rate enforcement on this user DLCI. If *rateEnforcement* is ***enabled***, and the combined Committed and Excess burst thresholds are exceeded, the frame in violation will be discarded immediately if a *HibernationQueue* subcomponent is not provisioned under the *StDlci* component. If a *HibernationQueue* is provisioned, the frame will be placed on the *HibernationQueue* at time of violation and transmission will be attempted later after the point at which the burst thresholds will no longer be exceeded. Setting all the CIR attributes to zero has the same affect as setting this attribute to ***disabled***.
Mib	FrameRelayDte
Values	enabled disabled
Default	disabled

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ATTRIBUTE FrDte DynDlciDefs **committedInformationRate (cir)**

Access	Read and write
Description	The average number of bits to be transferred per second over the DLCI to the DCE. When this attribute is set to zero, the link speed will be used instead.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrDte DynDlciDefs **committedBurst (bc)**

Access	Read and write
Description	The committed burst size (in bits) to which the DLCI wants to subscribe.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrDte DynDlciDefs **excessBurst (be)**

Access	Read and write
Description	The excess burst size (in bits) to which the DLCI wants to subscribe.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrDte DynDlciDefs **excessBurstAction (beAction)**

Access	Read and write
Description	This attribute specifies the action taken when the *committedBurst* size has been exceeded on the DLCI but the *excessBurst* size has not. If the attribute is set to ***setDeBit***, the Discard Eligibility bit in the Frame Relay header will be turned on. If the attribute is set to ***none***, no action will be taken.
Mib	FrameRelayDte
Values	none setDeBit

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Default	none

ATTRIBUTE FrDte DynDlciDefs ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component. Modifying this attribute will reset the Frame Relay connection. If the Frame Relay connection is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.
Mib	FrameRelayDte
Values	Decimal (0..3)
Default	0

COMPONENT FrDte StaticDlci (StDlci)

Instance	Decimal (16..1007)
Groups	GROUP FrDte StDlci Provisioned (Prov) GROUP FrDte StDlci RemoteGroupLink (RgLink) GROUP FrDte StDlci IpIfLink
Scope	Application
Description	*FrDte/n StDlci/n* This component is used to provision a static virtual circuit on the Frame Relay DTE interface. For each *StDlci* provisioned, there will be a matching *Dlci* component. *Dlci* components of *creationType* ***dynamic*** will be

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converted to ***static*** without disruption of service when a *StDlci* component is provisioned with the same instance number.

Mib	FrameRelayDte
Opt. Subcomp.	COMPONENT FrDte StDlci HibernationQueue (Hq)
Common Verbs	Help List Display Add DELete

GROUP FrDte StDlci Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for a virtual circuit. These attributes represent the default settings for the resulting *Dlci* components and can be operationally changed using the corresponding attributes under the *Dlci* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte StDlci rowStatus

Access	Read and write
Description	This attribute is used to manage the status of a *StDlci* component. Set to ***active*** to enable the *StDlci* component. Set to ***notInService*** to disable the *StDlci* component. Set to ***createAndGo*** (SNMP only) to create a new *StDlci* component. Set to ***destroy*** (SNMP only) to delete an existing *StDlci* component.
Mib	FrameRelayDte
Values	active notInService
Default	active

ATTRIBUTE FrDte StDlci rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether the CIR attributes *committedInformationRate*, *committedBurst*, and *excessBurst* are used to define rate enforcement on this user DLCI. If *rateEnforcement* is ***enabled***, and the combined Committed and Excess burst thresholds are exceeded, the frame in violation will be discarded immediately if a *HibernationQueue* subcomponent is not provisioned under the *StDlci* component. If a *HibernationQueue* is provisioned, the

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	frame will be placed on the *HibernationQueue* at time of violation and transmission will be attempted later after the point at which the burst thresholds will no longer be exceeded. Setting all the CIR attributes to zero has the same affect as setting this attribute to ***disabled***.
Mib	FrameRelayDte
Values	enabled disabled
Default	disabled

ATTRIBUTE FrDte StDlci committedInformationRate (cir)

Access	Read and write
Description	The average number of bits to be transferred per second over the DLCI to the DCE. When this attribute is set to zero, the link speed will be used instead.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrDte StDlci committedBurst (bc)

Access	Read and write
Description	The committed burst size (in bits) to which the DLCI wants to subscribe.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrDte StDlci excessBurst (be)

Access	Read and write
Description	The excess burst size (in bits) to which the DLCI wants to subscribe.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bits
Default	0

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ATTRIBUTE FrDte StDlci excessBurstAction (beAction)

Access	Read and write
Description	This attribute specifies the action taken when the *committedBurst* size has been exceeded on the DLCI but the *excessBurst* size has not. If the attribute is set to ***setDeBit***, the Discard Eligibility bit in the Frame Relay header will be turned on. If the attribute is set to ***none***, no action will be taken.
Mib	FrameRelayDte
Values	none setDeBit
Default	none

ATTRIBUTE FrDte StDlci ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component. Modifying this attribute will reset the Frame Relay connection. If the Frame Relay connection is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.
Mib	FrameRelayDte
Values	Decimal (0..3)
Default	0

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GROUP FrDte StDlci RemoteGroupLink (RgLink)

Properties	Provisioned
Description	This group provides the link between a *Dlci* and a *remoteGroup*.
Mib	FrameRelayDte

ATTRIBUTE FrDte StDlci linkToRemoteGroup (ltrg)

Access	Read and write
Criticality	Component
Description	This attribute associates a *StDlci* component with a *Rg* component. Provisioned *StDlci* components must be linked to a *Rg* component which is under the same *FrDte* component.
Mib	FrameRelayDte
Values	Link (Service, linkToFrDteDlci)
Default	No default

GROUP FrDte StDlci IpIfLink

Properties	Provisioned
Description	This group contains the link between this component and an *IpLogicalInterface* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte StDlci linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. When set, the value of this attribute must be consistent with the *linkToProtocolPort* attribute value of the associated *RemoteGroup* component. That is, they must both point to the same *ProtocolPort* component.
Mib	FrameRelayDte
Values	Link (Service, linkToMediaConnection)
Default	No default

COMPONENT FrDte StDlci HibernationQueue (Hq)

Groups	GROUP FrDte StDlci Hq Provisioned (Prov) GROUP FrDte StDlci Hq Statistics (Stats) GROUP FrDte StDlci Hq TotalStatistics (TStats) GROUP FrDte StDlci Hq CurrentStatistics (CStats) GROUP FrDte StDlci Hq ThresholdStatistics (ThrStats)

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Scope	Application
Description	*FrDte/n StDlci/n Hq* This component provides a Hibernation Queue capability for a *Dlci* component which has been provisioned with CIR enforcement enabled. The *HibernationQueue* provides priority placement of frames on the queue, Time To Live (TTL) discarding of frames from the queue, and queue statistics.
Mib	FrameRelayDteExt
Common Verbs	Help List Display Add DELete

GROUP FrDte StDlci Hq Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Link Emission Queue provisioned attributes.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq maxPackets (maxP)

Access	Read and write
Description	This attribute specifies the maximum number of packets allowed in the *Leq* before being discarded. If this attribute is set to zero then the maximum number of packets is calculated from the transmit data rate. This calculated value is placed in *queuePktThreshold*.
Mib	FrameRelayDteExt
Values	Decimal (0..2048)
Default	0

ATTRIBUTE FrDte StDlci Hq maxMsecData (maxData)

Access	Read and write
Description	This attribute specifies the maximum number of “Milliseconds worth of data” allowed in the *Leq* before packets are discarded. The *queueByteThreshold* will be calculated from this attribute, based on the transmit data rate.
Mib	FrameRelayDteExt
Values	Decimal (100..60000)
Default	10000

ATTRIBUTE FrDte StDlci Hq maxPercentMulticast (mpm)

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Access	Read and write
Description	This attribute specifies the maximum percentage of multicast packets allowed in the *Leq,* based on *queuePktThreshold*, before being discarded. The calculated value will be placed in *queueMulticastThreshold*.
Mib	FrameRelayDteExt
Values	Decimal (1..100)
Default	50

ATTRIBUTE FrDte StDlci Hq timeToLive (ttl)

Access	Read and write
Description	This attribute specifies the “Milliseconds Time To Live” of packets in the *Leq*. If the *timeToLive* of a packet expires, it will be discarded.
Mib	FrameRelayDteExt
Values	Decimal (100..60000)
Units	msec
Default	10000

GROUP FrDte StDlci Hq Statistics (Stats)

Properties	Operational
Description	This group contains *HibernationQueue* general statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq timedOutPkt (topkt)

Access	Read only
Description	This attribute counts the number of packets that have been discarded due to exceeding the *timeToLive*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq queuePurgeDiscards (qpd)

Access	Read only
Description	This attribute counts the total number of packets discarded by a queue purge which occurs when the *Dlci* goes down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt

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Values	Decimal (0..4294967295)
Default	0

GROUP FrDte StDlci Hq TotalStatistics (TStats)

Properties	Operational
Description	This group contains Link Emission Queue total statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq totalPktHandled (tpkthand)

Access	Read only
Description	This attribute counts the total number of packets handled by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq totalPktForwarded (tpktfor)

Access	Read only
Description	This attribute counts the total number of packets forwarded by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq totalPktQueued (tpktq)

Access	Read only
Description	This attribute counts the total number of packets that required queuing by the *Leq* due to transmit congestion. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq totalMulticastPkt (tmulp)

Access	Read only
Description	This attribute counts the total number of multicast packets handled by this instance of *FrDte*. This counter will wrap around to 0 when it exceeds its maximum count.

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Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq totalPktDiscards (tpktdis)

Access	Read only
Description	This attribute counts the total number of packets that were discarded for this instance of *FrDte*. This is the sum of *timedOutPkt*, *forcedPktDiscards*, *queuePurgeDiscards*, *pktThresholdExceeded*, *byteThresholdExceeded*, *mulThresholdExceeded* and *memThresholdExceeded*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte StDlci Hq CurrentStatistics (CStats)

Properties	Operational
Description	This group contains Link Emission Queue current statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq currentPktQueued (cpktq)

Access	Read only
Description	This attribute contains the current number of packets queued.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq currentBytesQueued (cbytesq)

Access	Read only
Description	This attribute contains the current number of bytes queued.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq currentMulticastQueued (cmulq)

Access	Read only
Description	This attribute counts the current number of multicast packets in the queue.

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Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte StDlci Hq ThresholdStatistics (ThrStats)

Properties	Operational
Description	This group contains Link Emission Queue threshold statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq queuePktThreshold (qpthr)

Access	Read only
Description	This attribute is the maximum number of packets that can be contained in the queue before being discarded. If *maxPackets* was set to 0 then this attribute will contain the value that has been calculated based on the transmit data rate. If *maxPackets* was set to one or more than this attribute will contain that number.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq pktThresholdExceeded (pthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queuePktThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq queueByteThreshold (qbytethr)

Access	Read only
Description	This attribute is the maximum number of bytes allowed in the queue based on *maxMsecData* and the transmit data rate.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq byteThresholdExceeded (bthrx)

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Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueByteThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq queueMulticastThreshold (qmolthr)

Access	Read only
Description	This attribute is the number of multicast packets allowed in the queue based on *maxPercentMulticast* and *maxPackets*.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq mulThresholdExceeded (multhrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueMulticastThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq memThresholdExceeded (memthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to exceeding the memory usage threshold for *Leq*. The memory usage threshold is determined by the *Leq* software, guaranteeing that the *Leq* does not consume all of the memory. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrDte LinkEmissionQueue (Leq)

Groups	GROUP FrDte Leq Provisioned (Prov) GROUP FrDte Leq Statistics (Stats)

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GROUP FrDte Leq TotalStatistics (TStats)
GROUP FrDte Leq CurrentStatistics (CStats)
GROUP FrDte Leq ThresholdStatistics (ThrStats)

Scope	Application
Description	*FrDte/n Leq* This component provides a means of statistics gathering and packet discard.
Mib	FrameRelayDteExt
Common Verbs	Help List Display Add DELete

GROUP FrDte Leq Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Link Emission Queue provisioned attributes.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq maxPackets (maxP)

Access	Read and write
Description	This attribute specifies the maximum number of packets allowed in the *Leq* before being discarded. If this attribute is set to zero then the maximum number of packets is calculated from the transmit data rate. This calculated value is placed in *queuePktThreshold*.
Mib	FrameRelayDteExt
Values	Decimal (0..2048)
Default	0

ATTRIBUTE FrDte Leq maxMsecData (maxData)

Access	Read and write
Description	This attribute specifies the maximum number of “Milliseconds worth of data” allowed in the *Leq* before packets are discarded. The *queueByteThreshold* will be calculated from this attribute, based on the transmit data rate.
Mib	FrameRelayDteExt
Values	Decimal (100..60000)
Default	10000

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ATTRIBUTE FrDte Leq maxPercentMulticast (mpm)

Access	Read and write
Description	This attribute specifies the maximum percentage of multicast packets allowed in the *Leq,* based on *queuePktThreshold*, before being discarded. The calculated value will be placed in *queueMulticastThreshold*.
Mib	FrameRelayDteExt
Values	Decimal (1..100)
Default	50

ATTRIBUTE FrDte Leq timeToLive (ttl)

Access	Read and write
Description	This attribute specifies the “Milliseconds Time To Live” of packets in the *Leq*. If the *timeToLive* of a packet expires, it will be discarded.
Mib	FrameRelayDteExt
Values	Decimal (100..60000)
Units	msec
Default	10000

GROUP FrDte Leq Statistics (Stats)

Properties	Operational
Description	This group contains Link Emission Queue general statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq timedOutPkt (topkt)

Access	Read only
Description	This attribute counts the number of packets that have been discarded due to exceeding the *timeToLive*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq hardwareForcedPkt (hfpkt)

Access	Read only
Description	This attribute counts the number of hardware forced packets on this instance of *FrDte*. This counter will wrap around to 0 when it exceeds its maximum count.

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Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq forcedPktDiscards (fpktd)

Access	Read only
Description	This attribute counts the total number of hardware forced packets that had to be discarded due to link failure. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq queuePurgeDiscards (qpd)

Access	Read only
Description	This attribute counts the total number of packets discarded by a queue purge (i.e. a discarding of all packets on the queue). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte Leq TotalStatistics (TStats)

Properties	Operational
Description	This group contains Link Emission Queue total statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq totalPktHandled (tpkthand)

Access	Read only
Description	This attribute counts the total number of packets handled by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq totalPktForwarded (tpktfor)

Access	Read only

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Description	This attribute counts the total number of packets forwarded by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq totalPktQueued (tpktq)

Access	Read only
Description	This attribute counts the total number of packets that required queuing by the *Leq* due to transmit congestion. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq totalMulticastPkt (tmulp)

Access	Read only
Description	This attribute counts the total number of multicast packets handled by this instance of *FrDte*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq totalPktDiscards (tpktdis)

Access	Read only
Description	This attribute counts the total number of packets that were discarded for this instance of *FrDte*. This is the sum of *timedOutPkt*, *forcedPktDiscards*, *queuePurgeDiscards*, *pktThresholdExceeded*, *byteThresholdExceeded*, *mulThresholdExceeded* and *memThresholdExceeded*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte Leq CurrentStatistics (CStats)

Properties	Operational
Description	This group contains Link Emission Queue current statistics.

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Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq currentPktQueued (cpktq)

Access	Read only
Description	This attribute contains the current number of packets queued.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq currentBytesQueued (cbytesq)

Access	Read only
Description	This attribute contains the current number of bytes queued.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq currentMulticastQueued (cmulq)

Access	Read only
Description	This attribute counts the current number of multicast packets in the queue.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte Leq ThresholdStatistics (ThrStats)

Properties	Operational
Description	This group contains Link Emission Queue threshold statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq queuePktThreshold (qpthr)

Access	Read only
Description	This attribute is the maximum number of packets that can be contained in the queue before being discarded. If *maxPackets* was set to 0 then this attribute will contain the value that has been calculated based on the transmit data rate. If *maxPackets* was set to one or more than this attribute will contain that number.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrDte Leq pktThresholdExceeded (pthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queuePktThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq queueByteThreshold (qbytethr)

Access	Read only
Description	This attribute is the maximum number of bytes allowed in the queue based on *maxMsecData* and the transmit data rate.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq byteThresholdExceeded (bthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueByteThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq queueMulticastThreshold (qmolthr)

Access	Read only
Description	This attribute is the number of multicast packets allowed in the queue based on *maxPercentMulticast* and *maxPackets*.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq mulThresholdExceeded (multhrx)

Access	Read only

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Description	This attribute counts the number of packets discarded due to the *queueMulticastThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq memThresholdExceeded (memthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to exceeding the memory usage threshold for *Leq*. The memory usage threshold is determined by the *Leq* software, guaranteeing that the *Leq* does not consume all of the memory. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrDte DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (0..1023)
Groups	GROUP FrDte Dlci OsiState (State) GROUP FrDte Dlci Operational (Oper)
Scope	Application
Description	*FrDte/n Dlci/n* This component provides access to both static and dynamic virtual circuit instances.
Mib	FrameRelayDte
Common Verbs	Help List Display LOCK Unlock

VERB Clear FrDte Dlci

Impact	Service
Description	*Clear FrDte/n Dlci/n* The *Clear* verb allows the user the ability to delete a *Dlci* component of *creationType* ***dynamic***.

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GROUP FrDte Dlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

ATTRIBUTE FrDte Dlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayDte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte Dlci operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	FrameRelayDte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrDte Dlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayDte
Values	idle active (activ) busy
Default	idle

GROUP FrDte Dlci Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Dlci* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Dlci dlciState

Access	Read only
Description	This attribute reflects the current operational circuit state of the *Dlci*. The state ***active*** indicates that the circuit is up and ***inactive*** that the circuit is down. The state ***invalid*** means the circuit has been deleted by the DCE (via *Lmi*).
Mib	FrameRelayDte
Values	invalid active inactive
Default	inactive

ATTRIBUTE FrDte Dlci lastTimeChange

Access	Read only

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Description	The last time *dlciState* changed state.
Mib	FrameRelayDte
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrDte Dlci sentFrames

Access	Read only
Description	Number of frames transmitted across the interface. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci sentOctets

Access	Read only
Description	The number of octets sent from this virtual circuit since it was created. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci receivedFrames (recvFrames)

Access	Read only
Description	Number of frames received across the interface. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci receivedOctets (recvOctets)

Access	Read only
Description	The number of octets sent from this virtual circuit since it was created. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrDte Dlci receivedFECNs (recvFecn)

Access	Read only
Description	Number of frames with the FECN bit set received from the network. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci receivedBECNs (recvBecn)

Access	Read only
Description	Number of frames with the BECN bit set received from the network. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci discardedFrames (discards)

Access	Read only
Description	The number of inbound frames dropped because of format errors, or because the VC was inactive. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci creationType (type)

Access	Read only
Description	This indicates whether the virtual circuit was manually created (static), or dynamically created (dynamic) via the data link control management interface.
Mib	FrameRelayDte
Values	static dynamic
Default	No default

ATTRIBUTE FrDte Dlci creationTime

Access	Read only

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Description	The time when the circuit was created, whether by the Data Link Connection Management Interface or by an SNMP set request.
Mib	FrameRelayDte
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrDte Dlci rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether the CIR attributes *committedInformationRate*, *committedBurst*, and *excessBurst* are used to define rate enforcement on this user DLCI. If *rateEnforcement* is ***enabled***, and the combined Committed and Excess burst thresholds are exceeded, the frame in violation will be discarded immediately if a *HibernationQueue* subcomponent is not provisioned under the *StDlci* component (static entries only). If a *HibernationQueue* is provisioned, the frame will be placed on the *HibernationQueue* at time of violation and transmission will be attempted later after the point at which the burst thresholds will no longer be exceeded. Setting all the CIR attributes to zero has the same affect as setting this attribute to ***disabled***. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	enabled disabled
Default	disabled

ATTRIBUTE FrDte Dlci committedInformationRate (cir)

Access	Read and write
Description	The average number of bits to be transferred per second over the DLCI to the DCE. When this attribute is set to zero, the link speed will be used instead. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	Decimal (0..48000000)
Units	bit/s
Default	64000

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ATTRIBUTE FrDte Dlci committedBurst (bc)

Access	Read and write
Description	The committed burst size (in bits) to which the DLCI wants to subscribe. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	Decimal (0..2048000)
Units	bits
Default	64000

ATTRIBUTE FrDte Dlci excessBurst (be)

Access	Read and write
Description	The excess burst size (in bits) to which the DLCI wants to subscribe. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	Decimal (0..2048000)
Units	bits
Default	0

ATTRIBUTE FrDte Dlci excessBurstAction (beAction)

Access	Read and write
Description	This attribute specifies the action taken when the *committedBurst* size has been exceeded on the *Dlci* but the *excessBurst* size has not. If the attribute is set to ***setDeBit***, the Discard Eligibility bit in the Frame Relay header will be turned on. If the attribute is set to ***none***, no action will be taken. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	none setDeBit
Default	none

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COMPONENT FrDte VirtualFramer (VFramer)

Groups	GROUP FrDte VFramer Provisioned (Prov) GROUP FrDte VFramer OsiState (State) GROUP FrDte VFramer Statistics (Stats)
Scope	Application
Description	*FrUni/n VirtualFramer* *FrDte/n VirtualFramer* The *VirtualFramer* component binds two services together to provide data transfer between them. It is mutually exclusive from *Framer* component.
Mib	FrameRelayDte
Common Verbs	Help List Display Add DELete

GROUP FrDte VFramer Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *VirtualFramer* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte VFramer otherVirtualFramer (ovf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the other *VirtualFramer* to which the service is linked, for example, *FrUni/n VirtualFramer*, *FrDte/n VirtualFramer.*
Mib	FrameRelayDte
Values	Link (Service, otherVirtualFramer)
Default	No default

ATTRIBUTE FrDte VFramer logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the service component will reside.
Mib	FrameRelayDte
Values	Link (Hardware, linkToApplications)

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Default	No default

GROUP FrDte VFramer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

ATTRIBUTE FrDte VFramer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayDte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte VFramer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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	with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayDte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrDte VFramer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayDte
Values	idle active (activ) busy
Default	idle

GROUP FrDte VFramer **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics data for a *VirtualFramer* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte VFramer **frmToOtherVFramer**

Access	Read only
Description	This attribute counts the frames transmitted to the *otherVirtualFramer*.
Mib	FrameRelayDte
Values	Long Integer
Default	No default

ATTRIBUTE FrDte VFramer **frmFromOtherVFramer**

Access	Read only
Description	This attribute counts the frames received from the *otherVirtualFramer*.

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Mib	FrameRelayDte
Values	Long Integer
Default	No default

ATTRIBUTE FrDte VFramer octetFromOtherVFramer

Access	Read only
Description	This attribute counts the octets received from the *otherVirtualFramer*.
Mib	FrameRelayDte
Values	Long Integer
Default	No default

ATTRIBUTE FrDte VFramer discFrmFromOtherVFramer (discFrmFromOvf)

Access	Read only
Description	This attribute counts the discarded frames from the *otherVirtualFramer*. Incrementing of this counter indicates that some incoming traffic cannot be handled by the FP.
Mib	FrameRelayDte
Values	Long Integer
Default	No default

COMPONENT FrDte DirectConnection (Dconn)

Groups	GROUP FrDte Dconn DirectFrUniConnData (DirData)
Scope	Application
Description	*FrDte/n DirectConnection* This component defines the parameter for implementing the IP over Frame Relay Direct Connection for the *FrameRelayDte* interface. The Direct Connection is only supported on the Nortel Networks Multiservice Switch 7000 MSA32 cards as well as the Nortel Networks Multiservice Switch 15000 4-port DS3 Channelised and 1-port STM1 Channelised cards. Before a Direct Connection can be established, the provisioning check for this component validates that the following conditions are present: - *FrameRelayDte* (*FrDte*) is provisioned with a Virtual Framer. - *FrameRelayUni* (*FrUni*) to which the Direct Connection will be establish is provisioned with a Framer. - *FrDte* and *FrUni* link by the Direct Connection are on the same. Logical Processor, and they are provisioned on a Nortel Networks Multiservice Switch 7000 MSA card. - accounting on the *FrUni* connected to the *FrDte* via the Virtual Framer is set to **off**.

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- *Lmi* on the *FrUni* and *FrDte* connected via the Virtual Framer is off.
- all *Dlci*'s instances on the *FrUni*'s in the IP over Frame Relay setup match, and the provisioned PVC's do not connect to any other *FrUni* than the *FrUni*'s in IP over Frame Relay setup.

Mib	FrameRelayDte
Common Verbs	Help List Display Add DELete

GROUP FrDte Dconn DirectFrUniConnData (DirData)

Properties	Provisioned
Description	This group contains the provisioned attribute for the *FrameRelayDte DirectConnection* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Dconn directFrUniConnection (direct)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *FrameRelayUni* to which the *FrameRelayDte* will extablish a Direct Connection to.
Mib	FrameRelayDte
Values	Link (Service, directFrDteConnection)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrDte

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrIpServ

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COMPONENT FrameRelayIpServer (FrIpServer)

Instance	Decimal (1..1024)
Groups	GROUP FrIpServer CustomerIdentifierData (CidData) GROUP FrIpServer IfEntryProv (IfEntry) GROUP FrIpServer Provisioned (Prov) GROUP FrIpServer Operational (Oper) GROUP FrIpServer OperationalStatus (OperStatus) GROUP FrIpServer OsiState (State)
Scope	Application
Description	*FrameRelayIpServer/n* This component represents a server that distributes traffic between an IP protocol port and multiple Frame Relay interfaces. The *FrIpServer* receives all datagrams destined for the subnet specified at the *ProtocolPort* and forwards each to the appropriate Frame Relay interface. An instance of this component should be provisioned for each *LogicalProcessor* having BNX DLCIs and for each subnet on which BNX DLCIs are located.
Mib	FrameRelayIp
Dyn. Subcomp.	COMPONENT FrIpServer IpAddress (IpAddr)
Common Verbs	Help List Display Add DELete

GROUP FrIpServer CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayIp

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ATTRIBUTE FrIpServer customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	FrameRelayIp
Values	Decimal (0; 1..8191)
Default	0

GROUP FrIpServer IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayIp
Values	up down testing
Default	up

ATTRIBUTE FrIpServer ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

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Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayIp
Values	Decimal (1..65535)
Default	No default

GROUP FrIpServer Provisioned (Prov)

Properties	Provisioned
Description	This group contains all attributes that can be provisioned to define a *FrIpServer* instance.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *LogicalProcessor* where the *FrIpServer* is located.
Mib	FrameRelayIp
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE FrIpServer linkToProtocolPort (lToPp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which the *FrIpServer* instance is linked. The *ProtocolPort* must have only an *IpPort* subcomponent which has exactly one logical interface.
Mib	FrameRelayIp
Values	Link (Service, linkToMedia)
Default	No default

GROUP FrIpServer Operational (Oper)

Properties	Operational
Description	This group contains operational attributes specific to the *FrIpServer* component.
Mib	FrameRelayIp

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ATTRIBUTE FrIpServer datagramsFromPp (dataFrPP)

Access	Read only
Description	This attribute counts the datagrams received from the *ProtocolPort*, including those counted in *unknownIpAddrErr*. Counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayIp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrIpServer lastUnknownIpAddress (lastUnkwnAddr)

Access	Read only
Description	This attribute indicates the destination IP address of the last datagram that was dropped because none of the interfaces specified in *linkToFrameRelayApps* have a matching IP address.
Mib	FrameRelayIp
Values	IP address
Default	No default

ATTRIBUTE FrIpServer unknownIpAddressErr (unkwnAddrErr)

Access	Read only
Description	This attribute counts the datagrams dropped by the *FrIpServer* because none of the interfaces specified in *linkToFrameRelayApps* have a matching IP address. The destination address from most recent dropped datagram is counted and saved in *lastUnknownIpAddress*. Counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayIp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrIpServer invalidIpHeaderVersion (iiphv)

Access	Read only
Description	This attribute counts the datagrams dropped because the version in IP header was invalid.
Mib	FrameRelayIp
Values	Decimal (0..429496729)
Default	0

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GROUP FrIpServer OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayIp
Values	up down testing
Default	up

GROUP FrIpServer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayIp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrIpServer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayIp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrIpServer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayIp
Values	idle active (activ) busy
Default	idle

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COMPONENT FrIpServer IpAddress (IpAddr)

Instance	IP address
Groups	GROUP FrIpServer IpAddr Operational (Oper)
Scope	Application
Description	*FrIpServer/n IpAddress/<IP Address>* This component represents the IP address of the Frame Relay interfaces that are connected to the parent *FrIpServer*. It is a dynamic component used for informational purposes only.
Mib	FrameRelayIp
Common Verbs	Help List Display

GROUP FrIpServer IpAddr Operational (Oper)

Properties	Operational
Description	This group contains all *IpAddress* attributes.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer IpAddr hostApplication (host)

Access	Read only
Description	This attribute indicates the component name of the Frame Relay interface with the IP Address specified by the index of the *IpAddress* component.
Mib	FrameRelayIp
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrIpServ

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COMPONENT FrMux

Instance	Decimal (1..65535)
Groups	GROUP FrMux OperationalStatus (OperStatus) GROUP FrMux IfEntryProv (IfEntry) GROUP FrMux CustomerIdentifierData (CidData) GROUP FrMux OsiState (State) GROUP FrMux Statistics (Stats)
Scope	Application
Description	*FrMux/n* This component defines an instance of the Frame Relay Multiplexer/ Demultiplexer used by the *DpnGateway* as a frame relay transport mechanism. The component instance value n is a unique positive integer within a module.
Mib	FrameRelayMux
Subcomponents	COMPONENT FrMux Framer COMPONENT FrMux LocalManagementInterface (Lmi)
Opt. Subcomp.	COMPONENT FrMux DataLinkConnectionIdentifier (Dlci)
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK FrMux

Impact	Service
Description	*Lock [-force] [-forever] frMux*. This verb locks the frMux. If option [-forever] is present, then the locked state lasts forever and can only be terminated by a respective Unlock command. Without option [-forever] the service returns automatically to the unlocked state after five minutes. The option [-force] is accepted, but not acted upon; the effect of the Lock command with this option is the same as without this option.

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GROUP FrMux OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayMux

ATTRIBUTE FrMux snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayMux
Values	up down testing
Default	up

GROUP FrMux IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayMux

ATTRIBUTE FrMux ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayMux
Values	up down testing
Default	up

ATTRIBUTE FrMux ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

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Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayMux
Values	Decimal (1..65535)
Default	No default

GROUP FrMux CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayMux

ATTRIBUTE FrMux customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	FrameRelayMux
Values	Decimal (0; 1..8191)
Default	0

GROUP FrMux OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	FrameRelayMux

ATTRIBUTE FrMux adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayMux
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrMux operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayMux
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE FrMux usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayMux
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrMux availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

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The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	FrameRelayMux
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrMux proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform

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its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — FrameRelayMux

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE FrMux controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	FrameRelayMux
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrMux alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	FrameRelayMux
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE FrMux standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	FrameRelayMux
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrMux unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayMux
Values	false true
Default	false

GROUP FrMux Statistics (Stats)

Properties	Operational
Description	This group contains the statistics about the operational behavior of the *FrMux* at the interface level.
Mib	FrameRelayMux

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ATTRIBUTE FrMux lastUnknownDlci (ludlc)

Access	Read only
Description	This attribute identifies the most recent DLCI which user frames were received on, for which a *Dlci* has not been provisioned on the interface.
Mib	FrameRelayMux
Values	Decimal (0..1023)
Default	0

ATTRIBUTE FrMux unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute counts frames received from the interface with an unknown DLCI (*Dlci* which is not provisioned). When the maximum is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux timeFramerCongested (timeCong)

Access	Read only
Description	This attribute accumulates the time (in msec) during which *Framer* congestion has been observed in the direction towards the interface. The overload causing this statistic to increase may be caused by oversubscription. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Units	msec

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Default 0

COMPONENT FrMux Framer

Groups
GROUP FrMux Framer Provisioned (Prov)
GROUP FrMux Framer LinkOptions (Link)
GROUP FrMux Framer OsiState (State)
GROUP FrMux Framer Statistics (Stats)
GROUP FrMux Framer LinkUtilization (Util)

COLLECTED STATS FrMux Framer

Scope Application

Description
FrUni/n Framer
FrNni/n Framer
FrAtm/n Framer
This component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib FrameRelayMux

Common Verbs
Help
List
Display

GROUP FrMux Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib FrameRelayMux

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ATTRIBUTE FrMux Framer **interfaceName**

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayMux
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrMux Framer **LinkOptions (Link)**

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	FrameRelayMux

ATTRIBUTE FrMux Framer **dataInversion**

Access	Read and write
Description	This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed. This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density. Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted. This attribute may only take its default value for non-MSA cards.
Mib	FrameRelayMux
Values	off on
Default	off

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ATTRIBUTE FrMux Framer frameCrcType

Access	Read and write
Description	This attribute defines the type of CRC used. The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used. This attribute may take only its default value for non-MSA cards.
Mib	FrameRelayMux
Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE FrMux Framer flagsBetweenFrames

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.
Mib	FrameRelayMux
Values	Decimal (1..16)
Default	1

GROUP FrMux Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayMux

ATTRIBUTE FrMux Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — FrameRelayMux

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE FrMux Framer operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — FrameRelayMux

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE FrMux Framer usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	FrameRelayMux
Values	idle active (activ) busy
Default	idle

GROUP FrMux Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayMux

ATTRIBUTE FrMux Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrMux Framer nonOctetErrors

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer overruns

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer underruns

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer largeFrmErrors

Access	Read only
Description	This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer frmModeErrors

Access	Read only

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Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	FrameRelayMux

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Values	Decimal (0..4294967295)
Default	0

GROUP FrMux Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayMux

ATTRIBUTE FrMux Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayMux
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE FrMux Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayMux
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS FrMux Framer

Description	The statistics record generated by the FrMux Framer component.

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ATTRIBUTE FrMux Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE FrMux Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE FrMux Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE FrMux Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE FrMux Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COMPONENT FrMux LocalManagementInterface (Lmi)

Groups — GROUP FrMux Lmi Provisioned (Prov)
GROUP FrMux Lmi OsiState (State)
GROUP FrMux Lmi ProtocolStatusInfo (Psi)
GROUP FrMux Lmi Statistics (Stats)

Scope — Application

Description — *FrMux/n Lmi*
This component defines the parameters for implementing the Local Management Interface protocol.

Mib — FrameRelayMux

Common Verbs — Help
List
Display

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GROUP FrMux Lmi Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Local Management Interface component of the *FrMux.* The Local Management Interface of the *FrMux* is always User Side Procedure of the User Network Interface (USP-UNI).
Mib	FrameRelayMux

ATTRIBUTE FrMux Lmi procedures (proc)

Access	Read and write
Criticality	Process
Description	This attribute selects the procedures to be used for the Local Management Interface. The following are the supported procedures: ***none***: No Local Management Interface procedure is active. ***vendorForum***:Local Management Interface procedure according to the Vendor Forum specification is active. DLCI 1023 is used for the LMI protocol. ***ansi***: Local Management Interface procedure according to the ANSI specification is active. DLCI 0 is used for the LMI protocol. ***ccitt***: Local Management Interface procedure according to the CCITT specification is active. DLCI 0 is used for the LMI protocol.
Mib	FrameRelayMux
Values	none vendorForum ansi ccitt
Default	ccitt

ATTRIBUTE FrMux Lmi linkVerificationTimer (t391)

Access	Read and write
Description	This attribute specifies the time interval (in seconds) at which the *FrMux* sends Status Enquiry messages to the interface. Exchange of Status Enquiry and Status Report messages constitutes a polling cycle, so this attribute may also be interpreted as time interval at which the *FrMux* initiates polling cycles. It must be less than *checkPointTimer (t392)* configured at the other end of the Frame Relay interface. This attribute corresponds to t391 of the ANSI and CCITT specifications, and nT1 of the Vendor Forum specification.
Mib	FrameRelayMux
Values	Decimal (5; 10; 15; 20; 25; 30)

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Units	seconds
Default	10

ATTRIBUTE FrMux Lmi fullStatusPollingCycles (n391)

Access	Read and write
Description	This attribute specifies every which polling cycle the *FrMux* sends a full STATUS ENQUIRY to the interface. Every *fullStatusPollingCycles* polling cycles the *FrMux* sends a full STATUS ENQUIRY. In all other cycles of a sequence of *fullStatusPollingCycles* polling cycles the *FrMux* sends a keep alive STATUS ENQUIRY. This attribute corresponds to n391 of the ANSI and CCITT specifications and nN1 of the Vendor Forum specification.
Mib	FrameRelayMux
Values	Decimal (1..255)
Default	6

ATTRIBUTE FrMux Lmi errorEventThreshold (n392)

Access	Read and write
Description	This attribute specifies the number of error events which, if they occur within *eventCount* events, will cause a protocol error condition (*protocolStatus* = ***errorCondition***). The error condition is cleared after *eventCount* sequential correct events occur (*protocolStatus* = ***normalCondition***). An event is one of the following: (1) expiry of the linkVerificationTimer (t391), (2) reception of a STATUS message. An error event is one of the following: (1)non-receipt of the STATUS message in t391 seconds, (2)invalid STATUS message, (3) invalid sequence number. This attribute corresponds to n392 of the ANSI and CCITT specifications and nN2 of the Vendor Forum Specification. This attribute must be less than or equal to *eventCount*.
Mib	FrameRelayMux
Values	Decimal (1..10)
Default	3

ATTRIBUTE FrMux Lmi eventCount (n393)

Access	Read and write
Description	This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed.

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This attribute corresponds to n392 of the ANSI and CCITT specifications and nN3 of the Vendor Forum Specification.

This attribute must be greater than or equal to *errorEventThreshold*.

Mib	FrameRelayMux
Values	Decimal (1..10)
Default	4

GROUP FrMux Lmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayMux

ATTRIBUTE FrMux Lmi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayMux
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrMux Lmi operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayMux
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrMux Lmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayMux
Values	idle active (activ) busy
Default	idle

GROUP FrMux Lmi ProtocolStatusInfo (Psi)

Properties	Operational
Description	This group provides the protocol status of the Local Management Interface of this *FrMux*.
Mib	FrameRelayMux

ATTRIBUTE FrMux Lmi protocolStatus

Access	Read only
Description	This attribute indicates whether the *Lmi* is in an error condition or whether the protocol is behaving normally. When operating with no LMI protocol

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(*procedures* = ***none***), this attribute will always be set to ***normalCondition***. When operating with an LMI protocol (procedures set to one of ***venforForum***, ***ansi***, ***ccitt***), this attribute is set to ***errorCondition*** when *errorEventThreshold* of the last *eventCount* events are in error.
The error condition is cleared when *eventCount* consecutive good events take place.
The consequence of an error condition is that all *Dlci*'s on this interface become disabled and there is no data flow in either direction.

Mib FrameRelayMux

Values errorCondition
normalCondition

Default normalCondition

GROUP FrMux Lmi Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics for the *FrMux* Local Management Interface.

Mib FrameRelayMux

ATTRIBUTE FrMux Lmi keepAliveStatusEnqToIf (kati)

Access Read only

Description

This attribute counts the number of keep alive STATUS ENQUIRY messages sent to the interface. When the maximum count is reached it wraps to zero.

Mib FrameRelayMux

Values Decimal (0..4294967275)

Default 0

ATTRIBUTE FrMux Lmi fullStatusEnqToIf (fsti)

Access Read only

Description

This attribute counts the number of full STATUS ENQUIRY messages sent to the interface. When the maximum count is reached it wraps to zero.

Mib FrameRelayMux

Values Decimal (0..4294967275)

Default 0

ATTRIBUTE FrMux Lmi protocolErrors (proto)

Access Read only

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Description	This attribute counts the number of Local Management Interface protocol errors. Protocol errors include (1) protocol message format errors, (2) protocol timer expiry errors, and (3) sequence errors. When the maximum count is reached it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi unexpectedIes (uie)

Access	Read only
Description	This attribute counts the number of frames received with an Information Element identifier that is unknown or unexpected. When the maximum count is reached, this counter wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi sequenceErrors (seq)

Access	Read only
Description	This attribute counts the number of Local Management Interface sequence errors. A sequence error is receipt of an LMI message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi unexpectedReports (ur)

Access	Read only
Description	This attribute counts the number of frames received on the Local Management Interface with an unknown or unexpected report type. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

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ATTRIBUTE FrMux Lmi noStatusReportCount (nsrc)

Access	Read only
Description	This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented in two cases: i) after a status enquiry is sent out and t391 timer expires without having a status report received. ii) an invalid status report is received. When the maximum count is reached it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

COMPONENT FrMux DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007)
Groups	GROUP FrMux Dlci Operational (Oper) GROUP FrMux Dlci OsiState (State) GROUP FrMux Dlci ABitStatus (Abit) GROUP FrMux Dlci Statistics (Stats)
Scope	Application
Description	*FrMux/n Dlci/n* This component is responsible for the Frame Relay U-plane (User-plane) protocol for the specified instance. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which a frame is associated. All frames carried within a particular physical channel and having the same DLCI value are associated with the same logical connection.
Mib	FrameRelayMux
Subcomponents	COMPONENT FrMux Dlci ApplicationInfo (AppInfo)
Common Verbs	Help List Display Add DELete

GROUP FrMux Dlci Operational (Oper)

Properties	Operational
Description	This group contains the name of the application associated with this *Dlci*.

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Mib	FrameRelayMux

ATTRIBUTE FrMux Dlci applicationName (appIName)

Access	Read only
Description	This attribute contains the name of the application associated with this *Dlci*.
Mib	FrameRelayMux
Values	The name of the component
Default	No default

GROUP FrMux Dlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayMux

ATTRIBUTE FrMux Dlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayMux
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE FrMux Dlci operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayMux
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrMux Dlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayMux
Values	idle active (activ) busy
Default	idle

GROUP FrMux Dlci ABitStatus (Abit)

Properties	Operational
Description	This group contains the A-Bit status information for this *Dlci*.
Mib	FrameRelayMux

ATTRIBUTE FrMux Dlci aBitStatusFromIf (abfi)

Access	Read only

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Description	This attribute is the most recent A-Bit status received from the interface.
Mib	FrameRelayMux
Values	inactive active
Default	inactive

GROUP FrMux Dlci Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the *FrMux Dlci*.
Mib	FrameRelayMux

ATTRIBUTE FrMux Dlci frmToIf (fti)

Access	Read only
Description	This attribute counts the frames sent to the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci bytesToIf (bti)

Access	Read only
Description	This attribute counts the bytes sent to the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Dlci frmFromIf (ffi)

Access	Read only
Description	This attribute counts the frames received from the interface. Frames that are discarded are not included in this count. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrMux Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the bytes received from the interface. Frames that are discarded are not included in this count. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Dlci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrMux Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci becnFrmFromIf (becnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci discCongestedFromIf (disccfi)

Access	Read only
Description	This attribute counts the number of frames discarded in the receive direction due to local congestion. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayMux

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci discCongestedFromIfBytes (disccfib)

Access	Read only
Description	This attribute counts the number of bytes discarded in the receive direction due to local congestion. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci discDeCongestedFromIf (discdecfi)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) frames discarded in the receive direction due to local congestion. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci discDeCongestedFromIfBytes (discdecfib)

Access	Read only
Description	This attribute counts the number of bytes of discard eligible (DE=1) traffic discarded in the receive direction due to local congestion. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci errorShortFrmFromIf (shortfi)

Access	Read only
Description	This attribute counts the frames received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrMux Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the frames received with number of octets in the information field greater than the maximum frame size provisioned in the component pointed to by the *applicationName.* When the count reaches maximum it wraps to zero. Frames whose lengths are greater than the hardware receive buffer are discarded by the *Framer* and are therefore not included in this count.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrMux Dlci ApplicationInfo (AppIInfo)

Groups	GROUP FrMux Dlci AppIInfo Provisioned (Prov)
Scope	Application
Description	*FrMux/n Dlci/n ApplicationInfo* This component contains provisionable attributes of this *Dlci*.
Mib	FrameRelayMux
Common Verbs	Help List Display

GROUP FrMux Dlci AppIInfo Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes of this *Dlci*.
Mib	FrameRelayMux

ATTRIBUTE FrMux Dlci AppIInfo applicationName (appIName)

Access	Read and write
Description	This attribute is the link to the application associated with this *Dlci*.
Mib	FrameRelayMux
Values	Link (Service, dlciName)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrMux

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Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrNni

NN10600-060

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Language type: U.S. English

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COMPONENT FrameRelayNni (FrNni)

Instance	Decimal (1..4294967295)
Groups	GROUP FrNni CustomerIdentifierData (CidData) GROUP FrNni OsiState (State) GROUP FrNni Statistics (Stats) GROUP FrNni IfEntryProv (IfEntry) GROUP FrNni OperationalStatus (OperStatus) GROUP FrNni EmissionPriorityQs GROUP FrNni TrafficStatistics (TrafficStats)
Scope	Application
Description	*FrameRelayNni/n* This component defines an instance of the Frame Relay Network-to-Network Interface (NNI) service. This service allows two networks to be interconnected using the Frame Relay protocol. The component instance value n is a unique positive integer within a module. The *FrNni* interface must have either a *Framer* or a *VirtualFramer* subcomponent. As a default,

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a *Framer* is created whenever the *FrNni* is added. Users who need a *VirtualFramer* should delete the *Framer* and then add the *VirtualFramer*.

Mib	FrameRelayNni
Subcomponents	COMPONENT FrNni DataNetworkAddress (Dna) COMPONENT FrNni LocalManagementInterface (Lmi) COMPONENT FrNni ConnectionAdministrator (Ca)
Opt. Subcomp.	COMPONENT FrNni Framer COMPONENT FrNni VirtualFramer (VFramer) COMPONENT FrNni Signaling (Sig) COMPONENT FrNni LoadTestSystem (Lts) COMPONENT FrNni ServiceTrace (SrvTrace) COMPONENT FrNni BnxProtocol (Bp)
Opt. Subcomp.	COMPONENT FrNni DataLinkConnectionIdentifier (Dlci)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrNni CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayNni

ATTRIBUTE FrNni customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component.

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Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib FrameRelayNni

Values Decimal (0; 1..8191)

Default 0

GROUP FrNni OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayNni

ATTRIBUTE FrNni adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib FrameRelayNni

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE FrNni operationalState (osiOper)

Access Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayNni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrNni availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	FrameRelayNni
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrNni proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	FrameRelayNni
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrNni controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	FrameRelayNni
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrNni alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — FrameRelayNni

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE FrNni standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	FrameRelayNni
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrNni unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayNni
Values	false true
Default	false

GROUP FrNni Statistics (Stats)

Properties	Operational
Description	This group contains the statistics about the operational behavior of the service at the interface level.
Mib	FrameRelayNni

ATTRIBUTE FrNni lastUnknownDlci (ludlc)

Access	Read only
Description	This attribute identifies the most recent DLCI which user frames were received on for which a DLCI has not been provisioned on the port.
Mib	FrameRelayNni
Values	Decimal (0..1023)
Default	0

ATTRIBUTE FrNni unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute contains a count of the number of frames received from the interface with an unknown DLCI (DLCI which is not provisioned). When the maximum is exceeded the count wraps to zero.

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Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is exceeded the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

GROUP FrNni IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayNni

ATTRIBUTE FrNni ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayNni
Values	up down testing
Default	up

ATTRIBUTE FrNni ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayNni
Values	Decimal (1..65535)

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Default	No default

GROUP FrNni OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayNni

ATTRIBUTE FrNni snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayNni
Values	up down testing
Default	up

GROUP FrNni EmissionPriorityQs

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the number of Frame Relay egress emission priority queues to be used on that Frame Relay Interface and the provisionable attribute to determine whether emission queue size is doubled.
Mib	FrameRelayNni

ATTRIBUTE FrNni numberOfEmissionQs

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of egress emission priority queues that will be used for that Frame Relay interface. For V.35, V.11, HSSI, E1, DS1, E3, DS3 or 8pDS1 the possible values are: ***2*** (in which case they are hardware queues), or ***4*** (in which case they are software queues). For DS1C, E1C or DS3C the possible values are ***2, 4*** (in all cases they are software queues). For 32 port Msa cards the possible values are ***2, 4*** (in all cases they are hardware queues).

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	For 4pDS3Ch, 1pSTM1ChSmIr PQC6v2 (also known as PQC2) the possible values are ***2, 4*** (in all cases they are hardware queues). For 4pDS3Ch PQC12, setting this attribute has no effect on the number of egress emission priority queues, four hardware queues are always used.
Mib	FrameRelayNni
Values	Decimal (2; 4)
Default	2

ATTRIBUTE FrNni doubleEmissionQSize (deqs)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the emission queue's size is doubled for the frame relay interface and it is only supported on *frUni*. When *doubleEmissionQSize* is set to ***yes***, the default frame relay interface emission queue size is doubled. This will reduce packets loss, but latency will be increased as the queue length grows. When the attribute is set to ***no***, the default emission queues size will be used. When frame relay interface is linked to a virtual framer, the *doubleEmissionQSize* must be set to ***no***, or a semantic check error will occur. For V11, E1 and E1C cards, the possible values of the *doubleEmissionQSize* attribute are ***yes*** and ***no***. For other cards, *doubleEmissionQSize* must always be set to ***no***, or a semantic check error will occur.
Mib	FrameRelayNni
Values	no yes
Default	no

GROUP FrNni TrafficStatistics (TrafficStats)

Properties	Operational
Description	This operational group provides the traffic statistics of the service at the interface level. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	FrameRelayNni

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ATTRIBUTE FrNni frmToIfByQueue

Access	Read only
Description	This attribute counts the frames transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

ATTRIBUTE FrNni octetToIfByQueue

Access	Read only
Description	This attribute counts the octets transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

COMPONENT FrNni DataNetworkAddress (Dna)

Groups	GROUP FrNni Dna Address GROUP FrNni Dna OutgoingOptions GROUP FrNni Dna CallOptions
Scope	Application

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Description	This group contains a superset of all attributes which may apply to a VC. Particular applications will typically offer only a subset of these attributes by providing a definition of their own DNA subcomponent.
Mib	FrameRelayNni
Opt. Subcomp.	COMPONENT FrNni Dna HuntGroupMember (HgM)
Common Verbs	Help List Display

GROUP FrNni Dna Address

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the DNA that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	FrameRelayNni
Values	x121 e164
Default	x121

ATTRIBUTE FrNni Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	This attribute indicates the customer's unique identifier. It is the equivalent of the telephone number in the telephone network.
Mib	FrameRelayNni
Values	BCD (1..15)
Default	No default

GROUP FrNni Dna OutgoingOptions

Properties	Provisioned

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Description	This group defines DNA call options for calls made from the interface. These options are not used for calls arriving to the interface represented by this *DNA*.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna outDefaultPriority (odf)

Access	Read and write
Description	This attribute indicates the default priority of outgoing calls from the DTE to the network. It can be overridden by the *discardPriority* under *DLCI Direct Call* subcomponent. This option can be also included in X.25 signaling, in such case it will be overruled.
Mib	FrameRelayNni
Values	normal high
Default	normal

ATTRIBUTE FrNni Dna outDefaultPathReliability (opr)

Access	Read and write
Description	This attribute specifies the default class of routing for reliability routing for all outgoing calls (from the DTE to the network) using this particular DNA. The chosen default class of routing applies to all outgoing calls established using this DNA, and applies to the packets travelling in both directions on all outgoing calls (local to remote, and remote to local). For incoming calls, the default class of routing is chosen by the calling party (as opposed to DPN, where either end of the call can choose the default routing class). This attribute, if set to a value of *normal*, indicates that the default class of routing is normal reliability routing. If set to a value of *high*, then the default class of routing is high reliability routing. High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the VC handles the duplication and disordering to ensure that packets are delivered to the DTE properly. For the Frame Relay service, duplication of packets is not desired, in which case, normal reliability may be chosen as the preferred class of routing.
Mib	FrameRelayNni

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Values	normal high
Default	normal

ATTRIBUTE FrNni Dna defaultTransferPriority (dtp)

Access	Read and write
Description	This attribute specifies the default transfer priority for all outgoing calls using this particular *DNA*. It can be overridden by the *transferPriority* provisioned in the *Dlci DirectCall* sub-component. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15. Each transfer priority n, where n indicates the transfer priority index, contains a default setting for routing class of service (multimedia, delay or throughput) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required. The default *defaultTransferPriority* is ***0***.
Mib	FrameRelayNni
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	0

ATTRIBUTE FrNni Dna transferPriorityOverRide (tpor)

Access	Read and write

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Description	When this attribute is set to ***yes*** in the call request, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority. This attribute is not applicable for Frame Relay SVCs. For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority*. The default of *transferPriorityOverRide* is ***yes***.
Mib	FrameRelayNni
Values	yes no
Default	yes

GROUP FrNni Dna CallOptions

Properties	Provisioned
Description	This group defines additional all options for not related to direction of the call.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator. This attribute is returned by the local VC in the accounting record for all calls that are set up using this particular DNA.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrNni Dna accountCollection (aco)

Access	Read and write
Description	This attribute indicates that accounting records are to be collected by the network for the various reasons: billing, test, study, auditing. The last of the parameters, force, indicates that accounting records are to be collected irrespective of other collection reasons. The force option is available for X.75 Gateways only. If none of these reasons are set, then accounting will be suppressed. To set a specific accounting collection reason, the reason is entered and

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	the corresponding bit in the structure is set to a value of 1. To turn off a specific accounting collection reason, the reason is entered preceded with the '~' character, and the corresponding bit in the structure is set to a value of 0. The bit placement for the accounting collection reasons is as follows: Bit 0 - Bill Bit 1 - Test Bit 2 - Study Bit 3 - Audit Bit 4 - Force
Mib	FrameRelayNni
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE FrNni Dna serviceExchange (sre)

Access	Read and write
Description	This attribute is an arbitrary number, Data Service Exchange, as entered by the network operator and reported in accounting record. It is converted into an internal 8-bit integer value for use in the accounting record as well as in various X.25 and X.75 Tariff utilities.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrNni Dna egressAccounting (ega)

Access	Read and write
Description	This attribute specifies if egress accounting is enabled by the frame relay service. If egress accounting is disabled, only segment counts are collected by the VC. No frame relay counts appear in the accounting records for the frame relay service. If egress accounting is enabled, the accounting records for the frame relay service will contain frame relay specific counts.
Mib	FrameRelayNni
Values	yes no
Default	no

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ATTRIBUTE FrNni Dna dataPath (dpa)

Access	Read and write
Description	This attribute specifies the data path to be used by Virtual Circuits on this interface. If the connection has a *DirectCall* component then the value can be overridden by the *dataPath* attribute of the *DirectCall* component. This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established. The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection. A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value. ***dprsOnly*** - dynamic packet routing system is used ***dprsMcsOnly*** - DPRS Multiservice Cut-Through Switching path is used. ***dprsMcsFirst*** - DPRS Multiservice Cut-Through Switching path is used if it is available. If it is not available ***dprsOnly*** is used.
Mib	FrameRelayNni
Values	dprsOnly dprsMcsOnly dprsMcsFirst
Default	dprsOnly

COMPONENT FrNni Dna HuntGroupMember (HgM)

Groups	GROUP FrNni Dna HgM Interface (If) GROUP FrNni Dna HgM Operational (Op)
Scope	Application
Description	*FrNni/n Dna HuntGroupMember* This component specifies the interaction of this *DNA* with one or more hunt groups to which it is expected to belong. Note that is not possible to automatically verify the consistency of the hunt

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group membership specified under this component with the hunt group provisioning on the DPN Hunt Group Server(s).

Mib	FrameRelayNni
Subcomponents	COMPONENT FrNni Dna HgM HuntGroupAddress (HgAddr)
Common Verbs	Help List Display Add DELete

GROUP FrNni Dna HgM Interface (If)

Properties	Provisioned
Description	This group contains the interface parameters between the *HuntGroupMember* and the hunt group server.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna HgM availabilityUpdateThreshold (aut)

Access	Read and write
Description	This attribute specifies how much *availableAggregateCIR* can change before an Availability Message Packet (AMP) is sent to the hunt group server informing it of the change. If the value specified is not a multiple of 2048, the value actually used as the threshold will be the next higher multiple of 2048.
Mib	FrameRelayNni
Values	Decimal (2048..16777216)
Units	bit/s
Default	8192

GROUP FrNni Dna HgM Operational (Op)

Properties	Operational
Description	This group contains the operational attributes of the *HuntGroupMember* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna HgM availabilityDelta (ad)

Access	Read only
Description	This attribute indicates the net change in the available aggregate CIR since the last Availability Message Packet (AMP) was sent to the Hunt Group. Once the absolute value of this attribute reaches the

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	availabilityUpdateThreshold an AMP is sent to the hunt group server(s) and the *availabilityDelta* is re-computed.
Mib	FrameRelayNni
Values	Signed (-16777216..16777215)
Units	bit/s
Default	No default

ATTRIBUTE FrNni Dna HgM availableDlcis (adl)

Access	Read only
Description	This attribute indicates the number of DLCIs available for SVCs on the interface associated with this DNA. If this value reaches 0, an AMP with zero availability is sent to the hunt group server(s). Both this attribute and the *availableAggregateCir* attribute must be non zero for this DNA to receive calls on the hunt group.
Mib	FrameRelayNni
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrNni Dna HgM maximumAvailableAggregateCir (mcir)

Access	Read only
Description	This attribute indicates the maximum available bandwidth for this hunt group member. This value represents the total sum of the sixteen egress bandwidth pools. It is the sum of the sixteen indices of the *FrNni Ca egressBandwidthPool* attribute multiplied by the link speed.
Mib	FrameRelayNni
Values	Long Integer
Units	bit/s
Default	No default

ATTRIBUTE FrNni Dna HgM availableAggregateCir (acir)

Access	Read only
Description	This attribute indicates the current total available bandwidth reported to the hunt group server in the Availability Message Packet (AMP). This value represents the sum of the sixteen currently available egress bandwidth pools. It is the sum of the sixteen indices of the *FrNni Ca egressPoolAvailableBandwidth* attribute. It increments when a connection is released. It decrements when a connection is accepted. Both this attribute and the *availableDlcis* attribute must be non zero for this interface to receive calls on a hunt group.

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Mib	FrameRelayNni
Values	Long Integer
Units	bit/s
Default	No default

COMPONENT FrNni Dna HgM HuntGroupAddress (HgAddr)

Instance	Decimal (0..63)
Groups	GROUP FrNni Dna HgM HgAddr Address (Addr)
Scope	Application
Description	*FrNni/n Dna HgM HuntGroupAddress/n* This component specifies a hunt group address to which this member belongs. A hunt group member belongs to at least one hunt group.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni Dna HgM HgAddr Address (Addr)

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna HgM HgAddr numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *DNA*. The address may belong to X.121 or E.164 plans.
Mib	FrameRelayNni
Values	x121 e164
Default	x121

ATTRIBUTE FrNni Dna HgM HgAddr dataNetworkAddress (dna)

Access	Read and write
Description	This attribute contains digits which form the unique identifier of the customer interface. It can be compared (approximation only) to a

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telephone number where the phone number identifies a unique telephone set. *DNA* digits are selected and assigned by network operators.

Mib FrameRelayNni

Values BCD (1..15)

Default No default

COMPONENT FrNni Framer

Groups
GROUP FrNni Framer Provisioned (Prov)
GROUP FrNni Framer LinkOptions (Link)
GROUP FrNni Framer OsiState (State)
GROUP FrNni Framer Statistics (Stats)
GROUP FrNni Framer LinkUtilization (Util)

COLLECTED STATS FrameRelayNni Framer

Scope Application

Description
FrUni/n Framer
FrNni/n Framer
FrAtm/n Framer
This component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib FrameRelayNni

Common Verbs
Help
List
Display
Add
DELete

GROUP FrNni Framer Provisioned (Prov)

Properties Provisioned

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Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	FrameRelayNni

ATTRIBUTE FrNni Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayNni
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrNni Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	FrameRelayNni

ATTRIBUTE FrNni Framer dataInversion

Access	Read and write
Description	This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed. This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density. Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted. This attribute may only take its default value for non-MSA cards.
Mib	FrameRelayNni

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Values	off on
Default	off

ATTRIBUTE FrNni Framer frameCrcType

Access	Read and write
Description	This attribute defines the type of CRC used. The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used. This attribute may take only its default value for non-MSA cards.
Mib	FrameRelayNni
Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE FrNni Framer flagsBetweenFrames

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.
Mib	FrameRelayNni
Values	Decimal (1..16)
Default	1

GROUP FrNni Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayNni

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ATTRIBUTE FrNni Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayNni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayNni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

GROUP FrNni Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Framer lrcErrors

Access	Read only

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Description

This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Framer nonOctetErrors

Access Read only

Description

This attribute is the total number of frames that were non octet aligned.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Framer overruns

Access Read only

Description

This attribute is the total number of frames received from the link for which overruns occurred.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Framer underruns

Access Read only

Description

This attribute is the total number of frames transmitted to the link for which underruns occurred.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Framer largeFrmErrors

Access Read only

Description

This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.

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Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Framer frmModeErrors

Access	Read only
Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	FrameRelayNni
Values	Long Integer

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Default	No default

ATTRIBUTE FrNni Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

GROUP FrNni Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayNni
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE FrNni Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayNni
Values	Decimal (0..100)

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Units %

Default 0

COLLECTED STATS FrameRelayNni Framer

Description The statistics record generated by the FrameRelayNni Framer component.

ATTRIBUTE FrNni Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrNni Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrNni Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrNni Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrNni Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT FrNni LocalManagementInterface (Lmi)

Groups GROUP FrNni Lmi ProtocolParameters (Parms)
GROUP FrNni Lmi NniProtocolParameters (NniParms)
GROUP FrNni Lmi OsiState (State)
GROUP FrNni Lmi ProtocolStatusInfo (Psi)
GROUP FrNni Lmi Statistics (Stats)

Scope Application

Description *FrNni/n LocalManagementInterface*
This component defines the parameters for implementing the Frame Relay NNI Local Management Interface protocol. This differs from its UNI

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counterpart in that bi-directional LMI procedures are supported and protocols other than ANSI and CCITT are not supported.

Mib FrameRelayNni

Common Verbs
Help
List
Display

GROUP FrNni Lmi ProtocolParameters (Parms)

Properties Provisioned

Description

This group contains the provisionable attributes of the Local Management Interface component.

Mib FrameRelayNni

ATTRIBUTE FrNni Lmi procedures (proc)

Access Read and write

Criticality Process

Description

This attribute selects the procedures to be used for the Local Management Interface. The following are the supported procedures:

none: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment which didn't implement any LMI procedures. In this case, the remaining attributes of this group are ignored.

For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrNni* is set to ***none***, only ***none*** is permitted for the *procedures* attribute of this *Lmi* component.

ansi: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are supported. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

autoConfigure:The interface determines automatically which Local Management Interface procedures to use.

The procedures currently being used can be seen in the operational attribute *opProcedures*.

Mib FrameRelayNni

Values
none
ansi

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	itu (ccitt) autoConfigure
Default	autoConfigure

ATTRIBUTE FrNni Lmi asyncStatusReport (asr)

Access	Read and write
Description	This attribute selects the use of asynchronous PVC status report procedures as specified in ANSI and CCITT specification.
Mib	FrameRelayNni
Values	off on
Default	off

ATTRIBUTE FrNni Lmi errorEventThreshold (n392)

Access	Read and write
Description	For the network-side-procedure, an event is defined as follows: (1) receipt of a STATUS ENQUIRY message, or (2) expiration of timer T392. An error event is (1) nonreceipt of STATUS ENQUIRY in T392 seconds; (2) invalid format of a LMI message; (3) invalid receive sequence number. For the user-side-procedure, an event is defined as a polling cycle or a status enquiry and status report exchange. An error event is (1) non-receipt of a STATUS within the polling cycle, or (2) invalid format of a LMI message, or (3) invalid sequence number This attribute specifies the number of error events which, if they occur within *eventCount* events, will cause a protocol error condition. The condition is cleared after *eventCount* sequential correct events occur. It must be less than or equal to *eventCount* (n393)
Mib	FrameRelayNni
Values	Decimal (1..10)
Default	3

ATTRIBUTE FrNni Lmi eventCount (n393)

Access	Read and write
Description	This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed. It must be greater than or equal to *errorEventThreshold* (n392).
Mib	FrameRelayNni

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Values	Decimal (1..10)
Default	4

ATTRIBUTE FrNni Lmi checkPointTimer (t392)

Access	Read and write
Description	This attribute selects the time (in seconds) within which a STATUS ENQUIRY message is expected. It must be greater than *linkVerificationTimer (t391).*
Mib	FrameRelayNni
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	15

ATTRIBUTE FrNni Lmi ignoreActiveBit (inab)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the Frame Relay LMI Active Bit (A-bit) has a bearing on the transfer of user data across this Frame Relay interface for both directions of traffic flow. When this attribute is set to ***yes***, the A-bit status of a user DLCI connection does not affect data transfer. When this attribute is set to ***no,*** data received from the local interface is discarded if an A-bit =0 condition exists towards the local user. Data being sent to the local interface is discarded if an A-bit = 0 condition exists towards the local user.
Mib	FrameRelayNni
Values	no yes
Default	no

ATTRIBUTE FrNni Lmi pvcAlarmsReporting (pvcAlarms)

Access	Read and write
Description	This attribute specifies if alarms are generated when PVCs change state in the local network, an adjacent network or in remote networks. When the value is ***internal***, PVCs operational status change in the local network are reported in alarms. When the value is ***external***, PVCs operational status change in an adjacent or remote networks are reported

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in alarms. When the value is ***both***, PVCs status change in local and adjacent or remote networks are reported in alarms. When the value is ***none***, no alarms are issued for PVCs status change.

There are four kinds of alarms controlled by the attribute.
Alarm 7007 200x reports PVCs that have lost connectivity in an adjacent or remote networks.
Alarm 7007 201x reports PVCs that have reached the data transfer state in an adjacent or remote networks.
Alarm 7007 202x reports PVCs that have lost connectivity in the local network.
Alarm 7007 203x reports PVCs that have reached the data transfer state in the local network.

Each alarm can report a maximum of 112 DLCIs. Up to nine alarms of the same kind may be required to report all PVCs that have changed state if all these PVCs have experienced the same condition at the *FrNni* interface.

Mib: FrameRelayNni

Values:
external
internal
both
none

Default: external

GROUP FrNni Lmi NniProtocolParameters (NniParms)

Properties: Provisioned

Description:

This group contains the provisionable attributes of the Local Management Interface component which are unique to NNI.

Mib: FrameRelayNni

ATTRIBUTE FrNni Lmi fullStatusPollingCycles (n391)

Access: Read and write

Description: This attribute specifies how frequently the Frame Relay NNI service should initiate a Status Enquiry for a full PVC status report. A polling cycle is a Status Enquiry and Status Report exchange.

Mib: FrameRelayNni

Values: Decimal (1..255)

Default: 6

ATTRIBUTE FrNni Lmi linkVerificationTimer (t391)

Access: Read and write

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Description	This attribute specifies how frequently the Frame Relay NNI service should initiate a Status Enquiry for link integrity verification. It must be less than *checkPointTimer (t392)*.
Mib	FrameRelayNni
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	10

GROUP FrNni Lmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lmi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayNni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE FrNni Lmi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayNni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni Lmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

GROUP FrNni Lmi ProtocolStatusInfo (Psi)

Properties	Operational
Description	This group provides the protocol status of the Local Management Interface.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lmi protocolStatus

Access	Read only

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Description	This attribute indicates whether the LMI is in an error condition or whether the LMI procedures are behaving normally. When operating with no LMI protocol, this attribute is always set to ***normalCondition***. When operating with LMI procedures, this attribute is set to ***errorCondition*** after n392 of the last n393 events are in error. The consequence of an ***errorCondition*** is that all DLCIs on this interface will become inactive in both directions. The ***errorCondition*** is lifted and a ***normalCondition*** is indicated when a sufficient number of events have occurred without error. In ANSI, this occurs when n393 consecutive good events take place. If the *procedures* attribute is set to ***autoConfigure***, this attribute is se to ***configuring*** while adaptive LMI determines which LMI procedures are running on the link. A single LMI error event during auto configuration causes the attribute value to change to ***errorCondition***. If during ***configuring*** no LMI message is received, an LMI ***errorCondition*** is raised after n392 x t392 seconds.
Mib	FrameRelayNni
Values	errorCondition normalCondition configuring
Default	No default

ATTRIBUTE FrNni Lmi opProcedures (opproc)

Access	Read only
Criticality	Process
Description	This attribute indicates the procedures being used for the Local Management Interface. This attribute should be ignored if *protocolStatus* is not ***normalCondition***. The following procedures are supported: ***none***: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures. ***ansi***: Local Management Interface procedures from the ANSI specification are running. *DLCI 0* is used for the LMI protocol. ***itu***: Local Management Interface procedures from the ITU-T specification are running. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***. ***unknown***: Local Management Interface procedures have yet to be determined by Adaptive LMI.
Mib	FrameRelayNni
Values	none ansi

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	itu unknown
Default	No default

GROUP FrNni Lmi Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay NNI Local Management Interface.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lmi keepAliveStatusTolf (kasti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive status messages sent to the external network in response to a status enquiry for keep alive status. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi fullStatusTolf (fsti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external network in response to a status enquiry for keep alive or full status. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi keepAliveStatusEnqFromIf (kafi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid keep alive status enquiry messages received from the external network. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi fullStatusEnqFromIf (fsfi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid full status enquiry messages received from the external network. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi networkSideEventHistory (nsh)

Access	Read only
Description	This attribute displays the Local Management Interface network side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The leftmost event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status enquiry message. An error event is either a nT2/T392 timer expiry or receipt of a status enquiry with bad sequence numbers.
Mib	FrameRelayNni
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE FrNni Lmi userSideEventHistory (ush)

Access	Read only
Description	This attribute displays the Local Management Interface user side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The leftmost event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status message. An error event is either a nT1/T391 timer expiry or receipt of a status message with bad sequence numbers.
Mib	FrameRelayNni
Values	String (1..10, ASCII)
Default	No default

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ATTRIBUTE FrNni Lmi protocolErrors (proto)

Access	Read only
Description	This attribute counts the number of Local Management Interface protocol errors. It is the sum of the sequence (*sequenceErrors* and *statusSequenceErrors*) and timeout (*pollingVerifTimeouts* and *noStatusReportCount*) errors. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi unexpectedIes (uie)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an Information Element identifier that is unknown or unexpected. An unexpected Information Element is not a protocol error. When the maximum count is exceeded, this counter wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi sequenceErrors (seq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status Enquiry message sequence errors. A sequence error is receipt of a Status Enquiry message with a receive sequence number not equal to the last send sequence number. When the maximum count is exceeded the counter wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi statusSequenceErrors (stseq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status message sequence errors. A sequence error is receipt of a Status

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	message with a receive sequence number not equal to the last send sequence number. When the maximum count is exceeded the counter wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi unexpectedReports (ur)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an unknown or unexpected report type. An unexpected report type is not a protocol error. When the maximum count is exceeded the counter wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi pollingVerifTimeouts (tmo)

Access	Read only
Description	This attribute counts the number of checkPointTImer (t392) timer expiries occurring on the Local Management Interface. When the maximum count is exceeded the counter wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi noStatusReportCount (nsrc)

Access	Read only
Description	This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented in two cases: i) after a status enquiry is sent out and T391 timer expires without having a status report received. ii) an invalid status report is received. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni

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Values	Decimal (0..4294967295)
Default	0

COMPONENT FrNni DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007)
Groups	GROUP FrNni Dlci OsiState (State) GROUP FrNni Dlci ABitStatus (Abit) GROUP FrNni Dlci ServiceParametersOp (SpOp) GROUP FrNni Dlci Statistics (Stats) GROUP FrNni Dlci IntervalData (Int) GROUP FrNni Dlci CallData (Calld)
Scope	Application
Description	*FrNni/n DataLinkConnectionIdentifier/n* This component represents a Data Link Connection Identifier. It is responsible for the Frame Relay U-plane (User-plane) protocol for the specified instance. There can be many instances of *Dlci* for each *FrNni*. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which a frame is associated. All frames carried within a particular physical channel and having the same DLCI value are associated with the same logical connection. A DLCI instance can be a permanent virtual circuit (PVC) or switched permanent virtual circuit (P-SPVC) added through provisioning, or a switched virtual circuit (SVC) or S-SPVC which is created dynamically through signaling. The *lock* and *unlock* commands apply to permanent DLCIs. The *clear* command applies to switched DLCIs. For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component

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linked to this *FrNni* is set to ***none***, no *Dlci* component is allowed under this *FrNni*.

Mib	FrameRelayNni
Subcomponents	COMPONENT FrNni Dlci ServiceParametersProv (Sp) COMPONENT FrNni Dlci EgressServiceParameters (EgressSp)
Opt. Subcomp.	COMPONENT FrNni Dlci DirectCall (Dc) COMPONENT FrNni Dlci BnxInterworkingFunction (BnxIwf)
Dyn. Subcomp.	COMPONENT FrNni Dlci Vc COMPONENT FrNni Dlci LoopBack (Lb)
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB CLEAR FrNni Dlci

Impact	Service
Description	This command is used to clear a Frame Relay switched (SVC or S-SPVC) connection.

GROUP FrNni Dlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayNni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni DIci operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayNni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni DIci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrNni DIci availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which

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represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	FrameRelayNni
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrNni DIci proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

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The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FrameRelayNni
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrNni DIci controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	FrameRelayNni
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrNni DIci alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	FrameRelayNni
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE FrNni Dlci **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the

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backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — FrameRelayNni

Values — hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE FrNni Dlci unknownStatus (osiUnknw)

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — FrameRelayNni

Values — false
true

Default — false

GROUP FrNni Dlci ABitStatus (Abit)

Properties — Operational

Description — This group contains the A-Bit status information for this Data Link Connection Identifier.

Mib — FrameRelayNni

ATTRIBUTE FrNni Dlci aBitStatusTolf (abti)

Access — Read only

Description — This attribute is the most recent A-bit status sent to the interface. The A-bit status is part of the LMI protocol, and indicates willingness to accept data from the local interface.

inactive - the Frame Relay service discards all data offered from the local interface.

active - the Frame Relay service tries to process all data offered from the local interface.

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notApplicable - the DLCI is switched, so this attribute is ignored.

Mib	FrameRelayNni
Values	inactive active notApplicable
Default	inactive

ATTRIBUTE FrNni Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute provides the reason (if any) for an ***inactive*** status to be sent to the interface. This reason is ***notApplicable*** for an ***active*** status.
Mib	FrameRelayNni
Values	notApplicable remoteUserSignaled localLmiError remoteLmiError localLinkDown remoteLinkDown pvcSpvcDown userNotAuthorized resourceNotAvailable dlciCollisionAtNni
Default	notApplicable

ATTRIBUTE FrNni Dlci aBitStatusFromIf (abfi)

Access	Read only
Description	This attribute is the most recent A-Bit status received from the interface. ***inactive*** - the Frame Relay service informs the remote DLCI not to send user data to this interface. ***active*** - the Frame Relay service informs the remote DLCI that it is okay to send user data to this interface. ***notApplicable*** - the DLCI is switched, so this attribute is ignored.
Mib	FrameRelayNni
Values	inactive active notApplicable
Default	inactive

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ATTRIBUTE FrNni Dlci aBitReasonFromIf (abrfi)

Access	Read only
Description	This attribute provides the reason (if any) for an ***inactive*** status to be sent to the subnet. This reason is ***notApplicable*** for an ***active*** status.
Mib	FrameRelayNni
Values	notApplicable remoteUserSignaled localLmiError localLinkDown missingFromLmiReport
Default	notApplicable

ATTRIBUTE FrNni Dlci loopbackState

Access	Read only
Description	This attribute has the value ***on*** when the DLCI is in loopback mode and ***off*** otherwise. The loopback command verbs *start* and *stop* are used to initiate and terminate the loopback mode for a DLCI. While *loopbackState* is ***on***, the local LMI will report to the interface the A-bit status as active. Also an active A-bit signal will be reliably propagated across the subnet to the remote DLCI.
Mib	FrameRelayNni
Values	off on
Default	off

GROUP FrNni Dlci ServiceParametersOp (SpOp)

Properties	Operational
Description	This group defines the service and traffic parameters specific to this instance of DLCI. In the case of permanent (PVC and P-SPVC) DLCIs, the values of attributes with the exception of the *measurementInterval* reflect the provisioning under the *FrNni Dlci Sp* component. In the case of switched (SVC and S-SPVC) DLCIs, the values of attributes reflect the service parameter negotiations between what is provisioned under the *FrNni Sig* component and the signaled parameters.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci maximumFrameSize (n203)

Access	Read only
Description	This attribute indicates the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.

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Mib	FrameRelayNni
Values	Decimal (1..8187)
Units	octets
Default	No default

ATTRIBUTE FrNni Dlci committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (CIR) in bits per second (bit/s). When *rateEnforcement* is set to ***on***, *cir* is the rate at which the network agrees to transfer information under normal conditions. This rate is measured over a measurement interval (*t*) that is determined internally based on CIR and the committed burst size (Bc). An exception to this occurs when CIR is provisioned to be zero, in which case the measurement interval (*t*) must be provisioned explicitly. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayNni
Values	Decimal (0..2048000)
Units	bit/s
Default	No default

ATTRIBUTE FrNni Dlci committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayNni
Values	Decimal (0..2048000)
Units	bits
Default	No default

ATTRIBUTE FrNni Dlci excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here.

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	This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayNni
Values	Decimal (0..2048000)
Units	bits
Default	No default

ATTRIBUTE FrNni DIci measurementInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE FrNni DIci accounting (ac)

Access	Read only
Description	This attribute indicates whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***accountingOn*** bit and at least one of the ***accountCollection*** bits in the ***DataNetworkAddress*** component must be set to on.
Mib	FrameRelayNni
Values	off on
Default	No default

ATTRIBUTE FrNni DIci emissionPriorityToIf (epToIf)

Access	Read only
Description	This attribute indicates the emission priority of frames sent to the interface. A larger value denotes a higher priority.
Mib	FrameRelayNni
Values	Decimal (0; 1; 2; 3)
Default	No default

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ATTRIBUTE FrNni DIci transferPriorityToNetwork (tpToNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred to the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.
Mib	FrameRelayNni
Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni DIci transferPriorityFromNetwork (tpFromNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred from the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.
Mib	FrameRelayNni
Values	Decimal (0..15)

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Default	No default

ATTRIBUTE FrNni Dlci correlationTag (ctag)

Access	Read only
Description	This attribute indicates the unique string which identifies this connection. The value of this attribute is provisioned under the *correlationTag* attribute under *Service Parameters* subcomponent. If required for correlation purposes, the attribute is provisioned with the same value at both endpoints of the connection. An empty string value for this attribute indicates that the user either does not want to use the correlation tag functionality, or wants the correlation tag string to be an empty string. This attribute can be used for off-switch data correlation purposes. Downstream processing uses this attribute to correlate data records (accounting etc.) issued at different nodes in the network. In accounting, the value of this attribute appears as the *circuitId* (circuit identifier) for the endpoint. There is no system-generated value for the correlationTag. Therefore, this attribute does not appear for SVC DLCIs.
Mib	FrameRelayNni
Values	String (0..32, ASCII)
Default	""

GROUP FrNni Dlci Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier. When the DLCI is in local loopback mode, the DLCI statistics do not increment.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci frmToIf (fti)

Access	Read only
Description	This attribute counts the frames sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrNni DIci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni DIci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni DIci bciToSubnet (bcits)

Access	Read only
Description	This attribute counts the frames sent into the local network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni DIci deFrmToIf (deti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni DIci discCongestedToIf (discardcti)

Access	Read only

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Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discDeCongestedToIf (discarddecti)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci frmFromIf (ffi)

Access	Read only
Description	This attribute counts the frames received from the interface. It includes the frames that are discarded due to error or excess. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci becnFrmFromIf (becnfi)

Access	Read only

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Description	This attribute counts the frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci fciFromSubnet (fcifs)

Access	Read only
Description	This attribute counts the frames received from the network with the Forward Congestion Indication (FCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci bciFromSubnet (bcifsb)

Access	Read only
Description	This attribute counts the frames received from the network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci excessFrmFromIf (excess)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.

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Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discExcessFromIf (discardefi)

Access	Read only
Description	This attribute counts the frames which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discFrameAbit (discfab)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay Service, due to an inactive PVC status, in the direction toward the local network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discCongestedFromIf (discardcfi)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discDeCongestedFromIf (discarddecfi)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion, in the direction toward the local network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrNni Dlci errorShortFrmFromIf (shortfi)

Access	Read only
Description	This attribute counts the frames received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the frames received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Frames whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci becnFrmSetByService (becnset)

Access	Read only
Description	This attribute counts the number of frames with BECN set by the Frame Relay service. It is incremented whenever the Frame Relay service sets BECN on a frame upon detecting local congestion. This count is incremented regardless of whether the frame already bears a set BECN bit since its use is to determine the place of congestion. When the count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci bytesToIf (bti)

Access	Read only
Description	This attribute counts the bytes sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrNni DlciI deBytesToIf (debti)

Access	Read only
Description	This attribute counts the bytes sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni DlciI discCongestedToIfBytes (discardctib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the link. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni DlciI discDeCongestedToIfBytes (discarddectib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the link. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni DlciI bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the number of bytes received from the interface. Bytes that are discarded by the interface due to framing errors (such as CRC errors for example) are not counted. However bytes that are discarded by the application due to rate enforcement or congestion are counted. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrNni Dlci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci excessBytesFromIf (excessb)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discExcessFromIfBytes (discardebi)

Access	Read only
Description	This attribute counts the bytes which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discByteAbit (discbab)

Access	Read only
Description	This attribute counts the bytes which were discarded due to aBit turned off.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discCongestedFromIfBytes (discardcbib)

Access	Read only

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Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discDeCongestedFromIfBytes (discarddecbib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the network. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci errorShortBytesFromIf (shortbi)

Access	Read only
Description	This attribute counts the bytes received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci errorLongBytesFromIf (longbi)

Access	Read only
Description	This attribute counts the bytes received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Bytes whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci rateAdaptReduct (rar)

Access	Read only

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Description	This attribute counts the number of rate reductions due to rate adaptation. Rate adaptation causes the allowed rate to be reduced in steps. After each reduction, a period of time is awaited before further action is taken. At the end of this period, the allowed rate is further reduced if congestion is still prevalent. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci rateAdaptReductPeriod (rarp)

Access	Read only
Description	This attribute provides a cumulative count of the amount of time that rate adaptation procedures have been in effect. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE FrNni Dlci cirPresent

Access	Read only
Description	This attribute provides the actual Committed Information Rate (CIR) enforced for this DLCI. This number is in units of 800 bit/s, since that is the internal resolution of rate enforcement. If *rateEnforcement* is **off**, then this number does not have meaning. Normally, this attribute matches the provisioned CIR for the DLCI. But when Rate Adaptation is active, then this number will vary to represent the actual Allowed CIR at the moment that this attribute is collected.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

ATTRIBUTE FrNni Dlci eirPresent

Access	Read only
Description	This attribute provides the actual Excess Information Rate (EIR) enforced for this DLCI. This number is in units of 800 bit/s, since that is the internal resolution of rate enforcement. If *rateEnforcement* is **off**, then this number does not have meaning. Normally, this attribute matches the provisioned EIR for the DLCI. But when Rate Adaptation is active, then this number will

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vary to represent the actual Allowed EIR at the moment that this attribute is collected.

Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP FrNni Dlci IntervalData (Int)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier interval data (accounting data).
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci startTime

Access	Read only
Description	This attribute indicates the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes. A new interval period is started each time an accounting record is generated.
Mib	FrameRelayNni
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrNni Dlci totalIngressBytes (tib)

Access	Read only
Description	This attribute counts the total bytes received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci totalEgressBytes

Access	Read only
Description	This attribute counts the total bytes sent to the interface since the start of the interval period. The start of the interval period is captured in the

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	startTime attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci eirIngressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci eirEgressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci discardedBytes

Access	Read only
Description	This attribute counts the total bytes in invalid frames received from the interface and discarded at the DLCI since the start of the interval period. This count is a sum of octets in frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

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ATTRIBUTE FrNni Dlci totalIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the total number of segments in frames received from the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the total number of frames received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci totalEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the total number of segments in frames sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the total number of frames sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci eirIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrNni Dlci eirEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discardedSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in invalid frames received from the interface and discarded at the DLCI. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of invalid frames received from the interface and discarded at the DLCI. Segments of frames are counted since the start of the interval period. The count is reset to zero when an accounting record is generated. The count is a sum of segments in frames or frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci localRateAdaptOccurred

Access	Read only
Description	This attribute indicates whether rate adaptation has occurred on this user Data Link Connection on this Frame Relay interface. The value is set to ***no*** when an accounting record is generated.
Mib	FrameRelayNni
Values	yes no

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Default	no

ATTRIBUTE FrNni Dlci elapsedDifference

Access	Read only
Description	This attribute indicates the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since the call started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci egressProtocol (ep)

Access	Read only
Description	This attribute indicates whether the egress protocol is active at this DLCI. The activation of the egress protocol is negotiated at the call setup and it depends on the remote end supporting OAM frame exchanges and the record generation mode.
Mib	FrameRelayNni
Values	off on
Default	No default

ATTRIBUTE FrNni Dlci callRefNumber

Access	Read only
Description	This attribute indicates the call reference number which is a unique number generated by the switch. The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the connection.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

GROUP FrNni Dlci CallData (CallId)

Properties	Operational
Description	This group of attributes describes the characteristics of the call such as call type and call state.
Mib	FrameRelayNni

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ATTRIBUTE FrNni Dlci callType (ct)

Access	Read only
Description	This attribute indicates whether this DLCI is a permanent virtual circuit (PVC), a switched virtual circuit (SVC), or a switched permanent virtual circuit (SPVC).
Mib	FrameRelayNni
Values	pvc svc spvc
Default	No default

ATTRIBUTE FrNni Dlci callState

Access	Read only
Description	This attribute indicates the FRF.10 state of a switched call. The value of this attribute for a permanent (PVC and P-SPVC) DLCI is always ***notApplicable***. In the description that follows, “calling STE” refers to the network who has initiated the SETUP request, and “called STE” refers to the network that receives the request. State description: In the ***null*** state, the network has neither received nor sent call setup requests for this DLCI. In the ***callInitiated*** state, the called STE has received a SETUP message from the calling STE. In the ***callProceedingSent*** state, the called STE has sent a CALL PROCEEDING message to the calling STE in response to the SETUP message. In the ***callPresent*** state, the calling STE has sent a SETUP message to the called STE but has not received a response. In the ***callProceedingReceived*** state, the calling STE has received a CALL PROCEEDING message from the called STE in response to a SETUP message. In the ***active*** state, either the called STE has sent a CONNECT message to the calling STE, or the calling STE has received a CONNECT from the called STE. In the ***releaseRequest*** state, the STE has sent a RELEASE message to release the call and is waiting for a RELEASE COMPLETE message. In the ***releaseIndication*** state, the STE has received a RELEASE and sends a RELEASE COMPLETE message after releasing the relevant call

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resources.

In the ***restartRequest*** state, the STE has sent a RESTART request to the other STE and is waiting for an acknowledgement.

In the ***restart*** state, the STE has received a request for a restart from the other STE and this STE has not returned an acknowledgement.

Mib — FrameRelayNni

Values — null
callInitiated
callProceedingSent
callPresent
callProceedingReceived
active
releaseRequest
releaseIndication
restartRequest
restart
notApplicable

Default — No default

ATTRIBUTE FrNni Dlci callReference (callref)

Access — Read only

Description — This attribute indicates the FRF.10 call reference number associated with this DLCI. The value of this attribute for a provisioned (PVC or P-SPVC) DLCI is always ***0***.

Mib — FrameRelayNni

Values — Decimal (0..32767)

Default — No default

COMPONENT FrNni Dlci DirectCall (Dc)

Groups — GROUP FrNni Dlci Dc Options

Scope — Application

Description — *FrUni/n Dlci/n DirectCall*
FrNni/n Dlci/n DirectCall
This component defines direct call options for calls issued without operator intervention. Connection is complete and can be initiated automatically. Frequency of connection tries is controlled by retry timer.

If no BnxProtocol component is provisioned under a FrUni or FrNni, a DirectCall component is automatically added to all the Dlci components added to the FrUni or FrNni.

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If a BnxProtocol component is provisioned under a FrUni or FrNni, no DirectCall is automatically added under the Dlci component.

Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni Dlci Dc Options

Properties	Provisioned
Description	This group defines attributes associated with a direct call. It defines connection in terms of path and call option parameters. This connection can be permanent (PVC), switched (SVC), or switched permanent (SPVC). It can have four facilities: - CCITT Facilities - DTE Facilities - National Facilities - International Facilities The total number of bytes of facilities including the facility codes and all of the facility data from all of the four classes of facilities must not exceed 512 bytes.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Dc remoteNpi (rnpi)

Access	Read and write
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *remoteDna.*
Mib	FrameRelayNni
Values	x121 e164
Default	x121

ATTRIBUTE FrNni Dlci Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (DNA) of the service at the remote end of the DLCI. This is the called (destination) DCE address (DNA) of this PVC.
Mib	FrameRelayNni
Values	BCD (1..15)
Default	No default

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ATTRIBUTE FrNni Dlci Dc remoteDlci (rdlci)

Access	Read and write
Description	This attribute specifies the remote DLCI of the PVC connection.
Mib	FrameRelayNni
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrNni Dlci Dc type

Access	Read and write
Description	This attribute specifies the type of VC call. If the value is set to ***permanentMaster,*** then a permanent connection will be established between two ends. The remote end must be defined as a ***permanentSlave***, ***permanentBackupSlave,*** or ***permanentSlaveWithBackup***. The connection cannot be established if the remote end is defined as anything else. The end defined as ***permanentMaster*** always initiates the calls. It attempts to call once per minute. If the value is set to ***permanentSlave*** then a permanent connection will be established between two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote end is defined as anything else. The ***permanentSlave*** end attempts to call once per minute. If the value is set to ***permanentSlaveWithBackup*** then a permanent connection will be established between the two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote interface is defined as anything else. The ***permanentSlaveWithBackup*** attempts to call once per minute. When *type* is set to ***permanentSlaveWithBackup,*** the connection is cleared if the interface becomes unavailable. This enables a retry of the connection which can be redirected to the ***permanentBackupSlave***. If the value is set to ***permanentBackupSlave*** then a permanent connection is established between the two ends only if the ***permanentMaster*** end is disconnected from the ***permanentSlaveWithBackup*** end and a backup call is established by the call redirection system. If the ***permanentSlaveWithBackup*** interface becomes available again, the ***permanentBackupSlave*** end is disconnected and the ***permanentSlaveWithBackup*** end is reconnected to the ***permanentMaster*** end. The ***permanentBackupSlave*** end does not try to establish a call.
Mib	FrameRelayNni

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Values	permanentMaster (master) permanentSlave (slave) permanentBackupSlave (backSl) permanentSlaveWithBackup (slavWB) spvcMaster (spvcM) spvcSlave (spvcS) spvcBackupSlave (spvcBackS) spvcSlaveWithBackup (spvcSWBack)
Default	permanentMaster

ATTRIBUTE FrNni Dlci Dc **transferPriority (tp)**

Access	Read and write
Description	This attribute specifies the transfer priority to the local network for the outgoing calls using this particular DLCI. It overrides the *defaultTransferPriority* provisioned in its associated *Dna* component. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15. Each transfer priority n, where n is the transfer priority index, has a default setting for routing class of service (multimedia, delay, or throughput) and Frame Relay egress queue (depending on the number of supported egress queues on the remote end interface). These settings are specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. Specifying ***useDnaDefTP*** means using the value given by *defaultTransferPriority* in the associated *Dna* for this DLCI.
Mib	FrameRelayNni
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

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useDnaDefTP

Default useDnaDefTP

ATTRIBUTE FrNni Dlci Dc discardPriority (dp)

Access Read and write

Description This attribute specifies the discard priority for outgoing call using this DLCI.

The discard priority has three provisioning values: ***normal***, ***high***, and ***useDnaDefPriority***. Under congestion conditions, traffic with ***normal*** priority is discarded before traffic with ***high*** priority. The *Dna* default value (provisioned by *outDefaultPriority*) is taken if this attribute is set to the value ***useDnaDefPriority***.

Mib FrameRelayNni

Values normal
high
useDnaDefPriority

Default useDnaDefPriority

ATTRIBUTE FrNni Dlci Dc deDiscardPriority (ddp)

Access Read and write

Description This attribute specifies whether the *discardPriority* applies to DE frames for this DLCI.

When set to ***determinedByDiscardPriority***, traffic with DE bit set will be discarded according to the setting of the *discardPriority*.

When set to ***lowest***, all traffic with DE bit set is treated the same and is sent to the subnet at the lowest discard priority.

Mib FrameRelayNni

Values lowest
determinedByDiscardPriority

Default determinedByDiscardPriority

ATTRIBUTE FrNni Dlci Dc dataPath (dpa)

Access Read and write

Description

This attribute specifies the data path to be used by Virtual Circuits on this interface. The value of the *dataPath* attribute in the *Dna* component is overridden by this attribute if the value is not ***useDnaValue***.

This value applies to the connection after data transfer state is reached. All

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the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established.

The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection.

A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value.

dprsOnly - The dynamic packet routing system is used.

dprsMcsOnly - The DPRS Multi-Service Cut-Through Switching path is used.

dprsMcsFirst - The DPRS Multi-Service Cut-Through Switching path is used if it is available. If it is not available, ***dprsOnly*** is used.

useDnaValue - The routing system used is based on the value provisioned in the *Dna* component.

Mib: FrameRelayNni

Values:
dprsOnly (dpOnly)
dprsMcsOnly (mcOnly)
dprsMcsFirst (mcFrst)
useDnaValue (dnaVal)

Default: useDnaValue

ATTRIBUTE FrNni Dlci Dc cugIndex (ci)

Access: Read and write

Description

This attribute specifies the CUG index which is to be signaled in PVC and SPVC call requests to the remote end.

The type of CUG signaling is defined in attribute *cugType* in this component.

Mib: FrameRelayNni

Values: Decimal (0..255)

Default: 0

ATTRIBUTE FrNni Dlci Dc cugType (ct)

Access: Read and write

Description

This attribute specifies the type of CUG signaling to be used in PVC and SPVC call requests. Index of CUG to be used is defined in attribute *cugIndex* in this component.

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Possible values are:
cug - signal CUG
cugOa - signal CUG with outgoing access
doNotSignal - no CUG in call request

Mib	FrameRelayNni
Values	cug cugOa doNotSignal
Default	doNotSignal

ATTRIBUTE FrNni Dlci Dc mapIpCosToFrQos (mapctof)

Access	Read and write
Description	This attribute specifies whether an IP TOS value is mapped to an FR QOS. The mapping used is provisioned in the *Mod Frs IpCosToFrQos* component. When this attribute is set to ***yes***, at Frame Relay egress, the IP TOS byte in each frame is checked. The TOS value determines the egress emission queue and the discard priority for that frame. When this attribute is set to ***no***, FR QOS is determined by the provisioned discard priority and transfer priority. When this attribute is set to ***protocolDependent*** at Frame Relay egress, the IP version field in each frame is checked. If the IP version is IP version Four, the TOS value determines the egress emission queue and the discard priority for that frame. If not, the FR QOS is determined by the provisioned discard priority and transfer priority. A semantic check error is generated when this attribute is set to either ***yes*** or ***protocolDependent***, and a *FrUni DirectConnection* component is provisioned under the same *FrUni* component.
Mib	FrameRelayNni
Values	no yes protocolDependent
Default	no

COMPONENT FrNni Dlci Vc

Groups	GROUP FrNni Dlci Vc CallData (Cad) GROUP FrNni Dlci Vc IntervalData (Intd) GROUP FrNni Dlci Vc FrameRelayData (Frd)
Scope	Application

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Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	FrameRelayNni
Common Verbs	Help List Display

VERB Ping **FrNni Dlci Vc**

Impact	Passive
Description	Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/*<n>* Dlci/*<n>* Vc

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the

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sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP FrNni Dlci Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.

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Mib	FrameRelayNni
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE FrNni Dlci Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	FrameRelayNni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrNni Dlci Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	FrameRelayNni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrNni Dlci Vc diagnosticCode

Access	Read only

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Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrNni Dlci Vc **previousDiagnosticCode**

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrNni Dlci Vc **calledNpi**

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	FrameRelayNni
Values	x121 e164
Default	No default

ATTRIBUTE FrNni Dlci Vc **calledDna**

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	FrameRelayNni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrNni Dlci Vc **calledLcn**

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	FrameRelayNni

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Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrNni Dlci Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	FrameRelayNni
Values	x121 e164
Default	No default

ATTRIBUTE FrNni Dlci Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	FrameRelayNni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrNni Dlci Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	FrameRelayNni
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrNni Dlci Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	FrameRelayNni
Values	yes no
Default	No default

ATTRIBUTE FrNni Dlci Vc fastSelectCall

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Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	FrameRelayNni
Values	yes no
Default	No default

ATTRIBUTE FrNni Dlci Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	FrameRelayNni
Values	high normal
Default	No default

ATTRIBUTE FrNni Dlci Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	FrameRelayNni
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE FrNni Dlci Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	FrameRelayNni
Values	normal high
Default	No default

ATTRIBUTE FrNni Dlci Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	FrameRelayNni

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Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrNni Dlci Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	FrameRelayNni
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrNni Dlci Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	FrameRelayNni
Values	throughput delay multimedia
Default	No default

ATTRIBUTE FrNni Dlci Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	FrameRelayNni
Values	throughput delay multimedia
Default	No default

ATTRIBUTE FrNni Dlci Vc emissionPriorityToNetwork (epto)

Access	Read only
Description	This attribute displays the network internal emission priority to the network.
Mib	FrameRelayNni
Values	normal high interrupting

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Default	No default

ATTRIBUTE FrNni Dlci Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	FrameRelayNni
Values	normal high interrupting
Default	No default

ATTRIBUTE FrNni Dlci Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.
Mib	FrameRelayNni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE FrNni Dlci Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.

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Mib	FrameRelayNni
List of	The name of the component
Default	No default

GROUP FrNni Dlci Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	FrameRelayNni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrNni Dlci Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	FrameRelayNni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrNni Dlci Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails,

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when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.

Mib	FrameRelayNni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrNni Dlci Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	FrameRelayNni
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrNni Dlci Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	No default

GROUP FrNni Dlci Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a

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different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers

Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Vc frmCongestedToSubnet

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc cannotForwardToSubnet

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc outOfRangeFrmFromSubnet

Access	Read only

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Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrNni Dlci Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc frmLossTimeouts

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Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc ooSeqByteCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal

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	subnet packet disorder (not due to subnet packet discard). Current implementation also uses this statistics to set a maximum size for the out-of-sequenced queue.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	FrameRelayNni
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE FrNni Dlci Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.

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Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrNni Dlci Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	FrameRelayNni
Values	Decimal (0..50000)
Default	No default

COMPONENT FrNni Dlci ServiceParametersProv (Sp)

Groups	GROUP FrNni Dlci Sp ServiceParametersProv (Parms)
Scope	Application
Description	*FrNni/n Dlci/n ServiceParametersProv* This component contains the provisionable traffic control attributes for its parent *Dlci* component.
Mib	FrameRelayNni
Common Verbs	Help List Display

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GROUP FrNni Dlci Sp ServiceParametersProv (Parms)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Data Link Connection Identifier. These attributes reflect the service parameters specific to this instance of DLCI . The congestion control attributes in this group are defined in T1.606 Addendum 1.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Sp maximumFrameSize (n203)

Access	Read and write
Description	This attribute specifies the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.
Mib	FrameRelayNni
Values	Decimal (1..8187)
Units	octets
Default	2100

ATTRIBUTE FrNni Dlci Sp rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether rate enforcement is in effect for this user Data Link Connection on this Frame Relay interface. Turning on rate enforcement means that CIR and DE=1 traffic will be measured and enforced. Turning off rate enforcement means that all frames from the user will be accepted and no modifications to the frame with respect to the DE bit will be made.
Mib	FrameRelayNni
Values	off on
Default	off

ATTRIBUTE FrNni Dlci Sp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR) in bits per second (bit/s). When *rateEnforcement* is set to ***on***, *cir* is the rate at which the network agrees to transfer information under normal conditions. This

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rate is measured over a measurement interval (*t*) that is determined internally based on CIR and the committed burst size (Bc). An exception to this occurs when CIR is provisioned to be zero, in which case the measurement interval (*t*) must be provisioned explicitly.

This attribute is ignored when *rateEnforcement* is ***off***. If *rateEnforcement* is ***on*** and this attribute is ***0***, *Bc* must also be ***0***.

Mib	FrameRelayNni
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrNni Dlci Sp committedBurstSize (bc)

Access	Read and write

Description

This attribute specifies the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc.

This attribute is ignored when *rateEnforcement* is ***off***. If *rateEnforcement* is ***on*** and this attribute is ***0***, *cir* must also be ***0***.

Mib	FrameRelayNni
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrNni Dlci Sp excessBurstSize (be)

Access	Read and write

Description

This attribute specifies the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here.

CIR, Bc, and Be cannot all be zero when rateEnforcement is on.

Mib	FrameRelayNni
Values	Decimal (0..50000000)
Units	bits
Default	0

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ATTRIBUTE FrNni Dlci Sp measurementInterval (t)

Access	Read and write
Description	When *cir* and *bc* are zero and *rateEnforcement* is on, this attribute must be provisioned to specify the time interval (in milliseconds) over which rates and burst sizes are measured. When *cir* and *bc* are non-zero, the time interval is internally calculated and is *not shown*. In that situation, this field is ignored, and is not representative of the time interval. This attribute is ignored when *rateEnforcement* is ***off***, or when *cir* and *bc* are ***non-zero***. If *rateEnforcement* is ***on*** and both *cir* and *bc* are ***zero***, this field must be ***non-zero***.
Mib	FrameRelayNni
Values	Decimal (0..25500)
Units	msec
Default	0

ATTRIBUTE FrNni Dlci Sp rateAdaptation (ra)

Access	Read and write
Description	This attribute specifies whether rate adaptation is in effect for this user Data Link Connection on this Frame Relay interface. Rate adaptation is a feature that, in periods of congestion, adapts the rate at which the user is allowed to send data into the network to that which the network is able to handle at that time. This pro-active measure of handling congestion optimizes network resources by causing the ingress to discard frames that would otherwise be discarded in the network. If this attribute is set to ***on***, then, at the onset of congestion, the excess information rate (EIR) is reduced to a very low rate. If congestion persists, then the allowed CIR is reduced geometrically by 25% of the current value at that time. The minimum to which CIR can be reduced is 1/16th (6.25%) of the provisioned value. As congestion alleviates, CIR is increased linearly by 6.25% of the provisioned value specified in *committedInformationRate*. If set to ***eirOnly***, then rate adaptation will only apply to the excess information rate (EIR). At the onset of congestion, the allowed EIR is reduced by 25% of its provisioned value. If congestion persists, EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. If set to ***cirProportionate***, then rate adaptation will also only apply to the excess information rate (EIR). At the onset of congestion the initial allowed

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EIR is set to a multiple of the provisioned CIR. If congestion persists, the allowed EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. Note that the allowed EIR may be set higher than the provisioned EIR, since it is calculated initially using another parameter, the provisioned CIR. If the allowed EIR at the moment is higher than the provisioned EIR, then the provisioned EIR is used instead.

This attribute can only be set to ***on eirOnly*** or ***cirProportionate*** if *rateEnforcement* is turned ***on***.

This attribute must be set to ***off*** if the *BnxIwf* component is provisioned under this *Dlci*.

Mib — FrameRelayNni

Values
off
on
eirOnly
cirProportionate

Default — off

ATTRIBUTE FrNni Dlci Sp accounting (ac)

Access — Read and write

Description

This attribute specifies whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***accountingOn*** bit and at least one of the ***accountCollection*** bits in the ***DataNetworkAddress*** component must be set to on.

Mib — FrameRelayNni

Values
off
on

Default — on

ATTRIBUTE FrNni Dlci Sp raSensitivity (rasens)

Access — Read and write

Description — This attribute specifies the sensitivity of the rate adaptation system. A higher number indicates a higher sensitivity and therefore a quicker reaction time to network conditions. A quicker reaction time allows the network to discard frames at the access and protect network resources, but can lead to false alarms and a greater fluctuation of the allowed rate. A higher setting therefore tends to favour the protection of the network over the allowed throughput of the user.

A lower number indicates a lower sensitivity and therefore a slower reaction to network conditions. A slower reaction time results in a greater

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amount of user traffic allowed into the network, but can lead to a waste of network bandwidth since the traffic may be discarded at the congested resource. A lower setting therefore tends to favour the allowed throughput of the user over the protection of the network.

This attribute is applicable for adapting EIR when *rateAdaptation* is ***eirOnly*** or ***cirProportionate***, or CIR when *rateAdaptation* is ***on***.

This attribute is ignored if *rateAdaptation* is turned ***off***.

Mib FrameRelayNni

Values Decimal (1..20)

Default 7

ATTRIBUTE FrNni Dlci Sp updateBCI (updBCI)

Access Read and write

Description

This attribute specifies whether internal Backward Congestion Indication (BCI) bits will report congestion external to the network, as communicated through incoming BECN bits.

If *updateBCI* is set to ***on***, then BCI bits for incoming frames will be set if the BECN on the frame is set. If *updatBCI* is set to ***off***, then incoming BECN bits have no effect.

Setting *updateBCI* ***on*** for a DLCI means that the remote end of the DLCI, that is specified by the *remoteDna* and *remoteDlci* attributes of the *dc* component of the *dlci*, may perform Rate Adaptation using the flow of incoming BECN bits, in addition to internal congestion management systems.

If the *rateAdaptation* attribute of the remote DLCI is provisioned as ***eirOnly***, ***cirProportionate***, or ***on***, then congestion from another network may trigger dynamic congestion management. If the *rateAdaptation* attribute of the remote DLCI is provisioned to ***off***, then the setting of *updateBCI* attribute here has no effect.

Mib FrameRelayNni

Values off
on

Default off

ATTRIBUTE FrNni Dlci Sp correlationTag (ctag)

Access Read and write

Description This attribute specifies the unique string which identifies each end of a connection.

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If required for correlation purposes, the attribute must be provisioned with the same value at both ends of the connection.This attribute can be left as an empty string when the functionality is not required, or when the user requires an empty circuit identifier string against the DLCI.

This attribute can be used for off-switch data correlation purposes. Downstream processing uses this attribute to correlate data records (accounting etc.) issued at different nodes in the network. In the accounting record, the value for the *correlationTag* attribute appears as the attribute *circuitId* (circuit identifier) for the endpoint.

Mib FrameRelayNni

Values String (0..32, ASCII)

Default ""

COMPONENT FrNni Dlci LoopBack (Lb)

Groups GROUP FrNni Dlci Lb Statistics (Stats)

Scope Application

Description *FrUni/n Dlci/n LoopBackFrNni/n Dlci/n LoopBack*This component is the data loopback tool for the parent *DLCI*.

Mib FrameRelayNni

Common Verbs Help
List
Display

VERB START FrNni Dlci Lb

Impact Service

Description *start FrUni/n Dlci/n LoopBack*
*start FrNni/n Dlci/n LoopBack*This command resets the *LoopbackStatistics* and initiates the loopback mode. The *loopbackState* for this *DLCI* is set to ***on*** for the duration of the loopback mode. When a *DLCI* is in loopback mode, frames coming from the link are returned to the link, incrementing the local loopback statistics. Also, frames coming from the VC are returned to the VC, incrementing the remote loopback statistics. The loopback mode is ended using the stop command.

VERB STOP FrNni Dlci Lb

Impact Service

Description *stop FrUni/n Dlci/n LoopBack stop FrNni/n Dlci/n LoopBack* This command terminates the loopback mode and displays the loopback statistics.

GROUP FrNni Dlci Lb Statistics (Stats)

Properties Operational

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Description	This group contains all the statistics for the data loopback tool.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Lb localTotalFrm (ltf)

Access	Read only
Description	This attribute records the number of frames looped back to the link since loopback was last started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localTotalBytes (ltb)

Access	Read only
Description	This attribute records the number of bytes looped back to the link since loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localFecnFrm (lff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localBecnFrm (lbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localDeFrm (ldf)

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Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localDeBytes (ldb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteTotalFrm (rtf)

Access	Read only
Description	This attribute records the number of frames looped back to the subnet since loopback was last started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteTotalBytes (rtb)

Access	Read only
Description	This attribute records the number of bytes looped back to the subnet since loopback was last started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteFecnFrm (rff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the subnet since the loopback mode was started.

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Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteBecnFrm (rbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteDeFrm (rdf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteDeBytes (rdb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrNni Dlci EgressServiceParameters (EgressSp)

Groups	GROUP FrNni Dlci EgressSp Provisioned (Prov)
Scope	Application

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Description	*FrNni/n Dlci/n EgressServiceParameters* This component contains the provisionable attributes of the egress direction for the parent *Dlci* component.
Mib	FrameRelayNni
Common Verbs	Help List Display

GROUP FrNni Dlci EgressSp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for this component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci EgressSp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR) for the egress direction. It is used for Call Admission Control (CAC) at the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *committedInformationRate* attribute under the *ServiceParameters* component.
Mib	FrameRelayNni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bit/s
Default	sameAsServiceParameters

ATTRIBUTE FrNni Dlci EgressSp committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size (Bc) for the egress direction. It is used for performing Call Admission Control (CAC) at the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *committedBurstSize* attribute under the *ServiceParameters* component.
Mib	FrameRelayNni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bits

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Default	sameAsServiceParameters

ATTRIBUTE FrNni Dlci EgressSp excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size (Be) for the egress direction. It is used for Call Admission Control (CAC) function towards the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *excessBurstSize* attribute under the *ServiceParameters* component.
Mib	FrameRelayNni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bits
Default	sameAsServiceParameters

ATTRIBUTE FrNni Dlci EgressSp measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval over which rates and burst sizes are measured in the egress direction. It is used for bandwidth reservation for Call Admission Control (CAC) towards the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *measurementInterval* attribute under the *ServiceParameters* component.
Mib	FrameRelayNni
Values	Decimal (0..25500) sameAsServiceParameters (sameAsSp)
Units	msec
Default	sameAsServiceParameters

COMPONENT FrNni Dlci BnxInterworkingFunction (BnxIwf)

Groups	GROUP FrNni Dlci BnxIwf Provisioned (Prov) GROUP FrNni Dlci BnxIwf Operational (Op)
Scope	Application
Description	*FrUni/n Dlci/n BnxInterworkingFunction* *FrNni/n Dlci/n BnxInterworkingFunction* This component specifies that the parent DLCI uses BNX frame relay over

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an IP network as its networking mechanism. It contains the networking parameters specific to BNX networking.

Mib — FrNniPvcBnx

Common Verbs
- Help
- List
- Display
- Add
- DELete

VERB Redirect FrNni Dlci Bnxlwf

Impact — Service

Description

*Redirect [-**force**] -**destination**(<**destination**>) FrUni/n Dlci/n BnxInterworkingFunction*
or
*Redirect [-**force**] -**destination**(<**destination**>) FrNni/n Dlci/n BnxInterworkingFunction*

This verb is used to manually select the PVC destination between the primary and backup destinations, or to enable the automatic redirection. The primary destination and the backup destination are specified by the *BnxInterworkingFunction* component.

The ***-destination*** option indicates the destination of PVC redirection. The value of this option can be ***primary***, ***backup,*** or ***onDemand***.

The value ***primary*** means that the destination for this PVC has been manually selected to be the primary destination, automatic redirection is disabled. This redirect action corresponds to the “Redirect to Primary” redirect action in the BNX implementation.

The value ***backup*** means that the destination for this PVC has been manually selected to be the backup destination, and automatic redirection is disabled. The backup destination must be provisioned. This redirect action corresponds to the “Redirect to Backup” redirect action in the BNX implementation.

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The value ***onDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The *crossNetListenEnabled* attribute of the *BnxProtocol* component must be ***yes*** and the backup destination must be provisioned. This redirect action corresponds to the “Switch on Demand” redirect action in the BNX implementation.

The ***-force*** option specifies that the PVC is redirected to either the primary destination or the backup destination indicated by the ***-destination*** option even if the destination is not active. When the value of ***-destination*** is ***onDemand***, this option is ignored.

GROUP FrNni Dlci Bnxlwf **Provisioned (Prov)**

Properties	Provisioned
Description	This group defines the provisioning attributes associated with a PVC using BNX frame relay interworking.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Dlci Bnxlwf **calledIpAddress (cia)**

Access	Read and write
Description	This attribute specifies the IP address of the primary destination which receives the datagrams.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Dlci Bnxlwf **calledDlci (cdlci)**

Access	Read and write
Description	This attribute specifies the DLCI of the primary destination which receives the datagrams.
Mib	FrNniPvcBnx
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf **trafficPriority (tp)**

Access	Read and write
Description	This attribute specifies the user control on traffic priority. The value is transmitted in the traffic priority field of the BNX header. Possible values are: ***1*** - High Priority ***2*** - Normal Priority

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	3 - Low Priority ***useBpDefault*** - use the *defaultTrafficPriority* attribute value from the *BnxProtocol* component.
Mib	FrNniPvcBnx
Values	1 2 3 useBpDefault
Default	useBpDefault

ATTRIBUTE FrNni Dlci Bnxlwf backupCalledIpAddress (bcia)

Access	Read and write
Description	This attribute specifies the IP address of the backup destination which receives the datagrams. A value of ***0.0.0.0*** for this attribute and a value of ***undefined*** for the *backupCalledDlci* attribute specify that there is no backup destination.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Dlci Bnxlwf backupCalledDlci (bcdlci)

Access	Read and write
Description	This attribute specifies the DLCI of the backup destination which receives the datagrams. A value of ***undefined*** for this attribute and a value of ***0.0.0.0*** for the *backupCalledIpAddress* attribute specify that there is no backup destination.
Mib	FrNniPvcBnx
Values	Decimal (16..1007) undefined
Default	undefined

ATTRIBUTE FrNni Dlci Bnxlwf redirectType (rtype)

Access	Read and write
Description	This attribute indicates the type of DTE notification when a PVC redirection between primary and backup destinations occurs. ***transparent*** means no notification is sent to the DTE. ***aIntrusive*** means that an asynchronous update with the A-bit not set is sent to the DTE.

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nIntrusive means that an asynchronous update with the N-bit set is sent to the DTE.

Mib	FrNniPvcBnx
Values	transparent aIntrusive nIntrusive
Default	aIntrusive

ATTRIBUTE FrNni Dlci Bnxlwf minActiveIntervals (mai)

Access	Read and write
Description	This attribute specifies the minimum number of consecutive time intervals for which the primary destination must be active before the PVC is redirected back to the primary destination from the backup destination in ***switchOnDemand*** mode. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***. If the value of this attribute is ***0***, the PVC is redirected back to the primary destination as soon as an active cross-net message is received from the primary destination.
Mib	FrNniPvcBnx
Values	Decimal (0..4)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf redirectAction (ra)

Access	Read and write
Description	This attribute indicates the redirect action for a PVC. The Redirect command can be used to override this redirect action. ***switchOnDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The *crossNetListenEnabled* attribute of the *BnxProtocol* component must be ***yes*** and the backup destination must be provisioned. This redirect action corresponds to the “Switch on Demand” redirect action in the BNX implementation. ***manualPrimary*** means that the destination for this PVC has been manually selected to be the primary destination, automatic redirection is disabled. This redirect action corresponds to the “Redirect to Primary” redirect action in the BNX implementation. ***manualBackup*** means that the destination for this PVC has been manually selected to be the backup destination, and automatic redirection

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is disabled. The backup destination must be provisioned. This redirect action corresponds to the “Redirect to Backup” redirect action in the BNX implementation.

Mib	FrNniPvcBnx
Values	switchOnDemand manualPrimary manualBackup
Default	manualPrimary

GROUP FrNni Dlci Bnxlwf Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the BNX frame relay interworking functionality.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Dlci Bnxlwf timeOfLastStateChange (tlsc)

Access	Read only
Description	This attribute indicates the time at which the state of the DLCI last changed.
Mib	FrNniPvcBnx
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf crossNetSent (cnsent)

Access	Read only
Description	This attribute indicates if a cross-net status message was sent to the primary destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component.
Mib	FrNniPvcBnx
Values	unsent sent
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf crossNetStatus (cns)

Access	Read only
Description	This attribute indicates the state of the PVC when the remote end is the primary destination. If the *crossNetListenEnabled* attribute of the *BnxProtocol* component is set to ***yes***, this attribute reflects the state as

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reported by the remote end. If the *crossNetListenEnabled* attribute is set to ***no***, the PVC is assumed to be up and this attribute has a value of ***active***.

Mib	FrNniPvcBnx
Values	inactive active
Default	inactive

ATTRIBUTE FrNni Dlci Bnxlwf **crossNetReceived (cnr)**

Access	Read only
Description	This attribute indicates if the DLCI has received a cross-net status message from the primary destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.
Mib	FrNniPvcBnx
Values	unrecv recv
Default	unrecv

ATTRIBUTE FrNni Dlci Bnxlwf **crossNetErrors (cne)**

Access	Read only
Description	This attribute counts how many polling intervals have elapsed without receiving an error free cross-net status message from the primary destination of the PVC. Errors are generally caused by time-outs. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf **ipAddressMismatches (iam)**

Access	Read only
Description	This attribute counts the received datagrams which were dropped because the source IP address in the IP header did not match the value of *calledIpAddress* or *backupCalledIpAddress* attribute. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrNni Dlci Bnxlwf **lastMismatchedIpAddress (lmia)**

Access	Read only
Description	This attribute indicates the source IP address in the IP header of the most recently received datagram which was dropped because this IP address did not match the value of *calledIpAddress* or *backupCalledIpAddress* attribute.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Dlci Bnxlwf **backupCrossNetSent (bcnsent)**

Access	Read only
Description	This attribute indicates if a cross-net status message was sent to the backup destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component.
Mib	FrNniPvcBnx
Values	unsent sent
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf **backupCrossNetStatus (bcns)**

Access	Read only
Description	This attribute indicates the state of the PVC when the remote end is the backup destination. If the *crossNetListenEnabled* attribute of the *BnxProtocol* component is set to ***yes***, this attribute reflects the state as reported by the remote end. If the *crossNetListenEnabled* attribute is set to ***no***, the PVC is assumed to be up and this attribute has a value of ***active***.
Mib	FrNniPvcBnx
Values	inactive active
Default	inactive

ATTRIBUTE FrNni Dlci Bnxlwf **backupCrossNetReceived (bcnr)**

Access	Read only
Description	This attribute indicates if the DLCI has received a cross-net status message from the backup destination of the PVC during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval*

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attribute of the *BnxProtocol*. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.

Mib	FrNniPvcBnx
Values	unrecv recv
Default	unrecv

ATTRIBUTE FrNni Dlci Bnxlwf **backupCrossNetErrors (bcne)**

Access	Read only
Description	This attribute counts how many polling intervals have elapsed without receiving an error free cross-net status message from the backup destination of the PVC. Errors are generally caused by time-outs. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf **redirectMode (rmode)**

Access	Read only
Description	This attribute indicates the mode of the PVC redirection. The value ***switchOnDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The value ***manual*** means that the destination for this PVC has been manually selected and automatic redirection is disabled. When the value is ***noBackup***, the PVC does not have a backup destination provisioned.
Mib	FrNniPvcBnx
Values	switchOnDemand manual noBackup
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf **currentDestination (cdest)**

Access	Read only
Description	This attribute indicates if the current destination is the primary destination or the backup destination.

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Mib	FrNniPvcBnx
Values	primary backup
Default	No default

ATTRIBUTE FrNni Dlci BnxIwf remoteIpAddress (ria)

Access	Read only
Description	This attribute indicates the IP address of the current destination.
Mib	FrNniPvcBnx
Values	IP address
Default	No default

ATTRIBUTE FrNni Dlci BnxIwf remoteDlci (rdlci)

Access	Read only
Description	This attribute indicates the DLCI of the current destination.
Mib	FrNniPvcBnx
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrNni Dlci BnxIwf ipFragFromSubnet (fragfs)

Access	Read only
Description	This attribute counts the IP fragments received from subnet by this Dlci. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci BnxIwf discardedIpFragments (discFrag)

Access	Read only
Description	This attribute counts the IP fragments that are dropped by this Dlci. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci BnxIwf discMisorderedFrm (dmfrm)

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Access	Read only
Description	This attribute counts the frames from subnet that are dropped due to misordered fragments. A misordered fragment occurs when the offset in the IP header is not equal to the expected offset, or the timer expires before the last fragment is received. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf lastDroppedIpFragmentId (lastid)

Access	Read only
Description	This attribute indicates the Id of the last misordered frame that was dropped.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrNni VirtualFramer (VFramer)

Groups	GROUP FrNni VFramer Provisioned (Prov) GROUP FrNni VFramer OsiState (State) GROUP FrNni VFramer Statistics (Stats)
Scope	Application
Description	*FrUni/n VirtualFramer* *FrDte/n VirtualFramer* The *VirtualFramer* component binds two services together to provide data transfer between them. It is mutually exclusive from *Framer* component.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni VFramer Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *VirtualFramer* component.
Mib	FrameRelayNni

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ATTRIBUTE FrNni VFramer **otherVirtualFramer (ovf)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the other *VirtualFramer* to which the service is linked, for example, *FrUni/n VirtualFramer*, *FrDte/n VirtualFramer.*
Mib	FrameRelayNni
Values	Link (Service, otherVirtualFramer)
Default	No default

ATTRIBUTE FrNni VFramer **logicalProcessor (lp)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the service component will reside.
Mib	FrameRelayNni
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP FrNni VFramer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayNni

ATTRIBUTE FrNni VFramer **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting

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	down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayNni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni VFramer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayNni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni VFramer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

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GROUP FrNni VFramer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *VirtualFramer* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni VFramer frmToOtherVFramer

Access	Read only
Description	This attribute counts the frames transmitted to the *otherVirtualFramer*.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni VFramer frmFromOtherVFramer

Access	Read only
Description	This attribute counts the frames received from the *otherVirtualFramer*.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni VFramer octetFromOtherVFramer

Access	Read only
Description	This attribute counts the octets received from the *otherVirtualFramer*.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni VFramer discFrmFromOtherVFramer (discFrmFromOvf)

Access	Read only
Description	This attribute counts the discarded frames from the *otherVirtualFramer*. Incrementing of this counter indicates that some incoming traffic cannot be handled by the FP.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

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COMPONENT FrNni Signaling (Sig)

Groups	GROUP FrNni Sig Prov GROUP FrNni Sig ServiceParameters (ServParms) GROUP FrNni Sig SystemParameters (SysParms) GROUP FrNni Sig LapfSystemParameters (LapfSys) GROUP FrNni Sig LastSvcClearCodes (Codes) GROUP FrNni Sig OsiState (State) GROUP FrNni Sig Statistics (Stats) GROUP FrNni Sig LapfStatus GROUP FrNni Sig LapfStatistics (LapfStats) GROUP FrNni Sig FrsSvcAcc (Svcacc)
Scope	Application
Description	*FrNni/n Signaling* This component defines the FRF.10 and Q.922 (LAPF) parameters for Frame Relay switched virtual circuits at the Network-Network interface. This component must be provisioned for the *FrNni* interface to support switched connections.
Mib	FriNniSig
Common Verbs	Help List Display Add DELete

GROUP FrNni Sig Prov

Properties	Provisioned
Description	This group contains common provisionable attributes for signaling at the interface.
Mib	FriNniSig

ATTRIBUTE FrNni Sig dlciAllocation

Access	Read and write
Criticality	Process
Description	This attribute specifies the order in which DLCIs are dynamically allocated for SVCs. The purpose of this attribute is to prevent DLCI collisions between SVCs initiated by two FrNni interfaces talking to each other. This is achieved by provisioning a different value for this attribute at each end of the NNI link. A value of ***fromLowEnd*** specifies that the DLCI number assignment for SVC connections is initiated from the lowest value of the range (that is, *highestPvcDlci*+1 up to 1007).

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	A value of ***fromHighEnd*** specifies that the DLCI number assignment for SVC connections is initiated from the highest value of the range (that is, 1007 down to *highestPvcDlci*+1).
Mib	FriNniSig
Values	fromLowEnd fromHighEnd
Default	fromLowEnd

ATTRIBUTE FrNni Sig highestPvcDlci

Access	Read and write
Criticality	Process
Description	This attribute specifies the highest DLCI value that can be provisioned for a permanent connection. It partitions the DLCI space into permanent and switched connections. Permanent DLCI numbers higher than this value cannot be provisioned. The value ***0*** is used to indicate that no permanent connections are allowed on this interface. The value ***1007*** indicates that no switched connections are allowed on this interface.
Mib	FriNniSig
Values	Decimal (0; 16..1007)
Default	500

GROUP FrNni Sig ServiceParameters (ServParms)

Properties	Provisioned
Description	This group contains the provisionable service parameters.
Mib	FriNniSig

ATTRIBUTE FrNni Sig maximumFrameSize (dn1)

Access	Read and write
Description	This attribute specifies the maximum number of octets that may be included in the information field of the user DLCI of any switched connections using this interface. Its value must not be smaller than the value of *defaultMaximumFrameSize*.
Mib	FriNniSig
Values	Decimal (1..8187)
Units	octets
Default	4096

ATTRIBUTE FrNni Sig defaultMaximumFrameSize (defaultdn1)

Access	Read and write

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Description	This attribute specifies the default maximum number of octets that may be included in the information field of the user DLCI assigned for any switched connections using this interface. This value is used during call parameter negotiation for switched calls on this interface when the maximum frame size is not specified in the user's SETUP message. The value of this attribute must not exceed the value of the *maximumFrameSize* attribute.
Mib	FriNniSig
Values	Decimal (1..8187)
Units	octets
Default	2100

ATTRIBUTE FrNni Sig defaultCommittedInformationRate (defaultCir)

Access	Read and write
Description	This attribute specifies the default user to network direction CIR. This value is used during call parameter negotiation for switched calls on this interface when the CIR is not specified in the user's SETUP message.
Mib	FriNniSig
Values	Decimal (0..52000000)
Units	bit/s
Default	64000

ATTRIBUTE FrNni Sig defaultCommittedBurstSize (defaultBc)

Access	Read and write
Description	This attribute specifies the default user to network direction Bc. This value is used during call parameter negotiation for switched calls on this interface when the Bc is not specified in the user's SETUP message.
Mib	FriNniSig
Values	Decimal (0..52000000)
Units	bits
Default	64000

ATTRIBUTE FrNni Sig defaultExcessBurstSize (defaultBe)

Access	Read and write
Description	This attribute specifies the default user to network direction Be. This value is used during call parameter negotiation for switched calls on this interface when the Be is not specified in the user's SETUP message.
Mib	FriNniSig

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Values	Decimal (0..52000000)
Units	bits
Default	0

ATTRIBUTE FrNni Sig rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether rate enforcement is in effect for SVCs on this interface.
Mib	FriNniSig
Values	off on
Default	on

ATTRIBUTE FrNni Sig rateAdaptation (ra)

Access	Read and write
Description	This attribute specifies whether closed-loop rate adaptation is in effect for SVCs on this interface. Rate adaptation is a feature that, in periods of congestion, adapts the rate at which the user is allowed to send data into the network to that which the network is able to handle at that time. This proactive measure of handling congestion optimizes network resources by causing the ingress to discard frames that would otherwise be discarded in the network. If this attribute is set to ***on***, then, at the onset of congestion, the excess information rate (EIR) is reduced to a very low rate. If congestion persists, then the allowed CIR is reduced geometrically by 25% of the current value at that time. The minimum to which CIR can be reduced is 1/16th (6.25%) of the provisioned value. As congestion alleviates, CIR is increased linearly by 6.25% of the provisioned value specified in *committedInformationRate*. If set to ***eirOnly***, then rate adaptation will only apply to the excess information rate (EIR). At the onset of congestion, the allowed EIR is reduced by 25% of its provisioned value. If congestion persists, EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. If set to ***cirProportionate***, then rate adaptation will also only apply to the excess information rate (EIR). At the onset of congestion the initial allowed EIR is set to a multiple of the provisioned CIR. If congestion persists, the allowed EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. Note that the allowed EIR may be set higher than the provisioned EIR, since it is calculated initially using another

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parameter, the provisioned CIR. If the allowed EIR at the moment is higher than the provisioned EIR, then the provisioned EIR is used instead.

This attribute can only be set to ***on*** or ***eirOnly*** if *rateEnforcement* is set to ***on***.

Mib: FriNniSig

Values:
off
on
eirOnly
cirProportionate

Default: off

ATTRIBUTE FrNni Sig raSensitivity (rasens)

Access: Read and write

Description: This attribute specifies the sensitivity of the rate adaptation system for all switched connections on this interface.

A higher number indicates a higher sensitivity and therefore a quicker reaction time to network conditions. A quicker reaction time allows the network to discard frames at the access and protect network resources, but can lead to false alarms and a greater fluctuation of the allowed rate. A higher setting therefore tends to favor the protection of the network over the allowed throughput of the user.

A lower number indicates a lower sensitivity and therefore a slower reaction to network conditions. A slower reaction time results in a greater amount of user traffic allowed into the network, but can lead to a waste of network bandwidth since the traffic may be discarded at the congested resource. A lower setting therefore tends to favour the allowed throughput of the user over the protection of the network.

This attribute is applicable for adapting EIR when *rateAdaptation* is ***eirOnly*** or ***cirProportionate***, or CIR when *rateAdaptation* is ***on***.

This attribute is ignored if *rateAdaptation* is ***off***.

Mib: FriNniSig

Values: Decimal (1..20)

Default: 7

ATTRIBUTE FrNni Sig updateBCI (updBCI)

Access: Read and write

Description: This attribute specifies whether internal Backward Congestion Indication (BCI) bits will report congestion external to the network, as communicated through incoming BECN bits.

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If *updateBCI* is set to ***on***, then BCI bits for incoming frames will be set if the BECN on the frame is set. If *updateBCI* is set to ***off***, then incoming BECN bits has no effect.

Setting *updateBCI* ***on*** for a DLCI means that the remote end of the DLCI, which is specified by the *remoteDna* and *remoteDlci* attributes of the *Dc* component of the *Dlci*, may perform Rate Adaptation using the flow of incoming BECN bits, in addition to internal congestion management systems.

If the *rateAdaptation* attribute of the remote DLCI is provisioned as ***eirOnly***, ***cirProportionate***, or ***on***, then congestion from another network may trigger dynamic congestion management. If there is no rate adaptation at the other end, then the setting of *updateBCI* attribute here has no effect.

Mib	FriNniSig
Values	off on
Default	off

GROUP FrNni Sig SystemParameters (SysParms)

Properties	Provisioned
Description	This group contains the provisionable FRF.10 system parameters.
Mib	FriNniSig

ATTRIBUTE FrNni Sig callSetupTimer (t303)

Access	Read and write
Description	This attribute specifies the time this interface waits for a response to the SETUP message sent to the adjacent network. Upon timer expiry, the SETUP message is retransmitted. The second expiry of this timer causes the call to be cleared.
Mib	FriNniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrNni Sig releaseTimer (t308)

Access	Read and write
Description	This attribute specifies the time this interface waits for a response to the RELEASE message sent to the adjacent network. Upon timer expiry, the RELEASE message is retransmitted. The second expiry of the timer causes the call to be released.

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Mib	FriNniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrNni Sig callProceedingTimer (t310)

Access	Read and write
Description	This attribute specifies the time this interface waits for the CONNECT message from the adjacent network after the network has received the optional CALL PROCEEDING message from the adjacent network. Upon timer expiry, the call is cleared.
Mib	FriNniSig
Values	Decimal (1..255)
Units	seconds
Default	30

ATTRIBUTE FrNni Sig restartReqTimer (t316)

Access	Read and write
Description	This attribute specifies the time this interface waits for the RESTART ACKNOWLEDGE message from the adjacent network after sending a first RESTART message. Upon timer expiry, another RESTART message is sent. After the second expiry, the interface is treated as idle. If the *restartReqTimer* attribute is set to the default value, then the interface is treated as idle when it receives an indication that the link is up and does not send a RESTART message.
Mib	FriNniSig
Values	Decimal (0..255)
Units	seconds
Default	0

ATTRIBUTE FrNni Sig restartRcvTimer (t317)

Access	Read and write
Description	This attribute specifies the time this interface waits for the processing of a RESTART message received by the interface. Upon expiry of this timer, an alarm will be displayed to report the problem. The timer value must be less than the *restartReqTimer* provisioned value at the adjacent node.
Mib	FriNniSig
Values	Decimal (1..255)

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Units	seconds
Default	110

ATTRIBUTE FrNni Sig statusEnqTimer (t322)

Access	Read and write
Description	This attribute specifies the time the network waits for the requested STATUS message from the adjacent network. Upon expiry of this timer, another STATUS ENQUIRY message will be sent.
Mib	FriNniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrNni Sig networkType (type)

Access	Read and write
Description	This attribute specifies whether this Frame Relay service is running on a public or a private network. This value is used solely in populating applicable information elements within those signaling messages that require a public or private network indication.
Mib	FriNniSig
Values	private public
Default	private

GROUP FrNni Sig LapfSystemParameters (LapfSys)

Properties	Provisioned
Description	This group contains the provisionable attributes for the SVC data link layer. The data link layer is governed primarily through ITU specification Q.922, and operates over DLCI 0.
Mib	FriNniSig

ATTRIBUTE FrNni Sig windowSize (ws)

Access	Read and write
Description	This attribute specifies the window size. This is the maximum number of unacknowledged sequenced frames that may be outstanding from or to this interface at any one time.
Mib	FriNniSig
Values	Decimal (1..127)
Default	7

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ATTRIBUTE FrNni Sig retransmitLimit (rtl)

Access	Read and write
Description	This attribute specifies the number of times a frame can be retransmitted by the SVC data link layer before appropriate recovery action is taken.
Mib	FriNniSig
Values	Decimal (0..20)
Default	3

ATTRIBUTE FrNni Sig ackTimer (at)

Access	Read and write
Description	This attribute specifies how long the layer 2 protocol waits for an acknowledgment to a sent frame. The value set for *ackTimer* must be less than the value set for *idleProbeTimer*.
Mib	FriNniSig
Values	Decimal (1000..10000)
Units	msec
Default	1500

ATTRIBUTE FrNni Sig ackDelayTimer (adt)

Access	Read and write
Description	This attribute specifies how long the network waits before sending an acknowledgment for a received in-sequence I-frame. A value of 0 means that every frame is acknowledged and there will be no delay in acknowledgment. A non-zero value means that one acknowledgement is sent for a number of frames.
Mib	FriNniSig
Values	Decimal (0..10000)
Units	msec
Default	0

ATTRIBUTE FrNni Sig idleProbeTimer (ipt)

Access	Read and write
Description	This attribute specifies how long the link is permitted to remain idle (that is, no frames are exchanged on the data link). Upon expiry of this timer, the network side's link layer polls its peer for status. The value set for *idleProbeTimer* must be greater than the value set for *ackTimer*.
Mib	FriNniSig
Values	Decimal (1000..65535000)

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Units	msec
Default	30000

GROUP FrNni Sig LastSvcClearCodes (Codes)

Properties	Operational
Description	This group contains the remote data network address, the last SVC clear cause and the last SVC diagnostic code coming from the subnet or the local VC.
Mib	FriNniSig

ATTRIBUTE FrNni Sig lastClearRemoteDataNetworkAddress

Access	Read only
Description	This attribute indicates the Data Network Address (DNA) of the remote (the other end of the SVC connection) of the call which cleared last and whose clear and diagnostic codes were recorded.
Mib	FriNniSig
Values	BCD (0..15)
Default	No default

ATTRIBUTE FrNni Sig lastClearCause

Access	Read only
Description	This attribute indicates the last SVC clear cause signalled at the end of the connection or failure to connect. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The same set of possible values provides the clear cause field in the accounting record.
Mib	FriNniSig
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrNni Sig lastDiagnosticCode

Access	Read only
Description	This attribute indicates the last SVC diagnostic code signalled at the end of the connection or failure to connect. It is updated if the clear request comes from the subnet or the call is rejected locally by the VC. The same set of possible values provides the diagnostic code field in the accounting record.
Mib	FriNniSig
Values	Decimal (0..255)

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Default	0

GROUP FrNni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FriNniSig

ATTRIBUTE FrNni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FriNniSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni Sig operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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	with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FriNniSig
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni Sig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FriNniSig
Values	idle active (activ) busy
Default	idle

GROUP FrNni Sig Statistics (Stats)

Properties	Operational
Description	This group contains the statistics related to the SVC signaling layer at the interface level.
Mib	FriNniSig

ATTRIBUTE FrNni Sig currentNumberOfSvcCalls (ncall)

Access	Read only
Description	This attribute indicates the number of Frame Relay SVCs currently existing on this interface.
Mib	FriNniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrNni Sig inCalls (incall)

Access	Read only

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Description	This attribute indicates the current number of incoming SVCs on this interface (that is, the number of SVCs for which this interface represents the destination end of the call).
Mib	FriNniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrNni Sig inCallsRefused (icr)

Access	Read only
Description	This attribute counts the incoming SVC call requests that are rejected by either this interface or by the called user. When this count exceeds the maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig outCalls (outcall)

Access	Read only
Description	This attribute indicates the current number of outgoing SVCs on this interface (that is, the number of SVCs for which this interface represents the source end of the call).
Mib	FriNniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrNni Sig outCallsFailed (ocf)

Access	Read only
Description	This attribute counts the outgoing SVC call requests that are rejected by either this interface, or by the network side of the destination end, or by the called user. When this count exceeds the maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig protocolErrors (pe)

Access	Read only
Description	This attribute counts the number of times a FRF.10 protocol error has occurred. Any one of the following events constitutes a protocol error: 1. In the user-signaled *Link Layer Core Parameters* IE within the

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	SETUP or CONNECT messages, *Cir*, *Bc* and *Be* are all zero; 2. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir* is zero but *Bc* is non-zero, or *Bc* is zero but *Cir* is non-zero; 3. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, the *Minimum Acceptable CIR* is greater than *Cir*; 4. At the destination end, any of the destination to source direction link layer core parameters has been increased in the CONNECT message from the called user; 5. At the destination end, the destination to source direction *Cir* in the CONNECT message is smaller than the corresponding *minimum acceptable Cir* signaled to the called user; 6. At the source end, any of the source to destination direction link layer core parameters in the CONNECT message from the destination end has been increased; 7. At the source end, the source to destination direction *Cir*, after negotiation, is smaller than the corresponding *minimum acceptable Cir*; 8. The network has received a STATUS message from the user with an incompatible FRF.10 state. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig qualityOfServiceNotAvailable (qosna)

Access	Read only
Description	This attribute counts the number of incoming and outgoing SVCs that are rejected because the quality of service requested cannot be met by the network. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig setupTimeout (setupt)

Access	Read only
Description	This attribute counts the number of times the T303 setup timer has expired. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE FrNni Sig lastCauseInStatusMsgReceived (lcis)

Access	Read only
Description	This attribute indicates the cause value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is **0** which means that no STATUS message has been received for an existing call yet.
Mib	FriNniSig
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrNni Sig lastStateInStatusMsgReceived (lsis)

Access	Read only
Description	This attribute indicates the state value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is ***notApplicable***.
Mib	FriNniSig
Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active releaseRequest releaseIndication restartRequest restart notApplicable 2 4 5 7 8 13 14 15 16 17 18 19 21 22

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Default notApplicable

ATTRIBUTE FrNni Sig lastDlciReceivedStatus (ldrs)

Access Read only

Description This attribute shows the value of the DLCI that has most recently received a STATUS message from the user.

The initial value of this attribute is ***0***.

Mib FriNniSig

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Values	Decimal (0; 16..1007)
Default	0

ATTRIBUTE FrNni Sig lastStateReceivedStatus (lsrs)

Access	Read only
Description	This attribute shows the network FRF.10 state of the DLCI that has most recently received a STATUS message from the user. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is ***notApplicable***.
Mib	FriNniSig
Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active releaseRequest releaseIndication restartRequest restart notApplicable
Default	notApplicable

ATTRIBUTE FrNni Sig dlciCollisions

Access	Read only
Description	This attribute counts the number of call failures due to DLCI collisions.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig bandwidthNotAvailable

Access	Read only
Description	This attribute counts the number of call failures for each bandwidth pool due to the requested bandwidth not being available.
Mib	FriNniSig
Vector of	Decimal (0..4294967295)
Index	Decimal (0..15)
Default	No default

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GROUP FrNni Sig LapfStatus

Properties	Operational
Description	This group contains the Q.922 SVC data link layer status.
Mib	FriNniSig

ATTRIBUTE FrNni Sig currentState (currState)

Access	Read only
Description	This attribute shows the current state of the SVC data link layer interface.
Mib	FriNniSig
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE FrNni Sig lastStateChangeReason (lscr)

Access	Read only
Description	This attribute shows the reason for the most recent state change. ***notStarted*** - this is the default state after SVC data link has just been created. ***abmeEntered*** - SVC data link has entered Asynchronous Balanced Mode after SABME or UA has been received. ***abmeReset*** - the data link has been reset. ***dmReceived*** - DM response received. ***dmSent*** - DM sent. ***discReceived*** - DISC response received. ***discSent*** - DISC sent. ***frmrReceived*** - FRMR received. ***n200RetranTimeOut -*** *retransmitLimit* has been exceeded. ***other*** - unspecified state change reasons. The most likely reason for this is the transition from state ***waitingAck*** to state ***informationTransfer***.
Mib	FriNniSig
Values	notStarted abmeEntered abmeReset dmReceived dmSent discReceived discSent frmrReceived

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	n200RetranTimeOut other
Default	notStarted

ATTRIBUTE FrNni Sig frmrReceive (frmrr)

Access	Read only
Description	This attribute shows the information field of the Frame Reject (FRMR) most recently received.
Mib	FriNniSig
Values	String (0..8, Hex)
Default	No default

ATTRIBUTE FrNni Sig currentQueueSize (queues)

Access	Read only
Description	This attribute shows the current number of frames in the SVC data link layer transmit queue.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

GROUP FrNni Sig LapfStatistics (LapfStats)

Properties	Operational
Description	This group contains the statistics for the SVC data link layer.
Mib	FriNniSig

ATTRIBUTE FrNni Sig remoteBusy

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig receiveRejectFrame

Access	Read only
Description	This attribute counts the number of REJ frames received by the interface. When this count reaches maximum, it wraps to zero.

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Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig ackTimeout

Access	Read only
Description	This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate a problem at the link or improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote sides. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig iFramesTransmitted

Access	Read only
Description	This attribute counts the number of SVC I-frames transmitted to the interface on DLCI 0. An I-frame may be counted more than once if there are retransmissions at the SVC data link layer. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig iFramesTxDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames that are bound for the link but have been discarded. Discard reasons may be one of the following: 1. the frame length is beyond the allowed limit. 2. the SVC data link layer is in ***disconnected*** state. 3. the transmit queue has been purged because the queue length has reached the reset threshold. 4. the transmit queue or the queue waiting for acknowledgment has been purged because the link cannot be re-established. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE FrNni Sig iFramesReceived

Access	Read only
Description	This attribute counts the number of SVC I-frames received from the interface. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig iFramesRcvdDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames received but have been discarded. The discard reasons are: 1. incorrect frame size 2. frame is out of sequence 3. frame received while the network side of the SVC data link layer is not in the ***informationTransfer*** or ***waitingAck*** state. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig stateChange

Access	Read only
Description	This attribute counts the number of times the SVC data link layer interface has changed state. While the data link layer is in ***informationTransfer*** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from ***informationTransfer*** to ***waitingAck*** and back. When this count exceeds the maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

GROUP FrNni Sig FrsSvcAcc (Svcacc)

Properties	Provisioned
Description	This group contains the provisionable attribute which controls accounting for this interface.
Mib	FriNniSig

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ATTRIBUTE FrNni Sig defaultAccounting (defAcc)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether accounting data collection and record generation is turned on for switched connections at this interface. For accounting data collection and record generation to occur, this attribute must be ***on*** and at least one of the *accountCollection* reasons in the *Dna* component must be present.
Mib	FriNniSig
Values	off on
Default	on

COMPONENT FrNni LoadTestSystem (Lts)

Groups	GROUP FrNni Lts Setup (Setup) GROUP FrNni Lts OperationalState (State) GROUP FrNni Lts Results (Results)
Scope	Application
Description	*FrUni/n LoadTestSystem* *FrNni/n LoadTestSystem* This component defines an instance of the Frame Relay Load Test System (UNI) service. The component instance value n is a unique positive integer within a module.
Mib	FrameRelayNni
Subcomponents	COMPONENT FrNni Lts Pattern (Pat)
Common Verbs	Help List Display Add DELete

VERB START FrNni Lts

Impact	Service
Description	*START FrUni/n Lts* This verb starts the load generator. The load generator can be stopped by issuing the stop verb.

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VERB STOP FrNni Lts

Impact	Service
Description	*STOP FrUni/n Lts* This verb stops the traffic generator.

VERB RESET FrNni Lts

Impact	Service
Description	*RESET FrUni/n Lts* This verb clears the TestStatistics

GROUP FrNni Lts **Setup (Setup)**

Properties	Operational
Description	This attribute group contains the parameters used to configure the behavior of the Frame Relay Load Test System.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts **duration (dur)**

Access	Read and write
Description	This attribute specifies the duration of the test in milliseconds. The test will run until the duration expires or the STOP command is issued. A value of 0 is used to indicate infinity.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE FrNni Lts **algorithm (alg)**

Access	Read and write
Description	This attribute specifies which algorithm is used to generate the frames. **ContinuousBurst** This mode of traffic generation creates traffic at the maximum rate possible until all of the frames have been sent. The generator then waits until the end of the timeInterval to begin again. **IntervalBurst** This algorithm attempts to generate 10 ms bursts of burstSize frames. It will generate as many of the burstSize frames as it can per sub-interval. **DelayedBurst** This algorithm generates bursts of burstSize frames separated by 10 ms delays.

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FixedBurst
This aglorithm is similar to IntervalBurst, except a fixed burst size of 12 frames is used.

delayMeasurement
This algorithm is used to measure delay. The specified number of frames in the indicated pattern are generated, one at a time, with a maximum wait of maxDelay before sending the next frame.
This algorithm is not implemented yet.

Mib	FrameRelayNni
Values	continousBurst (cont) intervalBurst (int) delayBurst (delay) fixedBurst (fixed)
Default	continousBurst

ATTRIBUTE FrNni Lts burstSize (fpb)

Access	Read and write
Description	This attribute specifies the number of frames per burst under the delayedBurst and intervalBurst algorithms.
Mib	FrameRelayNni
Values	Decimal (1..250)
Default	50

ATTRIBUTE FrNni Lts timeInterval (tint)

Access	Read and write
Description	This attribute specifies the time interval to the specified number of seconds. Granuality is in centiseconds. Maximum is 1 minute.
Mib	FrameRelayNni
Values	Decimal (1..60000)
Units	csec
Default	100

GROUP FrNni Lts OperationalState (State)

Properties	Operational
Description	This group contains the operation statistics of the load generator.
Mib	FrameRelayNni

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ATTRIBUTE FrNni Lts generatorState (gstate)

Access	Read only
Description	This attribute indicates whether the Lts is generating traffic.
Mib	FrameRelayNni
Values	stopped running
Default	stopped

ATTRIBUTE FrNni Lts cycleIncomplete (cycle)

Access	Read only
Description	This attribute indicates whether the time required to generate all of the enabled patterns is more than timeInterval by a true value. Otherwise, this flag is set to false. Default is True.
Mib	FrameRelayNni
Values	false true
Default	true

ATTRIBUTE FrNni Lts lastActiveInterval (actInt)

Access	Read only
Description	This attribute indicates the actual time it took to generate all of the enabled patterns in the last cycle. If cycleIncomplete is true, this value should be zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	microsec
Default	No default

ATTRIBUTE FrNni Lts load

Access	Read only
Description	This attribute indicates the load being generated. This value represents that calculated using the set number of ticks. The actual burstTimeInterval may differ. One entire cycle of the patterns is completed in activeInterval and thus most of the load may be concentrated early in the set interval.
Mib	FrameRelayNni
Values	Decimal (0.000..4294967.295)
Units	kbit/s

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Default	No default

ATTRIBUTE FrNni Lts elapsedGenerationTime (etime)

Access	Read only
Description	This attribute indicates how many milliseconds have elapsed since the start of this test.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP FrNni Lts Results (Results)

Properties	Operational
Description	This group contains the frame counting attributes for the LTS component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts framesTx

Access	Read only
Description	This attribute specifies the number of frames send to the network since the last time these statistics were cleared. This is similar to the framesToIf attribute of the FRAMER component.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lts bytesTx

Access	Read only
Description	This attribute indicates the number of bytes sent.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	bytes
Default	0

ATTRIBUTE FrNni Lts bitRateTx

Access	Read only
Description	This attribute indicates the bit rate being sent to the link. It should only differ from the load if the burstTimeInterval would be >= the timeInterval or burstSize frames cannot be generated in 10ms (intervalBurst algorithm).

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Mib	FrameRelayNni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	0.000

ATTRIBUTE FrNni Lts frameRateTx

Access	Read only
Description	This attribute indicates the frame rate being sent to the link. It is calculated using the number of frames sent to the link in one cycle of the patterns.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	frame/s
Default	0

COMPONENT FrNni Lts Pattern (Pat)

Instance	Decimal (0..29)
Groups	GROUP FrNni Lts Pat Defaults (Defaults) GROUP FrNni Lts Pat Setup (Setup) GROUP FrNni Lts Pat OperationalData (OpData) GROUP FrNni Lts Pat OperationalState (OpState)
Scope	Application
Description	FrUni/n Lts Pattern FrNni/n Lts Pattern Each instance of this component specifies a pattern to be generated as part of each cycle. One cycle represents one pass through each pattern.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

VERB TRIGGER FrNni Lts Pat

Impact	Service
Description	TRIGGER FrUni/x Lts Pattern/y This verb triggers the single execution of the specified pattern. In order for this command to be executed, the Lts component cannot be generating traffic.

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GROUP FrNni Lts Pat Defaults (Defaults)

Properties	Provisioned
Description	This attribute group contains the specifications of the pattern.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts Pat defaultDlci (dDlci)

Access	Read and write
Description	This attribute specifies for which DLCI (on the local end) the frames are destined.
Mib	FrameRelayNni
Values	Decimal (16..1007)
Default	16

ATTRIBUTE FrNni Lts Pat defaultNumFrames (dNum)

Access	Read and write
Description	This attribute specifies the number of frames in this pattern. This is the number of frames of this type that are generated in one time interval.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	100

ATTRIBUTE FrNni Lts Pat defaultDataSize (dSize)

Access	Read and write
Description	This attribute specifies the payload size of each frame in bytes. This is in excess to the header.
Mib	FrameRelayNni
Values	Decimal (0..8200)
Units	octets
Default	512

ATTRIBUTE FrNni Lts Pat defaultHeaderBits (dBits)

Access	Read and write
Description	This attribute specifies whether specific bits are on/off in the header of each frame.

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Mib	FrameRelayNni
Set of	becn fecn cr de
Default	No default

ATTRIBUTE FrNni Lts Pat defaultHeaderLength (dLen)

Access	Read and write
Description	This attribute specifies the size of the frame relay header in bytes. Only 2-byte headers are supported at this time.
Mib	FrameRelayNni
Values	Decimal (0; 2..4)
Units	octets
Default	2

ATTRIBUTE FrNni Lts Pat defaultEABits (dEABits)

Access	Read and write
Description	This attribute specifies how the address field extension bits are set in the frame header. Consider the value to be a four bit binary number. For example, 4 = 0100. Only the first *headerLength* bits are used. For instance, suppose headerLength is 3, then the appropriate EABits is 2, or 0010. This attribute can be used to create a header of length greater than two bytes or to specify incorrect EABits in the header.
Mib	FrameRelayNni
Values	Hex (H.0..H.f)
Default	H.4

ATTRIBUTE FrNni Lts Pat defaultPayloadPattern (dPattern)

Access	Read and write
Description	This attribute specifies the payload of each frame. The value specified is in hexadecimal, where every two digits represent a byte. A maximum of 24 digits (12 bytes) may be set, after which the pattern will repeat in the payload (depending on the *repeatPattern* attribute). NOTE: If an RFC 1490 header is specified, via the 1490Header attribute, the specified pattern will begin following the header (that is, at the 9th byte in the payload).
Mib	FrameRelayNni
Values	String (1..12, Hex)

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Default	55

ATTRIBUTE FrNni Lts Pat defaultRfc1490Header (d1490)

Access	Read and write
Description	This attribute specifies the appropriate RFC 1490 encapsulated header of the frame. A value of 0 indicates no 1490 header. NOTE: This header resides in the first 8 bytes of the payload. If the specified value is non-zero, then the payload pattern provisioned will begin at the 9th byte.
Mib	FrameRelayNni
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 none
Default	none

ATTRIBUTE FrNni Lts Pat defaultUseBadLrc (dBadLrc)

Access	Read and write
Description	This attribute specifies whether the frames from this pattern are to have a bad LRC prior to being sent to the framer. The LRC is checked while the frame is being put onto the link and the failure should cause an abort frame to be sent.
Mib	FrameRelayNni
Values	no yes
Default	no

GROUP FrNni Lts Pat Setup (Setup)

Properties	Operational

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Description	This attribute group contains the specifications of the pattern.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts Pat dlci

Access	Read and write
Description	This attribute specifies for which DLCI (on the local end) the frames are destined.
Mib	FrameRelayNni
Values	Decimal (16..1007)
Default	16

ATTRIBUTE FrNni Lts Pat numFrames (num)

Access	Read and write
Description	This attribute specifies the number of frames in this pattern. This is the number of frames of this type that are generated in one time interval.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	100

ATTRIBUTE FrNni Lts Pat dataSize (size)

Access	Read and write
Description	This attribute specifies the payload size of each frame in bytes. This is in excess to the header.
Mib	FrameRelayNni
Values	Decimal (0..8200)
Units	octets
Default	512

ATTRIBUTE FrNni Lts Pat headerBits (bits)

Access	Read and write
Description	This attribute specifies whether the following bits are on/off in the header of each frame.
Mib	FrameRelayNni
Set of	becn fecn cr de

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Default	No default

ATTRIBUTE FrNni Lts Pat headerLength (len)

Access	Read and write
Description	This attribute specifies the size of the frame relay header in bytes. Only 2-byte headers are supported at this time. Valid values are 0, 2, 3, 4. 0 indicates to use no header. That is, the frame starts with either the payload or an RFC 1490 header.
Mib	FrameRelayNni
Values	Decimal (0; 2..4)
Units	octets
Default	2

ATTRIBUTE FrNni Lts Pat eaBits

Access	Read and write
Description	This attribute specifies how the address field extension bits are set in the frame header. Consider the value to be a four bit binary number. For example, 4 = 0100. Only the first headerLength bits are used. For instance, suppose headerLength is 3, then the appropriate eaBits is 2, or 0010. This attribute can be used to create a header of length greater than two bytes or to specify incorrect eaBits in the header.
Mib	FrameRelayNni
Values	Hex (H.0..H.f)
Default	H.4

ATTRIBUTE FrNni Lts Pat payloadPattern (pattern)

Access	Read and write
Description	This attribute specifies the payload of each frame. The value specified is in hexadecimal, where every two digits represent a byte. A maximum of 24 digits (12 bytes) may be set, after which the pattern repeats in the payload (depending on *repeatPattern* attribute). NOTE: If an RFC 1490 header is specified, via the *1490Header* attribute, the specified pattern begina following the header (that is, at the 9th byte in the payload).
Mib	FrameRelayNni
Values	String (1..12, Hex)
Default	55

ATTRIBUTE FrNni Lts Pat rfc1490Header (rfc)

Access	Read and write

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Description	This attribute specifies the appropriate RFC 1490 encapsulated header of the frame. A value of 0 indicates no 1490 header. NOTE: This header resides in the first 8 bytes of the payload. If the specified value is non-zero, then the payload pattern provisioned will begin at the 9th byte.
Mib	FrameRelayNni
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 none
Default	none

ATTRIBUTE FrNni Lts Pat useBadLrc

Access	Read and write
Description	This attribute specifies whether the frames from this pattern are to have a bad LRC prior to being sent to the framer. The LRC is checked while the frame is being put onto the link and the failure should cause an abort frame to be sent.
Mib	FrameRelayNni
Values	no yes
Default	no

GROUP FrNni Lts Pat OperationalData (OpData)

Properties	Operational
Description	This group contains the operational attributes which allow changing the pattern outside of provisioning mode.
Mib	FrameRelayNni

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ATTRIBUTE FrNni Lts Pat **framePattern**

Access	Read only
Description	This attribute displays the first 20 to 24 bytes of the frame payload, depending on the frame relay header size selected. This attribute represents the frame if it were at least 20 to 24 bytes in size. That is, the actual frame may be smaller.
Mib	FrameRelayNni
Values	String (20..24, Hex)
Default	No default

ATTRIBUTE FrNni Lts Pat **hdlcBitsInserted (hdlc)**

Access	Read only
Description	This attribute displays how many times a zero bit will be inserted after 5 consecutive 1 bits when a frame from this pattern is sent out.
Mib	FrameRelayNni
Values	Decimal (0..65535)
Default	No default

GROUP FrNni Lts Pat **OperationalState (OpState)**

Properties	Operational
Description	This group contains the attributes containing the operational statistics of the pattern.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts Pat **load**

Access	Read only
Description	This attribute indicates the load due to this particular pattern. The loads associated with all of the provisioned patterns are summed to arrive at the FrLts load.
Mib	FrameRelayNni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	No default

ATTRIBUTE FrNni Lts Pat **status**

Access	Read and write
Description	This attributes specifies the administrative state of the pattern. A disabled pattern is not generated, although it can still be triggered.

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Mib	FrameRelayNni
Values	disabled enabled
Default	enabled

COMPONENT FrNni ServiceTrace (SrvTrace)

Groups	GROUP FrNni SrvTrace Operational
Scope	Application
Description	*FrUni/n ServiceTrace* *FrNni/n ServiceTrace* The *ServiceTrace* component of the Frame Relay service determines if the trace capability is allowed on this interface. If it is not provisioned, then a service trace session cannot be started on this service. Frame Relay service trace is restricted to use FrameRelay, X25 or ATM service trace receiver. If the *SrvTrace rcvr* operational attribute is set to a string name of FrAtm service trace receiver, *Start* command will return a “Receiver Not Supported” response.
Mib	FrameRelayNniTrace
Dyn. Subcomp.	COMPONENT FrNni SrvTrace Filter
Common Verbs	Help List Display Add DELete

VERB Start FrNni SrvTrace

Impact	Service
Description	*Start FrUni/n ServiceTrace* *Start FrNni/n ServiceTrace* This command starts a Frame Relay service trace session.

VERB Stop FrNni SrvTrace

Impact	Service
Description	*Stop FrUni/n ServiceTrace* *Stop FrNni/n ServiceTrace* This command stops a Frame Relay service trace session.

GROUP FrNni SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.

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Mib	FrameRelayNniTrace

ATTRIBUTE FrNni SrvTrace **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	FrameRelayNniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE FrNni SrvTrace **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	FrameRelayNniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE FrNni SrvTrace **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayNniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE FrNni SrvTrace **session**

Access	Read only

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Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	FrameRelayNniTrace
Values	The name of the component
Default	No default

COMPONENT FrNni SrvTrace Filter

Groups	GROUP FrNni SrvTrace Filter Operational
Scope	Application
Description	*FrUni/n SrvTrace Filter* *FrNni/n SrvTrace Filter* The *Filter* component defines the type of traced data that is sent to the receiver. The *Filter* component provides default values for all its attributes which are sufficient to start a trace session. If required, these attributes may be changed before or during a trace session.
Mib	FrameRelayNniTrace
Common Verbs	Help List Display

GROUP FrNni SrvTrace Filter Operational

Properties	Operational
Description	This group provides the operational attributes for the Frame Relay *SrvTrace Filter* component.
Mib	FrameRelayNniTrace

ATTRIBUTE FrNni SrvTrace Filter traceType (type)

Access	Read and write
Description	This attribute specifies the level of filtering required for this trace session. A value of ***lmi*** indicates that LMI frames are traced. A value of ***dlci*** indicates that frames from the *Dlci* specified by the *tracedDlci* attribute are traced. A value of ***badFrames*** indicates that bad received frames (overruns, CRC errors, aborts) are traced. The default is to trace all frames. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayNniTrace
Set of	lmi dlci badFrames

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Default	(lmi, dlci, badFrames)

ATTRIBUTE FrNni SrvTrace Filter **tracedDlci (dlci)**

Access	Read and write
Description	This attribute specifies a particular DLCI to trace. A value of ***0*** specifies that all DLCIs are to be traced. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayNniTrace
Values	Decimal (0..1007)
Default	0

ATTRIBUTE FrNni SrvTrace Filter **direction (dir)**

Access	Read and write
Description	This attribute specifies the direction of the data to be traced as viewed by the service. The values can be ***egress*** and ***ingress***. An ***egress*** value indicates frames outbound from the service. An ***ingress*** value indicates frames inbound to the service. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayNniTrace
Set of	egress ingress
Default	(egress, ingress)

ATTRIBUTE FrNni SrvTrace Filter **tracedLength (len)**

Access	Read and write
Description	This attribute specifies the maximum number of octets to trace per frame starting from the octet following the frame flag. If the frame length is longer than the value specified by this attribute, then the traced frame is truncated. If set to ***disabled***, the traced frame is not truncated. This attribute can be set while a trace is active and takes effect immediately. If the Frame Relay *SrvTrace* is started with an ATM service trace receiver, the *tracedLength* attribute of ATM service trace receiver is ignored.
Mib	FrameRelayNniTrace
Values	Decimal (1..4000) disabled
Units	octets
Default	2000

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COMPONENT FrNni ConnectionAdministrator (Ca)

Groups	GROUP FrNni Ca Provisioned (Prov) GROUP FrNni Ca IngressCac GROUP FrNni Ca EgressCac GROUP FrNni Ca Operational (Op)
Scope	Application
Description	*FrNni/n ConnectionAdministrator* The *Ca* component allows the network operator to specify common subscription options for the parent interface. It defines the call admission control parameters in the ingress and egress direction for the parent interface.
Mib	FrameRelayNni
Opt. Subcomp.	COMPONENT FrNni Ca TransferPriorityMapping (Tpm)
Common Verbs	Help List Display

GROUP FrNni Ca Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes of the *Ca* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca overrideLinkRate (ovLinkRate)

Access	Read and write
Criticality	Process
Description	This attribute allows the link rate to be overridden for this interface. This allows the user to specify a value other than the actual physical link rate computed when a *Framer* component is provisioned. When a *VFramer* component is provisioned, this attribute overrides a link rate set to the maximum value supported by CAC . This attribute serves to provide the user control on the amount of bandwidth available for performing CAC.
Mib	FrameRelayNni
Values	Decimal (0..429496729)
Units	bit/s
Default	0

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ATTRIBUTE FrNni Ca maximumBandwidthPerCall (maxBwCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum bandwidth that can be allocated per connection.
Mib	FrameRelayNni
Values	Decimal (0..520000000)
Units	bit/s
Default	520000000

GROUP FrNni Ca IngressCac

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes for ingress call admission control.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca ingressApplyToCos (ingCos)

Access	Read and write
Criticality	Process
Description	This attribute specifies which Classes of Service (CoS) have ingress Call Admission Control (CAC) applied to them. Ingress CAC applies only to switched connections (SVCs and S-SPVCs). ***none*** - Ingress CAC is turned off for all classes of service. ***cirOnly*** - Ingress CAC is applied only to the CIR portion of a connection's bandwidth requirements for CIR>0 classes of service. ***cirAndEir*** - Ingress CAC is applied to both CIR and EIR portions of a connections bandwidth requirements for all classes of service.
Mib	FrameRelayNni
Values	none cirOnly cirAndEir
Default	cirOnly

ATTRIBUTE FrNni Ca ingressMaximumEirOnlyCalls

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections in the ingress direction with EIR only traffic that can be up at a given time.

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Mib	FrameRelayNni
Values	Decimal (0..992)
Default	992

ATTRIBUTE FrNni Ca ingressCirBandwidthPool (ingCirBP)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the ingress CIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayNni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

ATTRIBUTE FrNni Ca ingressEirBandwidthPool (ingEirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the ingress EIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayNni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

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GROUP FrNni Ca EgressCac

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes for egress call admission control.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca egressApplyToCos (egCos)

Access	Read and write
Criticality	Process
Description	This attribute specifies which Classes of Service (CoS) have egress Call Admission Control (CAC) applied to them. Egress CAC applies only to switched connections (SVCs and S-SPVCs). ***none*** - Egress CAC is turned off for all classes of service. ***cirOnly*** - Egress CAC is applied only to the CIR portion of a connection's bandwidth requirements for CIR>0 classes of service. ***cirAndEir*** - Egress CAC is applied to both CIR and EIR portions of a connections bandwidth requirements for all classes of service.
Mib	FrameRelayNni
Values	none cirOnly cirAndEir
Default	none

ATTRIBUTE FrNni Ca egressMaximumEirOnlyCalls

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections in the egress direction with EIR only traffic that can be up at a given time.
Mib	FrameRelayNni
Values	Decimal (0..992)
Default	992

ATTRIBUTE FrNni Ca egressCirBandwidthPool (egCirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the egress CIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the

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	port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayNni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

ATTRIBUTE FrNni Ca egressEirBandwidthPool (egEirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the egress EIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayNni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrNni Ca Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *Ca* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca linkRate (linkRate)

Access	Read only
Description	This attribute indicates the link rate used by both ingress and egress CAC to calculate the effective bandwidth pool sizes. If the provisionable attribute *overrideLinkRate* under this component is 0,

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	then the link rate reported is the actual link rate of the port or channel. Otherwise, the link rate reported is the *overrideLinkRate* under this component.
Mib	FrameRelayNni
Values	Decimal (0..520000000)
Units	bit/s
Default	No default

ATTRIBUTE FrNni Ca ingressCirPoolAdmittedBandwidth (ingCirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted CIR bandwidth from each CIR bandwidth pool in the ingress direction. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayNni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca ingressCirPoolAvailableBandwidth (ingCirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available CIR bandwidth in each ingress CIR bandwidth pool.
Mib	FrameRelayNni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca egressCirPoolAdmittedBandwidth (egCirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted CIR bandwidth from each CIR bandwidth pool in the egress direction. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayNni
Vector of	Decimal (0..520000000)

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Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca egressCirPoolAvailableBandwidth (egCirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available CIR bandwidth in each egress CIR bandwidth pool.
Mib	FrameRelayNni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca ingressEirPoolAdmittedBandwidth (ingEirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted EIR bandwidth from each EIR bandwidth pool in the ingress direction. Each value is the sum of the equivalent bit rates of the admitted connections. If the *ingressApplyToCos* attribute is set to ***none***, all ingress CIR bandwidth pools are set to 0.
Mib	FrameRelayNni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca ingressEirPoolAvailableBandwidth (ingEirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available EIR bandwidth in each ingress EIR bandwidth pool. If the *ingressApplyToCos* attribute is set to either ***none*** or ***cirOnly***, all ingress EIR bandwidth pools are set to 0.
Mib	FrameRelayNni
Vector of	Decimal (0..52000000)

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Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca egressEirPoolAdmittedBandwidth (egEirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted EIR bandwidth from each EIR bandwidth pool in the egress direction. Each value is the sum of the equivalent bit rates of the admitted connections. If the *egressApplyToCos* attribute is set to ***none***, all egress CIR bandwidth pools are set to 0.
Mib	FrameRelayNni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca egressEirPoolAvailableBandwidth (egEirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available EIR bandwidth in each egress EIR bandwidth pool. If the *egressApplyToCos* attribute is set to either ***none*** or ***cirOnly***, all egress EIR bandwidth pools are set to 0.
Mib	FrameRelayNni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca numberRejectedEgressCirPermConn (numRegEgCirPerm)

Access	Read only
Description	This attribute indicates the number of permanent connections (that is, PVC and P-SPVC) that are rejected by egress CAC. A connection is rejected by egress CAC if it requests more egress CIR bandwidth than is available, and the *egressApplyToCos* attribute is set to either ***cirOnly*** or ***cirAndEir***.
Mib	FrameRelayNni

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Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrNni Ca numberRejectedEgressEirPermConn (numRegEgEirPerm)

Access	Read only
Description	This attribute indicates the number of permanent connections (that is, PVC and P-SPVC) that are rejected by egress CAC. A connection is rejected by egress CAC if it requests more egress EIR bandwidth than is available, and the *egressApplyToCos* attribute is set to ***cirAndEir***.
Mib	FrameRelayNni
Values	Decimal (0..992)
Default	No default

COMPONENT FrNni Ca TransferPriorityMapping (Tpm)

Instance	Decimal (0..15)
Groups	GROUP FrNni Ca Tpm Provisioned (Prov)
Scope	Application
Description	*FrNni/n Ca TransferPriorityMapping/n* The *Tpm* component defines the corresponding traffic management subscription options on a *FrNni* interface corresponding to a particular transfer priority. This component is needed only if there is a requirement to override the *Mod Frs DprsNet Tpm* component defaults.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni Ca Tpm Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *Tpm* component at this interface.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca Tpm assignedIngressBandwidthPool (asgInBwPool)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the ingress bandwidth pool which is used to support this transfer priority at this interface. When this attribute is set to ***sameAsModule***, the bandwidth pool that is used is obtained from the *assignedIngressBandwidthPool* attribute under the *Mod Frs DprsNet Tpm/n* component.
Mib	FrameRelayNni
Values	Decimal (0..15) sameAsModule
Default	sameAsModule

ATTRIBUTE FrNni Ca Tpm assignedEgressBandwidthPool (asgEgBwPool)

Access	Read and write
Criticality	Process
Description	This attribute specifies the egress bandwidth pool which is used to support this transfer priority at this interface. When this attribute is set to ***sameAsModule***, the bandwidth pool that is used is obtained from the *assignedEgressBandwidthPool* attribute under the *Mod Frs DprsNet Tpm/n* component.
Mib	FrameRelayNni
Values	Decimal (0..15) sameAsModule
Default	sameAsModule

COMPONENT FrNni BnxProtocol (Bp)

Groups	GROUP FrNni Bp Provisioned (Prov) GROUP FrNni Bp OsiState (State) GROUP FrNni Bp Operational (Op)
Scope	Application
Description	*FrUni/n BnxProtocol* *FrNni/n BnxProtocol* This component defines how the Frame Relay interface handles the BNX protocol.
Mib	FrNniPvcBnx
Common Verbs	Help List Display Add DELete

GROUP FrNni Bp Provisioned (Prov)

Properties	Provisioned

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Description	This group defines the provisioning attributes to control the BNX protocol running on the Frame Relay interface.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Bp linkToIpServer (linkToIp)

Access	Read and write
Description	This attribute specifies the link to a Frame Relay IP server.
Mib	FrNniPvcBnx
Values	Link (Service, linkToFrameRelayApps)
Default	No default

ATTRIBUTE FrNni Bp ipAddress (ipadd)

Access	Read and write
Description	This attribute specifies the IP address associated with the Frame Relay interface. This address must be in the same subnet as the *ProtocolPort* associated with the *FrIpServer*.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Bp crossNetEnabled (cne)

Access	Read and write
Description	This attribute specifies whether or not cross-net status messages are sent from the Frame Relay interface.
Mib	FrNniPvcBnx
Values	no yes
Default	yes

ATTRIBUTE FrNni Bp crossNetPollingInterval (cnpi)

Access	Read and write
Description	This attribute specifies the time interval between two cross-net status messages. This attribute is used for both sending and expecting status messages. The two ends of a PVC should be provisioned with values within a close range. Otherwise, it could result in PVC failure.
Mib	FrNniPvcBnx
Values	Decimal (30..86400)
Units	seconds

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Default	120

ATTRIBUTE FrNni Bp crossNetAsyncUpdate (cnau)

Access	Read and write
Description	This attribute specifies when a cross-net status message is sent following a BNX DLCI state change. If set to ***enabled***, the status message is sent as soon as the state change occurs. If set to ***disabled***, the state of the BNX DLCI will be sent in a cross-net status message only at the next polling interval. The polling interval is determined by *crossNetPollingInterval* attribute. The *crossNetAsyncUpdate* attribute is ignored if *crossNetEnabled* is set to ***no***.
Mib	FrNniPvcBnx
Values	disabled enabled
Default	enabled

ATTRIBUTE FrNni Bp crossNetListenEnabled (cnle)

Access	Read and write
Description	This attribute specifies whether or not to expect cross-net status messages. When set to ***yes***, this interface wait for a cross-net status message from the remote end to declare the PVCs up or down. When set to ***no***, the interface assumes the PVCs are always up.
Mib	FrNniPvcBnx
Values	no yes
Default	yes

ATTRIBUTE FrNni Bp crossNetErrorThreshold (cnet)

Access	Read and write
Description	This attribute specifies how many *crossNetPollingIntervals* without receiving a status message from the remote end are permitted to elapse before declaring the PVC down.
Mib	FrNniPvcBnx
Values	Decimal (1..30)
Default	3

ATTRIBUTE FrNni Bp trafficPriorityEnabled (tpe)

Access	Read and write
Description	This attribute specifies how to set the "Priority Level" field of the BNX header. When set to ***no***, both the *defaultTrafficPriority* attribute of the *BnxProtocol* component and the *trafficPriority* attribute of the *BnxIwf*

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component are ignored, and the "Priority Level" field is set to ***2***. When set to ***yes***, the "Priority Level" field is set to the value of the *trafficPriority* attribute of the *BnxIwf*, unless the *trafficPriority* attribute has a value of ***useDefault***. In this case the “Priority Level” field is set to the value of the *defaultTrafficPriority* attribute.

Mib	FrNniPvcBnx
Values	no yes
Default	no

ATTRIBUTE FrNni Bp defaultTrafficPriority (dtp)

Access	Read and write
Description	This attribute specifies the default traffic priority used to tag all the ingress traffic. This attribute is used when the *trafficPriority* attribute of the *BnxIwf* is set to ***useDefault***. A larger value denotes a lower priority. This attribute is ignored if the *trafficPriorityEnabled* is set to ***no***.
Mib	FrNniPvcBnx
Values	Decimal (1..3)
Default	2

ATTRIBUTE FrNni Bp trafficDiscardLevel (tdl)

Access	Read and write
Description	This attribute specifies the discard level used to tag ingress traffic.This value is ignored when the attribute *discardLevelEnabled* is set to ***no***. In this case, the "Discard Level" field of BNX header is set to ***2*** for DE=1 datagrams and to ***4*** for DE=0 datagrams. When *discardLevelEnabled* is set to ***yes***, the "Discard Level" field is tagged with the value of *trafficDiscardLevel* attribute. The "Discard Level" value is used as follows: Discard Level=***1***: drop datagrams when congestion level >= 1 Discard Level=***2***: drop datagrams when congestion level >= 2 Discard Level=***3***: drop datagrams when congestion level >= 3 Discard Level=***4***: drop datagrams when congestion level >= 4
Mib	FrNniPvcBnx
Values	Decimal (1..4)
Default	4

ATTRIBUTE FrNni Bp discardLevelEnabled (dle)

Access	Read and write
Description	This attribute specifies how to use discard level to tag ingress traffic. When set to ***yes***, the provisioned *trafficDiscardLevel* is used. Otherwise ingress DE=1 datagrams are tagged with discard level ***2*** and DE=0 datagrams are tagged with discard level ***4***.

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Mib	FrNniPvcBnx
Values	no yes
Default	no

GROUP FrNni Bp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Bp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrNniPvcBnx
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni Bp operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrNniPvcBnx
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni Bp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrNniPvcBnx
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrNni Bp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	FrNniPvcBnx
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrNni Bp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	FrNniPvcBnx
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrNni Bp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	FrNniPvcBnx
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrNni Bp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — FrNniPvcBnx

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE FrNni Bp standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	FrNniPvcBnx
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrNni Bp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrNniPvcBnx
Values	false true
Default	false

GROUP FrNni Bp Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *BnxProtocol* component.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Bp invalidBnxHeader (ibh)

Access	Read only
Description	This attribute counts the datagrams dropped because the BNX header was invalid. It could be caused by a invalid header version, invalid protocol type, or that discard level or priority level is out of range.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastInvalidBnxHeader (libh)

Access	Read only
Description	This attribute indicates the BNX header of the datagram which was last dropped by the *BnxProtocol* because one or more fields of the BNX

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	header are invalid. The invalid field could be any of the following: header version, protocol type, discard level out of range, priority level out of range.
Mib	FrNniPvcBnx
Values	Hex (H.0..H.ffffffff)
Default	No default

ATTRIBUTE FrNni Bp invalidIpProtocolId (ipid)

Access	Read only
Description	This attribute counts the datagrams dropped because the protocol ID in IP header was invalid.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp discardedIpFragment (dipf)

Access	Read only
Description	This attribute counts the total number of fragmented datagrams dropped by this interface. The case could be unknown Dlci, or unknown ID in IP header when misordering happened.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp sourceIpAddressLastDropped (ldsia)

Access	Read only
Description	This attribute indicates the source IP address of the datagram that was last dropped by the *BnxProtocol* because one or more fields of the IP header are invalid. The invalid field could be any of the following: header version, protocol ID, or Identification of a fragmented datagram.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Bp droppedUnknownDlci (dud)

Access	Read only
Description	This attribute counts the datagrams dropped because the DLCI was unknown.
Mib	FrNniPvcBnx

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Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastUnknownDlci (lud)

Access	Read only
Description	This attribute indicates the DLCI of datagram last dropped.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp droppedUnknownDlciXnet (dudx)

Access	Read only
Description	This attribute counts the received cross-net status messages that were dropped because the DLCI was unknown.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastUnknownDlciXnet (ludx)

Access	Read only
Description	This attribute indicates the DLCI of last received cross-net status message that was dropped because the DLCI was unknown.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp ipFragFromSubnet (fragfs)

Access	Read only
Description	This attribute counts the IP fragments received from subnet by this frame relay interface. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastInvalidIpFragId (lastid)

Access	Read only

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Description	This attribute indicates the Id in the IP header of the last fragment dropped by the frame relay interface.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastDlciWithIpFragment (lfdlci)

Access	Read only
Description	This attribute indicates the Dlci which last received IP fragment. This attribute is used for tracking fragmented IP traffic.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrNni

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Language type: U.S. English

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrUni

NN10600-060

Document status: Standard
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Type: NTP
Language type: U.S. English

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COMPONENT FrameRelayUni (FrUni)

Instance	Decimal (1..4294967295)
Groups	GROUP FrUni CustomerIdentifierData (CidData) GROUP FrUni OsiState (State) GROUP FrUni Statistics (Stats) GROUP FrUni IfEntryProv (IfEntry) GROUP FrUni OperationalStatus (OperStatus) GROUP FrUni EmissionPriorityQs GROUP FrUni TrafficStatistics (TrafficStats)
Scope	Application
Description	*FrameRelayUni/n* This component defines an instance of the Frame Relay UNI service. The component instance value n is a unique positive integer within a module.

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	Framer is created whenever the FrUni is added. Users who need VirtualFramer should delete the Framer first, then add the VirtualFramer.
Mib	FrameRelayUni
Subcomponents	COMPONENT FrUni DataNetworkAddress (Dna) COMPONENT FrUni LocalManagementInterface (Lmi) COMPONENT FrUni ConnectionAdministrator (Ca)
Opt. Subcomp.	COMPONENT FrUni Framer COMPONENT FrUni Signaling (Sig) COMPONENT FrUni VirtualFramer (VFramer) COMPONENT FrUni LoadTestSystem (Lts) COMPONENT FrUni DirectConnection (Dconn) COMPONENT FrUni ServiceTrace (SrvTrace) COMPONENT FrUni Isdn COMPONENT FrUni BnxProtocol (Bp)
Opt. Subcomp.	COMPONENT FrUni DataLinkConnectionIdentifier (Dlci)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrUni CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayUni

ATTRIBUTE FrUni customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to

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as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib	FrameRelayUni
Values	Decimal (0; 1..8191)
Default	0

GROUP FrUni OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayUni

ATTRIBUTE FrUni adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE FrUni operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayUni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrUni usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayUni
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrUni availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	FrameRelayUni
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrUni proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	FrameRelayUni
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrUni controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	FrameRelayUni
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrUni alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	FrameRelayUni
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE FrUni standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	FrameRelayUni
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrUni unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayUni
Values	false true
Default	false

GROUP FrUni Statistics (Stats)

Properties	Operational
Description	FrUni/n Statistics This group contains the statistics about the operational behavior of the service at the interface level.
Mib	FrameRelayUni

ATTRIBUTE FrUni lastUnknownDlci (ludlc)

Access	Read only
Description	This attribute identifies the most recent DLCI which user frames were received on for which a DLCI has not been provisioned on the port.
Mib	FrameRelayUni
Values	Decimal (0..1023)
Default	0

ATTRIBUTE FrUni unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute contains a count of the number of frames received from the

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	interface with an unknown DLCI (DLCI which is not provisioned). When the maximum is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

GROUP FrUni IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayUni

ATTRIBUTE FrUni ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayUni
Values	up down testing
Default	up

ATTRIBUTE FrUni ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayUni

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Values	Decimal (1..65535)
Default	No default

GROUP FrUni OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayUni

ATTRIBUTE FrUni snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayUni
Values	up down testing
Default	up

GROUP FrUni EmissionPriorityQs

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the number of Frame Relay egress emission priority queues to be used on that Frame Relay Interface and the provisionable attribute to determine whether emission queue size is doubled.
Mib	FrameRelayUni

ATTRIBUTE FrUni numberOfEmissionQs

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of egress emission priority queues that will be used for that Frame Relay interface. For V.35, V.11, HSSI, E1, DS1, E3, DS3 or 8pDS1 the possible values are: ***2*** (in which case they are hardware queues), or ***4*** (in which case they are software queues). For DS1C, E1C or DS3C the possible values are ***2, 4*** (in all cases they are software queues).

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For 32 port Msa cards the possible values are ***2, 4*** (in all cases they are hardware queues).

For 4pDS3Ch, 1pSTM1ChSmIr PQC6v2 (also known as PQC2) the possible values are ***2, 4*** (in all cases they are hardware queues).

For 4pDS3Ch PQC12, setting this attribute has no effect on the number of egress emission priority queues, four hardware queues are always used.

Mib	FrameRelayUni
Values	Decimal (2; 4)
Default	2

ATTRIBUTE FrUni doubleEmissionQSize (deqs)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the emission queue's size is doubled for the frame relay interface and it is only supported on *frUni*. When *doubleEmissionQSize* is set to ***yes***, the default frame relay interface emission queue size is doubled. This will reduce packets loss, but latency will be increased as the queue length grows. When the attribute is set to ***no***, the default emission queues size will be used. When frame relay interface is linked to a virtual framer, the *doubleEmissionQSize* must be set to ***no***, or a semantic check error will occur. For V11, E1 and E1C cards, the possible values of the *doubleEmissionQSize* attribute are ***yes*** and ***no***. For other cards, *doubleEmissionQSize* must always be set to ***no***, or a semantic check error will occur.
Mib	FrameRelayUni
Values	no yes
Default	no

GROUP FrUni TrafficStatistics (TrafficStats)

Properties	Operational
Description	This operational group provides the traffic statistics of the service at the interface level. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

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Mib	FrameRelayUni

ATTRIBUTE FrUni frmTolfByQueue

Access	Read only
Description	This attribute counts the frames transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

ATTRIBUTE FrUni octetTolfByQueue

Access	Read only
Description	This attribute counts the octets transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

COMPONENT FrUni DataNetworkAddress (Dna)

Groups	GROUP FrUni Dna Address GROUP FrUni Dna OutgoingOptions GROUP FrUni Dna IncomingOptions GROUP FrUni Dna CallOptions
Scope	Application

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Description	This group contains a superset of all attributes which may apply to a VC. Particular applications will typically offer only a subset of these attributes by providing a definition of their own DNA subcomponent.
Mib	FrameRelayUni
Opt. Subcomp.	COMPONENT FrUni Dna ClosedUserGroup (Cug) COMPONENT FrUni Dna HuntGroupMember (HgM) COMPONENT FrUni Dna SpareDna (SDna)
Common Verbs	Help List Display

GROUP FrUni Dna Address

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the DNA that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	FrameRelayUni
Values	x121 e164
Default	x121

ATTRIBUTE FrUni Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	This attribute specifies digits which form the unique identifier of the customer interface. When a *SpareDna* component is provisioned this attribute specifies the main *dna*, that is the one on the *mainCard* supporting the interface. It is the equivalent of a telephone number in the telephone network.
Mib	FrameRelayUni

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Values	BCD (1..15)
Default	No default

GROUP FrUni Dna OutgoingOptions

Properties	Provisioned
Description	This group defines DNA call options for calls made from the interface. These options are not used for calls arriving to the interface represented by this *DNA*.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna outDefaultPriority (odf)

Access	Read and write
Description	This attribute indicates the default priority of outgoing calls from the DTE to the network. It can be overridden by the *discardPriority* under *DLCI Direct Call* subcomponent. This option can be also included in X.25 signaling, in such case it will be overruled.
Mib	FrameRelayUni
Values	normal high
Default	normal

ATTRIBUTE FrUni Dna outDefaultPathReliability (opr)

Access	Read and write
Description	This attribute specifies the default class of routing for reliability routing for all outgoing calls (from the DTE to the network) using this particular DNA. The chosen default class of routing applies to all outgoing calls established using this DNA, and applies to the packets travelling in both directions on all outgoing calls (local to remote, and remote to local). For incoming calls, the default class of routing is chosen by the calling party (as opposed to DPN, where either end of the call can choose the default routing class). This attribute, if set to a value of *normal*, indicates that the default class of routing is normal reliability routing. If set to a value of *high*, then the default class of routing is high reliability routing. High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network

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when errors are detected or during link congestion. However, the VC handles the duplication and disordering to ensure that packets are delivered to the DTE properly.

For the Frame Relay service, duplication of packets is not desired, in which case, normal reliability may be chosen as the preferred class of routing.

Mib: FrameRelayUni

Values: normal
high

Default: normal

ATTRIBUTE FrUni Dna outAccess (oua)

Access: Read and write

Description: This attribute is an extension of the Closed User Group (CUG) facility, as follows:
This attribute, if set to a value of *allowed* indicates that outgoing calls (from the DTE to the network) to the open (non-CUG) part of the network are permitted. It also permits outgoing calls to DTEs that have Incoming Access capabilities. If set to a value of *disallowed*, then such calls cannot be made using this DNA. Such calls will be cleared by the local DCE.
This attribute corresponds to the CCITT 'Closed User Group with Outgoing Access' feature for DNAs in that outgoing access is granted if this attribute is set to a value of *allowed*.

Mib: FrameRelayUni

Values: disallowed
allowed

Default: disallowed

ATTRIBUTE FrUni Dna defaultTransferPriority (dtp)

Access: Read and write

Description: This attribute specifies the default transfer priority for all outgoing calls using this particular *DNA*. It can be overridden by the *transferPriority* provisioned in the *Dlci DirectCall* sub-component.

The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n indicates the transfer priority index, contains a default setting for routing class of service (multimedia, delay or throughput) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the

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Mod Frs DprsNet Tpm/n component. The default mapping can be altered by a user if required.

The default *defaultTransferPriority* is ***0***.

Mib: FrameRelayUni

Values:
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Default: 0

ATTRIBUTE FrUni Dna transferPriorityOverRide (tpor)

Access: Read and write

Description: When this attribute is set to ***yes*** in the call request, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority.

This attribute is not applicable for Frame Relay SVCs.

For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority*.

The default of *transferPriorityOverRide* is ***yes***.

Mib: FrameRelayUni

Values:
yes
no

Default: yes

GROUP FrUni Dna IncomingOptions

Properties: Provisioned

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Description	This group defines options for incoming calls. These options are used for calls arriving to the interface represented by this *DNA*. For calls originated from the interface, *IncomingOptions* attributes are not used.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna incAccess (ina)

Access	Read and write
Description	This attribute, if set to a value of *allowed* specifies that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTEs that have outgoing access capabilities. If set to a value of *disallowed*, such calls cannot be made to this DNA. They will be cleared by the local DCE. This attribute corresponds to the CCITT 'Closed User Group with Incoming Access' feature for DNAs in that incoming access is granted if this attribute is set to a value of *allowed*.
Mib	FrameRelayUni
Values	disallowed allowed
Default	disallowed

GROUP FrUni Dna CallOptions

Properties	Provisioned
Description	This group defines additional all options for not related to direction of the call.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator. This attribute is returned by the local VC in the accounting record for all calls that are set up using this particular DNA.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrUni Dna accountCollection (aco)

Access	Read and write

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Description	This attribute indicates that accounting records are to be collected by the network for the various reasons: billing, test, study, auditing. The last of the parameters, force, indicates that accounting records are to be collected irrespective of other collection reasons. The force option is available for X.75 Gateways only. If none of these reasons are set, then accounting will be suppressed. To set a specific accounting collection reason, the reason is entered and the corresponding bit in the structure is set to a value of 1. To turn off a specific accounting collection reason, the reason is entered preceded with the '~' character, and the corresponding bit in the structure is set to a value of 0. The bit placement for the accounting collection reasons is as follows: Bit 0 - Bill Bit 1 - Test Bit 2 - Study Bit 3 - Audit Bit 4 - Force
Mib	FrameRelayUni
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE FrUni Dna serviceExchange (sre)

Access	Read and write
Description	This attribute is an arbitrary number, Data Service Exchange, as entered by the network operator and reported in accounting record. It is converted into an internal 8-bit integer value for use in the accounting record as well as in various X.25 and X.75 Tariff utilities.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrUni Dna egressAccounting (ega)

Access	Read and write
Description	This attribute specifies if egress accounting is enabled by the frame relay service. If egress accounting is disabled, only segment counts are collected by the VC. No frame relay counts appear in the accounting records for the frame relay service. If egress accounting is enabled, the accounting records for the frame relay service will contain frame relay specific counts.
Mib	FrameRelayUni

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Values	yes no
Default	no

ATTRIBUTE FrUni Dna dataPath (dpa)

Access	Read and write
Description	This attribute specifies the data path to be used by Virtual Circuits on this interface. If the connection has a *DirectCall* component then the value can be overridden by the *dataPath* attribute of the *DirectCall* component. This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established. The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection. A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value. ***dprsOnly*** - dynamic packet routing system is used ***dprsMcsOnly*** - dprs Multi-Service Cut-Through Switching path is used. ***dprsMcsFirst*** - dprs Multi-Service Cut-Through Switching path is used if it is available. If it is not available ***dprsOnly*** is used.
Mib	FrameRelayUni
Values	dprsOnly dprsMcsOnly dprsMcsFirst
Default	dprsOnly

COMPONENT FrUni Dna ClosedUserGroup (Cug)

Instance	Decimal (0..255)
Groups	GROUP FrUni Dna Cug CugOptions
Scope	Application
Description	*FrUni/n Dna ClosedUserGroup* This group defines options associated with national or international *CUG* Identifier. Other *DNAs* in the network can have *CUGs* defined which groups these *DNAs* by *CUG interlockCode*. If *DNAs* are defined with *CUGs*, calls from *DNAs* which do not have the same *interlockCode* defined are refused. Attributes *incAccess* and *outAccess* can override this

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rule.

A CUG is provisioned by default as a SELECTABLE CUG. If a SELECTABLE CUG is provisioned, the DTE can include a CUG facility in the call request. If it does, the DTE selects a specific CUG by signaling the CUG's index. A DTE can subscribe to as many as 256 SELECTABLE CUGs.

A SIMPLE CUG is provisioned by setting a SELECTABLE CUG's preferential attribute to the value **yes**. There are two prerequisites: a single SELECTABLE CUG must exist; its attributes incCalls and outCalls must both be set to **allowed**. If a SIMPLE CUG is provisioned, it is the default CUG used to establish a call when the call request sent by the DTE does not include any CUG facility. If the DTE includes any CUG facility in the call request, the call is cleared. A DTE subscribing to a SIMPLE CUG cannot subscribe to any other CUG.

Mib FrameRelayUni

Common Verbs
Help
List
Display
Add
DELete

GROUP FrUni Dna Cug CugOptions

Properties Provisioned

Description Attributes in this group define *ClosedUserGroup* options associated with *interlockCode*. *DNA's* with the same *CUG* (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same *CUG* group are defined here.

Mib FrameRelayUni

ATTRIBUTE FrUni Dna Cug type

Access Read and write

Description This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTEs for which there is no X.75 Gateway between. (National CUGs cannot normally traverse an X.75 Gateway).
If this attribute is set to ***national***, then the *CUG* is a national *CUG*, in which case, the *dnic* should be left at its default value since it is not part of a national *CUG*. If this attribute is set to ***international***, then the *CUG* is an international *CUG*, in which case, the *dnic* should be set appropriately as part of the *CUG interlockCode*.

Mib FrameRelayUni

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Values	national international
Default	national

ATTRIBUTE FrUni Dna Cug dnic

Access	Read and write
Description	This attribute specifies the *dnic* (Data Network ID Code) of the *CUG* by which packet networks are identified. This attribute is not applicable if the *CUG* is a ***national*** *CUG*, as specified by the CUG *type* attribute. There are usually 1 or 2 *dnics* assigned per country, for public networks. The U.S. is an exception where each BOC has a *dnic*. Also, a group of private networks can have its own *dnic*. *dnic* value is not an arbitrary number. It is assigned by international agreement and controlled by CCITT.
Mib	FrameRelayUni
Values	BCD (4)
Default	0000

ATTRIBUTE FrUni Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the *CUG* identifier of a national or international *CUG* call. It is an arbitrary number and it also can be called CUG in some descriptions. Interfaces (*DNA's*) defined with this number can make calls to *DNA's* with the same *interlockCode*.
Mib	FrameRelayUni
Values	Decimal (0..65535)
Default	65535

ATTRIBUTE FrUni Dna Cug preferential (pre)

Access	Read and write
Description	The attribute "preferential", if set to ***yes*** indicates that this CUG is the SIMPLE CUG (as defined in ITU X.36 [10/96]), in which case it will be used during the call establishment phase if the DTE has not explicitly specified a CUG index in the call request packet. If set to ***no***, then this CUG is not the SIMPLE CUG, but an instance of the SELECTABLE CUG. The attribute "preferential" is set to ***no*** by CAS when a CUG instance is created. If only one CUG instance exists under a DNA, and if this CUG's attributes "incCalls" and "outCall" are both set to ***allowed*****, t**hen this CUG instance can be changed to a SIMPLE CUG by setting the attribute "preferential" to ***yes***. If more than one CUG instances exist under a DNA, none of the CUGs can be set by the user as "preferential". Essentially, the

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attribute “preferential” distinguishes a SIMPLE CUG from a SELECTABLE CUG.

In the case of a FRUNI DNA with a single CUG instance, the CUG can be a SIMPLE CUG (preferential = ***yes***) or the only instance of a SELECTABLE CUG (preferential = ***no***).

Mib	FrameRelayUni
Values	no yes
Default	no

ATTRIBUTE FrUni Dna Cug outCalls (ouc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that outgoing calls (from the DTE into the network) can be made using this particular CUG. If set to a value of ***disallowed***, then outgoing calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Outgoing Calls Barred' feature for CUGs in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	FrameRelayUni
Values	disallowed allowed
Default	allowed

ATTRIBUTE FrUni Dna Cug incCalls (inc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular CUG. If set to ***disallowed***, then incoming calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Incoming Calls Barred' feature for CUGs in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	FrameRelayUni
Values	disallowed allowed
Default	allowed

COMPONENT FrUni Dna HuntGroupMember (HgM)

Groups	GROUP FrUni Dna HgM Interface (If) GROUP FrUni Dna HgM Operational (Op)

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Scope	Application
Description	*FrUni/n Dna HuntGroupMember* This component specifies the interaction of this *DNA* with one or more hunt groups to which it is expected to belong. Note that is not possible to automatically verify the consistency of the hunt group membership specified under this component with the hunt group provisioning on the DPN Hunt Group Server(s).
Mib	FrameRelayUni
Subcomponents	COMPONENT FrUni Dna HgM HuntGroupAddress (HgAddr)
Common Verbs	Help List Display Add DELete

GROUP FrUni Dna HgM Interface (If)

Properties	Provisioned
Description	This group contains the interface parameters between the *HuntGroupMember* and the hunt group server.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna HgM availabilityUpdateThreshold (aut)

Access	Read and write
Description	This attribute specifies how much *availableAggregateCIR* can change before an Availability Message Packet (AMP) is sent to the hunt group server informing it of the change. If the value specified is not a multiple of 2048, the value actually used as the threshold will be the next higher multiple of 2048.
Mib	FrameRelayUni
Values	Decimal (2048..16777216)
Units	bit/s
Default	8192

GROUP FrUni Dna HgM Operational (Op)

Properties	Operational
Description	This group contains the operational attributes of the *HuntGroupMember* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna HgM maximumAvailableAggregateCir (mcir)

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Access	Read only
Description	This attribute indicates the maximum available bandwidth for this hunt group member. This value represents the total sum of the sixteen egress bandwidth pools. It is the sum of the sixteen indices of the *FrUni Ca egressBandwidthPool* attribute multiplied by the link speed.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Dna HgM **availableAggregateCir (acir)**

Access	Read only
Description	This attribute indicates the current total available bandwidth reported to the hunt group server in the Availability Message Packet (AMP). This value represents the sum of the sixteen currently available egress bandwidth pools. It is the sum of the sixteen indices of the *FrUni Ca egressPoolAvailableBandwidth* attribute. It increments when a connection is released. It decrements when a connection is accepted. Both this attribute and the *availableDlcis* attribute must be non zero for this interface to receive calls on a hunt group.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Dna HgM **availabilityDelta (ad)**

Access	Read only
Description	This attribute indicates the net change in the available aggregate CIR since the last Availability Message Packet (AMP) was sent to the Hunt Group. Once the absolute value of this attribute reaches the *availabilityUpdateThreshold* an AMP is sent to the hunt group server(s) and the *availabilityDelta* is re-computed.
Mib	FrameRelayUni
Values	Signed (-16777216..16777215)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Dna HgM **availableDlcis (adl)**

Access	Read only

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Description	This attribute indicates the number of DLCIs available for SVCs on the interface associated with this DNA. If this value reaches 0, an AMP with zero availability is sent to the hunt group server(s). Both this attribute and the *availableAggregateCir* attribute must be non zero for this DNA to receive calls on the hunt group.
Mib	FrameRelayUni
Values	Decimal (0..4096)
Default	No default

COMPONENT FrUni Dna HgM HuntGroupAddress (HgAddr)

Instance	Decimal (0..1)
Groups	GROUP FrUni Dna HgM HgAddr Address (Addr)
Scope	Application
Description	*FrUni/n Dna HgM HuntGroupAddress/n* This component specifies a hunt group address to which this member belongs. A hunt group member belongs to at least one hunt group.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Dna HgM HgAddr Address (Addr)

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna HgM HgAddr numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *DNA*. The address may belong to X.121 or E.164 plans.
Mib	FrameRelayUni
Values	x121 e164
Default	x121

ATTRIBUTE FrUni Dna HgM HgAddr dataNetworkAddress (dna)

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Access	Read and write
Description	This attribute contains digits which form the unique identifier of the customer interface. It can be compared (approximation only) to a telephone number where the phone number identifies a unique telephone set. *DNA* digits are selected and assigned by network operators.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

COMPONENT FrUni Dna SpareDna (SDna)

Groups	GROUP FrUni Dna SDna Address (Addr)
Scope	Application
Description	*FrUni/n Dna SpareDna* This component represents the Data Network Address associated with the FrUni on the *spareCard* when the ***frUniPvcSparingDprs*** feature is provisioned. When this component is provisioned, the spare Dna is supported by the *spareCard* and the main Dna is supported by the *mainCard*. The remote *FrUni* must have a *SpareDc* component provisioned, otherwise hot standby sparing will not be provided by this DNA.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Dna SDna Address (Addr)

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna SDna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *dna*. The address may belong to X.121 or E.164 plans.
Mib	FrameRelayUni

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Values	x121 e164
Default	x121

ATTRIBUTE FrUni Dna SDna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	This attribute specifies digits which form the alternate identifier of the customer interface used for hot standby sparing. This spare *dna* is supported by the *spareCard*. It is the equivalent of a telephone number in the telephone network. DNA digits are selected and assigned by network operators.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

COMPONENT FrUni Framer

Groups	GROUP FrUni Framer Provisioned (Prov) GROUP FrUni Framer LinkOptions (Link) GROUP FrUni Framer OsiState (State) GROUP FrUni Framer Statistics (Stats) GROUP FrUni Framer LinkUtilization (Util)

COLLECTED STATS FrameRelayUni Framer

Scope	Application
Description	*FrUni/n Framer* *FrNni/n Framer* *FrAtm/n Framer* This component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface

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datapath statistics (such as frame counts and aborts).

Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	FrameRelayUni

ATTRIBUTE FrUni Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayUni
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrUni Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	FrameRelayUni

ATTRIBUTE FrUni Framer dataInversion

Access	Read and write

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Description

This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

This attribute may only take its default value for non-MSA cards.

Mib: FrameRelayUni

Values:
off
on

Default: off

ATTRIBUTE FrUni Framer frameCrcType

Access: Read and write

Description

This attribute defines the type of CRC used.

The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness.
NoCrc means that CRC is not used.

This attribute may take only its default value for non-MSA cards.

Mib: FrameRelayUni

Values:
crc16
crc32
noCrc

Default: crc16

ATTRIBUTE FrUni Framer flagsBetweenFrames

Access: Read and write

Description

This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.

Mib: FrameRelayUni

Values: Decimal (1..16)

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Default	1

GROUP FrUni Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayUni

ATTRIBUTE FrUni Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrUni Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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	with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayUni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrUni Framer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayUni
Values	idle active (activ) busy
Default	idle

GROUP FrUni Framer **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Framer **aborts**

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer **crcErrors**

Access	Read only

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Description

This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.

Mib FrameRelayUni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrUni Framer lrcErrors

Access Read only

Description

This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.

Mib FrameRelayUni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrUni Framer nonOctetErrors

Access Read only

Description

This attribute is the total number of frames that were non octet aligned.

Mib FrameRelayUni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrUni Framer overruns

Access Read only

Description

This attribute is the total number of frames received from the link for which overruns occurred.

Mib FrameRelayUni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrUni Framer underruns

Access Read only

Description

This attribute is the total number of frames transmitted to the link for which underruns occurred.

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Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer largeFrmErrors

Access	Read only
Description	This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer frmModeErrors

Access	Read only
Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.

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Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

GROUP FrUni Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayUni
Values	Decimal (0..100)
Units	%
Default	0

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ATTRIBUTE FrUni Framer **normPrioLinkUtilFromIf**

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayUni
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS FrameRelayUni Framer

Description	The statistics record generated by the FrameRelayUni Framer component.

ATTRIBUTE FrUni Framer **rxBytes**

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrUni Framer **rxFrames**

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrUni Framer **txBytes**

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE FrUni Framer **txFrames**

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE FrUni Framer **rxTotalLinkUtil**

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

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Values	Decimal (0..100)

COMPONENT FrUni LocalManagementInterface (Lmi)

Groups	GROUP FrUni Lmi ProtocolParameters (Parms) GROUP FrUni Lmi OsiState (State) GROUP FrUni Lmi ProtocolStatusInfo (Psi) GROUP FrUni Lmi Statistics (Stats) GROUP FrUni Lmi UspProtocolParameters (UspParms)
Scope	Application
Description	*FrUni/n LocalManagementInterface* *FrNni/n LocalManagementInterface* *FrAtm/n LocalManagementInterface* This component defines the parameters for implementing the Local Management Interface protocol.
Mib	FrameRelayUni
Common Verbs	Help List Display

GROUP FrUni Lmi ProtocolParameters (Parms)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *LMI* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lmi procedures (proc)

Access	Read and write
Criticality	Process
Description	This attribute selects the procedures to be used for the Local Management Interface. The following procedures are supported: ***none:*** no Local Management Interface procedures are running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures. The remaining attributes of this group are ignored. For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrUni* is set to ***none***, only ***none*** is permitted for the *procedures* attribute of this *Lmi* component. ***vendorForum***: Local Management Interface procedures from the Vendor Forum specification are supported on this interface. *DLCI 1023* is used for

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the LMI protocol. This value cannot be used if the side attribute is both.

ansi: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are supported. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

autoConfigure: The interface determines automatically which Local Management Interface procedures to use. This value cannot be used if the side attribute is user.

The procedures currently in use can be seen in the operational attribute *opProcedures*.

Mib: FrameRelayUni

Values:
none
vendorForum
ansi
itu (ccitt)
autoConfigure

Default: autoConfigure

ATTRIBUTE FrUni Lmi asyncStatusReport (asr)

Access: Read and write

Description

This attribute selects the use of asynchronous PVC status report procedures as specified in ANSI, CCITT, and Vendor Forum.

This attribute can be set to ***on*** or ***off***. If *procedure*s is set to ***none***, this attribute is ignored.

Mib: FrameRelayUni

Values:
off
on

Default: off

ATTRIBUTE FrUni Lmi errorEventThreshold (n392)

Access: Read and write

Description

An event is defined as follows: (1) receipt of a STATUS ENQUIRY message; or (2) expiration of timer T392. An error event is (1) nonreceipt of STATUS ENQUIRY in T392 seconds; (2) invalid contents of a LMI message; (3) invalid receive sequence number. This attribute specifies the number of error events which, if they occur within *eventCount* events, cause a protocol error condition. The condition is cleared after *eventCount* sequential correct events occur. This attribute corresponds to the nN2

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parameter described in the Vendor Forum Specification.

It must be less than or equal to *eventCount*.

Mib FrameRelayUni

Values Decimal (1..10)

Default 3

ATTRIBUTE FrUni Lmi eventCount (n393)

Access Read and write

Description

This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed. This attribute corresponds to the nN3 parameter described in the Vendor Forum Specification.

It must be greater than or equal to *errorEventThreshold*.

Mib FrameRelayUni

Values Decimal (1..10)

Default 4

ATTRIBUTE FrUni Lmi checkPointTimer (t392)

Access Read and write

Description

This attribute selects the time (in seconds) within which a STATUS ENQUIRY message is expected. This attribute corresponds to the nT2 parameter described in the Vendor Forum Specification.

It must be less than *messageCountTimer*.

Mib FrameRelayUni

Values Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)

Units seconds

Default 15

ATTRIBUTE FrUni Lmi messageCountTimer (nt3)

Access Read and write

Description

This attribute selects the time (in seconds) within which at most five (this is a fixed value and corresponds to maximum message count in VendorForum) STATUS ENQUIRY messages are expected. This attribute applies only when the *lmiProcedures* is set to ***vendorForum***.

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messageCountTimer must always be greater than *checkPointTimer*.

Mib	FrameRelayUni
Values	Decimal (5; 10; 15; 20; 25; 30)
Units	seconds
Default	20

ATTRIBUTE FrUni Lmi ignoreActiveBit (inab)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the Frame Relay LMI Active Bit (A-bit) has a bearing on the transfer of user data across this Frame Relay interface for both directions of traffic flow. When this attribute is set to ***yes***, the A-bit status of a user DLCI connection does not affect data transfer. When this attribute is set to ***no,*** data received from the local interface will be discarded if an A-bit =0 condition exists towards the local user. Data being sent to the local interface is discarded if an A-bit = 0 condition exists towards the subnet.
Mib	FrameRelayUni
Values	no yes
Default	no

ATTRIBUTE FrUni Lmi side

Access	Read and write
Criticality	Process
Description	This attribute can be set to ***user, network,*** or ***both***. When this attribute is set to ***user***, USP LMI procedures are running. When this attribute is set to ***network***, NSP LMI procedures are running. When this attribute is set to ***both***, USPNSP LMI procedures are running. When the value is ***both***, the *procedures* attribute must not be set to ***vendorForum***. Setting the value to ***user*** when the *procedures* attribute is set to ***autoConfigure*** is disallowed semantically.
Mib	FrameRelayUni

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Values	network user both
Default	network

ATTRIBUTE FrUni Lmi pvcConfigParmsInFsr (pvcConfig)

Access	Read and write
Description	When this attribute is set to ***yes***, additional Q.933 information elements are included in the LMI Full Status message to facilitate CPE PVC parameter configuring. When set to ***yes***, the *Check Prov* command fails if the *Lmi side* is not set to ***network***. When set to ***yes***, *Check Prov* fails if the number of DLCIs on the *FrUni* is greater than 300. Vendor Forum LMI Extensions will only be enabled if this attribute is set to ***vendorForumExtensions*** and both of the following conditions are met: 1. The value of the *Lmi procedures* attribute is ***vendorForum*** 2. The value of the *Lmi side* attribute is ***network*** If either of these conditions are not met, Vendor Forum Extensions will not be enabled, and this attribute is ignored. When Vendor Forum Extensions is enable the value of the *Dlci cirPresent* attribute will be included as the PVC Bandwidth in the LMI PVC Status IE. If Vendor Forum Extensions is enable and the value of the *asyncStatusReport* is ***yes***, when a DLCI is deleted the Delete Bit will be set to 1 in the LMI PVC Status IE in the asyncronous status report. If the service is not a *FrUni* this attribute is ignored.
Mib	FrameRelayUni
Values	no yes vendorForumExtensions
Default	no

ATTRIBUTE FrUni Lmi pvcAlarmsReporting (pvcAlarms)

Access	Read and write
Description	This attribute specifies if alarms are generated when PVCs change state in the local network, an adjacent network or in remote networks. When the value is ***internal***, PVCs operational status change in the local

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network are reported in alarms. When the value is ***external***, PVCs operational status change in an adjacent or remote networks are reported in alarms. When the value is ***both***, PVCs status change in local and adjacent or remote networks are reported in alarms. When the value is ***none***, no alarms are issued for PVCs status change.

There are four kinds of alarms controlled by the attribute.
Alarm 7007 200x reports PVCs that have lost connectivity in an adjacent or remote networks.
Alarm 7007 201x reports PVCs that have reached the data transfer state in an adjacent or remote networks.
Alarm 7007 202x reports PVCs that have lost connectivity in the local network.
Alarm 7007 203x reports PVCs that have reached the data transfer state in the local network.

Each alarm can report a maximum of 112 DLCIs. Up to nine alarms of the same kind may be required to report all PVCs that have changed state if all these PVCs have experienced the same condition at the *FrUni* interface.

Mib	FrameRelayUni
Values	external internal both none
Default	external

GROUP FrUni Lmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lmi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — FrameRelayUni

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE FrUni Lmi operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — FrameRelayUni

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE FrUni Lmi usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — FrameRelayUni

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Values	idle active (activ) busy
Default	idle

GROUP FrUni Lmi ProtocolStatusInfo (Psi)

Properties	Operational
Description	This group provides the protocol status of the Local Management Interface.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lmi protocolStatus

Access	Read only
Description	This attribute indicates whether the LMI is in an error condition or whether the LMI procedures are behaving normally. When operating with no LMI protocol, this attribute is always set to ***normalCondition***. When operating with LMI procedures, this attribute is set to ***errorCondition*** after n392 of the last n393 events are in error. The consequence of an ***errorCondition*** is that all DLCIs on this interface will become inactive in both directions. The ***errorCondition*** is cleared and a ***normalCondition*** is indicated when a sufficient number of events have occurred without error. In ANSI, this occurs when n393 consecutive good events take place. If the *procedures* attribute is set to ***autoConfigure***, this attribute is set to ***configuring*** while adaptive LMI determines which LMI procedures are running on the link. A single LMI error event during auto configuration causes the attribute value to change to ***errorCondition***. If during ***configuring*** no LMI message is received, an LMI ***errorCondition*** is raised after n392 x t392 seconds.
Mib	FrameRelayUni
Values	errorCondition normalCondition configuring
Default	No default

ATTRIBUTE FrUni Lmi opProcedures (opproc)

Access	Read only
Criticality	Process
Description	The *opProcedures* attribute indicates the procedures being used for the Local Management Interface. This attribute should be ignored if *protocolStatus* is not ***normalCondition***. The following procedures are

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supported:

none: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures.

vendorForum: Local Management Interface procedures from the Vendor Forum specification are running on this interface. *DLCI 1023* is used for the LMI protocol.

ansi: Local Management Interface procedures from the ANSI specification are running. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are running. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

unknown: Local Management Interface procedures have yet to be determined by Adaptive LMI.

Mib	FrameRelayUni
Values	none vendorForum ansi itu unknown
Default	No default

GROUP FrUni Lmi Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Local Management Interface.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lmi keepAliveStatusToIf (kasti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive status messages sent to the external user device in response to a status enquiry for keep alive status. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrUni Lmi fullStatusToIf (fsti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi keepAliveStatusEnqFromIf (kafi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid keep alive status enquiry messages received from the external user device. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi fullStatusEnqFromIf (fsfi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid full status enquiry messages received from the external user device. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi networkSideEventHistory (nsh)

Access	Read only
Description	This attribute displays the Local Management Interface network side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The leftmost event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status enquiry message. An error event is one of three possibilities, either

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a nT2/T392 timer expiry, receipt of a status enquiry message with bad sequence numbers, or when *lmiProcedures* is provisioned to vendorForum and we receive more than nN4 status enquiry messages within the provisioned *messageCountTimer* (nT3).

Mib	FrameRelayUni
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE FrUni Lmi protocolErrors (proto)

Access	Read only

Description

This attribute counts the number of Local Management Interface protocol errors. It is the sum of the sequence (*sequenceErrors*), timeout (*pollingVerifTimeouts*) and too many status enquiry messages received within the *messageCountTimer* (nT3) errors. The too many status enquiries error only applies when *lmiProcedures* is set to ***vendorForum***. When the maximum count is exceeded it wraps to zero.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi unexpectedIes (uie)

Access	Read only

Description

This attribute counts the number of Local Management Interface frames received with an Information Element identifier that is unknown or unexpected. An unexpected Information Element is not a protocol error. When the maximum count is reached, this counter wraps to zero.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi sequenceErrors (seq)

Access	Read only

Description

This attribute counts the number of Local Management Interface Status Enquiry message sequence errors. A sequence error is receipt of a Status Enquiry message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.

Mib	FrameRelayUni

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi unexpectedReports (ur)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an unknown or unexpected report type. An unexpected report type is not a protocol error. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi pollingVerifTimeouts (tmo)

Access	Read only
Description	This attribute counts the number of *checkPointTImer* (t392) timer expiries occurring on the Local Management Interface. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi keepAliveEnqTolf (kaeti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive enquiry status messages sent to the external user device for keep alive status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi fullStatusEnqTolf (fseti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry

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for keep alive or full status. When the maximum count is reached it wraps to zero.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi userSideEventHistory (ush)

Access	Read only
Description	This attribute displays the Local Management Interface user side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The left most event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status message. An error event is either a nT1/T391 timer expiry or receipt of a status message with bad sequence numbers.
Mib	FrameRelayUni
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE FrUni Lmi statusSequenceErrors (stseq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status message sequence errors. A sequence error is receipt of a Status message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi noStatusReportCount (nsrc)

Access	Read only
Description	This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented in two cases: i) after a status enquiry is sent out and T391 timer expires without having a status report received. ii) an invalid status report is received.

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When the maximum count is reached it wraps to zero.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

GROUP FrUni Lmi UspProtocolParameters (UspParms)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Local Management Interface user side procedure.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lmi fullStatusPollingCycles (n391)

Access	Read and write
Description	This attribute specifies how frequently the Frame Relay UNI service should initiate a Status Enquiry for a full PVC status report. A polling cycle is a Status Enquiry and Status Report exchange. This attribute is used only if the *side* attribute is either ***user*** or ***both***.
Mib	FrameRelayUni
Values	Decimal (1..255)
Default	6

ATTRIBUTE FrUni Lmi linkVerificationTimer (t391)

Access	Read and write
Description	This attribute specifies how frequently the Frame Relay UNI service should initiate a Status Enquiry for link integrity verification. It must be less than *checkPointTimer (t392)*. When the Lmi *side* is ***network***, this attribute is ignored.
Mib	FrameRelayUni
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	10

COMPONENT FrUni DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007)

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Groups	GROUP FrUni Dlci OsiState (State) GROUP FrUni Dlci ABitStatus (Abit) GROUP FrUni Dlci CallData (CalId) GROUP FrUni Dlci ServiceParametersOp (SpOp) GROUP FrUni Dlci Statistics (Stats) GROUP FrUni Dlci IntervalData (Int)
Scope	Application
Description	*FrUni/n DataLinkConnectionIdentifier/n* This component represents a Data Link Connection Identifier. It is responsible for the Frame Relay U-plane (User-plane) protocol for the specified instance. There can be many instances of *Dlci* for each *FrUni*. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which a frame is associated. All frames carried within a particular physical channel and having the same DLCI value are associated with the same logical connection. A DLCI instance can be a permanent virtual circuit (PVC) or switched permanent virtual circuit (P-SPVC) added through provisioning, or a switched virtual circuit (SVC) which is created dynamically through signaling. The *lock* and *unlock* commands apply to permanent (PVC and P-SPVC) DLCIs. The *clear* command applies to switched (SVC) DLCIs. For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrUni* is set to ***none***, no *Dlci* component is allowed under this *FrUni*. A *Dlci* must have one (and only one) instance of *DirectCall*, *IpConnection*, or *BnxInterworkingFunction* under it. A *DirectConnection* can not be provisioned on a *FrUni* with an

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IpConnection or *BnxInterworkingFunction* component provisioned under any of its *Dlci subcomponents*.

Mib	FrameRelayUni
Subcomponents	COMPONENT FrUni Dlci ServiceParametersProv (Sp) COMPONENT FrUni Dlci EgressServiceParameters (EgressSp)
Opt. Subcomp.	COMPONENT FrUni Dlci DirectCall (Dc) COMPONENT FrUni Dlci SpareDirectCall (SpareDc) COMPONENT FrUni Dlci BnxInterworkingFunction (BnxIwf) COMPONENT FrUni Dlci IpConnection (IpConn)
Dyn. Subcomp.	COMPONENT FrUni Dlci Vc COMPONENT FrUni Dlci LoopBack (Lb) COMPONENT FrUni Dlci StandbyVc (StbyVc) COMPONENT FrUni Dlci Frf12Stats (Frf12)
Common Verbs	Help List Display Add DELete

VERB CLEAR **FrUni Dlci**

Impact	Service
Description	This command is used to clear a Frame Relay switched (SVC) connection.

VERB LOCK **FrUni Dlci**

Impact	Service
Description	*Lock [-force] <component name>* This verb will cause the specified component to enter the OSI ***shuttingDown*** administrative state. While shutting down, the component continues to provide service to existing clients but rejects any new requests for service. In some cases, locking a component causes all its subcomponents to shut down also. When the component is no longer providing service, it enters the OSI ***locked*** administrative state. **Options:** *-force* If this option is present, service to current clients is terminated and the ***locked*** state is entered immediately (that is, without first going through the ***shuttingDown*** state). Without this option, *Lock* behaves as described above.

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VERB UNLOCK FrUni Dlci

Impact	Service
Description	This command is used to unlock a Frame Relay PVC DLCI.

GROUP FrUni Dlci **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrUni Dlci **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

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The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayUni

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrUni DIci usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayUni

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE FrUni DIci availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test

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procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	FrameRelayUni
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrUni Dlci proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	FrameRelayUni
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrUni DIci controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	FrameRelayUni
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrUni DIci alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — FrameRelayUni

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE FrUni DIci standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	FrameRelayUni
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrUni Dlci unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayUni
Values	false true
Default	false

GROUP FrUni Dlci ABitStatus (Abit)

Properties	Operational
Description	This group contains the A-Bit status information for this Data Link Connection Identifier.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci aBitStatusToIf (abti)

Access	Read only
Description	This attribute is the most recent A-bit status sent to the interface. The A-bit status is part of the LMI protocol, and indicates willingness to accept data from the local interface. ***inactive*** - the Frame Relay service discards all data offered from the local interface. ***active*** - the Frame Relay service tries to process all data offered from the local interface. ***notApplicable*** - the DLCI is switched, so this attribute is ignored.
Mib	FrameRelayUni

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Values	inactive active notApplicable
Default	inactive

ATTRIBUTE FrUni Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute provides the reason (if any) for an ***inactive*** status to be sent to the interface. This reason is ***notApplicable*** for an ***active*** status.
Mib	FrameRelayUni
Values	notApplicable remoteUserSignaled localLmiError remoteLmiError localLinkDown remoteLinkDown pvcSpvcDown userNotAuthorized resourceNotAvailable dlciCollisionAtNni
Default	notApplicable

ATTRIBUTE FrUni Dlci aBitStatusFromIf (abfi)

Access	Read only
Description	This attribute is the most recent A-Bit status received from the interface. ***inactive*** - the Frame Relay service informs the remote DLCI not to send user data to this interface. ***active*** - the Frame Relay service informs the remote DLCI that it is okay to send user data to this interface. ***notApplicable*** - the DLCI is switched, so this attribute is ignored.
Mib	FrameRelayUni
Values	inactive active notApplicable
Default	inactive

ATTRIBUTE FrUni Dlci aBitReasonFromIf (abrfi)

Access	Read only
Description	This attribute provides the reason (if any) for an ***inactive*** status to be sent to the subnet. This reason is ***notApplicable*** for an ***active*** status.

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Mib	FrameRelayUni
Values	notApplicable remoteUserSignaled localLmiError localLinkDown missingFromLmiReport
Default	notApplicable

ATTRIBUTE FrUni Dlci loopbackState

Access	Read only
Description	This attribute has the value ***on*** when the DLCI is in loopback mode and ***off*** otherwise. The loopback command verbs *start* and *stop* are used to initiate and terminate the loopback mode for a DLCI. While *loopbackState* is ***on***, the local LMI will report to the interface the A-bit status as active. Also an active A-bit signal will be reliably propagated across the subnet to the remote DLCI.
Mib	FrameRelayUni
Values	off on
Default	off

GROUP FrUni Dlci CallData (CallId)

Properties	Operational
Description	This group of attributes describes the characteristics of the call such as call type and call state.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci callType (ct)

Access	Read only
Description	This attribute indicates whether this DLCI is a permanent virtual circuit (PVC), a switched virtual circuit (SVC) or a switched permanent virtual circuit (SPVC).
Mib	FrameRelayUni
Values	pvc svc spvc
Default	No default

ATTRIBUTE FrUni Dlci callState

Access	Read only

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Description	This attribute indicates the FRF.4 state of an SVC call. The value of this attribute for a permanent (PVC and P-SPVC) DLCI is always ***notApplicable***. In the description that follows, “local” refers to the user who has initiated the SETUP request, and “remote” refers to the user to whom the local user wishes to connect. State description: In the ***null*** state, the network has neither received nor sent call setup requests for this DLCI. In the ***callInitiated*** state, the network has received a SETUP message from the local user. In the ***outgoingCallProceeding*** state, the network has sent a CALL PROCEEDING message to the local user in response to the SETUP message. In the ***callPresent*** state, the network has sent a SETUP message to the remote user. In the ***incomingCallProceeding*** state, the network has received a CALL PROCEEDING message from the remote user in response to a SETUP message. In the ***active*** state, either the network has sent a CONNECT message to the local user, or the network has received a CONNECT from the remote user. In the ***disconnectRequest*** state, the network has received a DISCONNECT message from the local user. In the ***disconnectIndication*** state, the network has sent a DISCONNECT to the local user. In the ***releaseRequest*** state, the network has sent out a RELEASE message to the local user. In the ***restartRequest*** state, the network has sent a RESTART request to the local user and is waiting for an acknowledgement. In the ***restart*** state, the network has received a request for a restart from the local user and the network has not returned an acknowledgement.
Mib	FrameRelayUni
Values	null callInitiated callProceedingSent callPresent callProceedingReceived active

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disconnectRequest
disconnectIndication
releaseRequest
restartRequest
restart
notApplicable

Default — No default

ATTRIBUTE FrUni Dlci callReference (callref)

Access — Read only

Description — This attribute indicates the FRF.4 call reference number associated with this DLCI. The value of this attribute for a provisioned (PVC or P-SPVC) DLCI is always ***0***.

Mib — FrameRelayUni

Values — Decimal (0..32767)

Default — No default

GROUP FrUni Dlci ServiceParametersOp (SpOp)

Properties — Operational

Description — This group defines the service and traffic parameters specific to this instance of DLCI. For permanent (PVC and P-SPVC) DLCIs, the values of attributes with the exception of the *measurementInterval* should be identical to those in the group *FrsDataLinkConnectionProv* under the *FrsUniServiceParametersProv* component. For switched (SVC) DLCIs, the values of attributes may be different from the values provisioned under the *FrUni Sig* component, if signaling negotiations have occurred to alter the service parameters.

Mib — FrameRelayUni

ATTRIBUTE FrUni Dlci maximumFrameSize (n203)

Access — Read only

Description — This attribute indicates the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.

Mib — FrameRelayUni

Values — Decimal (1..8187)

Units — octets

Default — No default

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ATTRIBUTE FrUni Dlci committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (CIR) in bits per second (bit/s). When *rateEnforcement* is set to ***on***, *cir* is the rate at which the network agrees to transfer information under normal conditions. This rate is measured over a measurement interval (*t*) that is determined internally based on CIR and the committed burst size (Bc). An exception to this occurs when CIR is provisioned to be zero, in which case the measurement interval (*t*) must be provisioned explicitly. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayUni
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Dlci committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayUni
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE FrUni Dlci excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayUni
Values	Decimal (0..50000000)
Units	bits

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Default	No default

ATTRIBUTE FrUni Dlci measurementInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE FrUni Dlci accounting (ac)

Access	Read only
Description	This attribute indicates whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***accountingOn*** bit and at least one of the ***accountCollection*** bits in the ***DataNetworkAddress*** component must be set to on.
Mib	FrameRelayUni
Values	off on
Default	No default

ATTRIBUTE FrUni Dlci emissionPriorityToIf (epToIf)

Access	Read only
Description	This attribute indicates the emission priority of frames sent to the interface. A larger value denotes a higher priority.
Mib	FrameRelayUni
Values	Decimal (0; 1; 2; 3)
Default	No default

ATTRIBUTE FrUni Dlci transferPriorityToNetwork (tpToNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred to the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher

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transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15.

Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.

Mib	FrameRelayUni
Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Dlci transferPriorityFromNetwork (tpFromNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred from the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.
Mib	FrameRelayUni
Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Dlci correlationTag (ctag)

Access	Read only
Description	This attribute indicates the unique string which identifies this connection. The value of this attribute is provisioned under the *correlationTag* attribute under *Service Parameters* subcomponent. If required for correlation purposes, the attribute is provisioned with the same value at both

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endpoints of the connection.

An empty string value for this attribute indicates that the user either does not want to use the correlation tag functionality, or wants the correlation tag string to be an empty string.

This attribute can be used for off-switch data correlation purposes. Downstream processing uses this attribute to correlate data records (accounting etc.) issued at different nodes in the network. In accounting, the value of this attribute appears as the *circuitId* (circuit identifier) for the endpoint.

There is no system-generated value for the correlationTag. Therefore, this attribute does not appear for SVC DLCIs.

Mib	FrameRelayUni
Values	String (0..32, ASCII)
Default	""

GROUP FrUni Dlci Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier. When the DLCI is in local loopback mode, the DLCI statistics do not increment.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci frmToIf (fti)

Access	Read only
Description	This attribute counts the frames sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrUni Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci bciToSubnet (bcits)

Access	Read only
Description	This attribute counts the frames sent into the local network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci deFrmToIf (deti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discCongestedToIf (discardcti)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrUni Dlci discDeCongestedToIf (discarddecti)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci frmFromIf (ffi)

Access	Read only
Description	This attribute counts the frames received from the interface. It includes the frames that are discarded due to error or excess. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci becnFrmFromIf (becnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrUni Dlci fciFromSubnet (fcifs)

Access	Read only
Description	This attribute counts the frames received from the network with the Forward Congestion Indication (FCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci bciFromSubnet (bcifsb)

Access	Read only
Description	This attribute counts the frames received from the network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci excessFrmFromIf (excess)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discExcessFromIf (discardefi)

Access	Read only

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Description	This attribute counts the frames which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discFrameAbit (discfab)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay Service, due to an inactive PVC status, in the direction toward the local network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discCongestedFromIf (discardcfi)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discDeCongestedFromIf (discarddecfi)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion, in the direction toward the local network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci errorShortFrmFromIf (shortfi)

Access	Read only
Description	This attribute counts the frames received with 0 octets in the information field. When the count reaches maximum it wraps to zero.

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Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the frames received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Frames whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci becnFrmSetByService (becnset)

Access	Read only
Description	This attribute counts the number of frames with BECN set by the Frame Relay service. It is incremented whenever the Frame Relay service sets BECN on a frame upon detecting local congestion. This count is incremented regardless of whether the frame already bears a set BECN bit since its use is to determine the place of congestion. When the count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci bytesToIf (bti)

Access	Read only
Description	This attribute counts the bytes sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci deBytesToIf (debti)

Access	Read only
Description	This attribute counts the bytes sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.

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Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni DIci discCongestedToIfBytes (discardctib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the link. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni DIci discDeCongestedToIfBytes (discarddectib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the link. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni DIci bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the number of bytes received from the interface. Bytes that are discarded by the interface due to framing errors (such as CRC errors for example) are not counted. However bytes that are discarded by the application due to rate enforcement or congestion are counted. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni DIci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci excessBytesFromIf (excessb)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discExcessFromIfBytes (discardebi)

Access	Read only
Description	This attribute counts the bytes which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discByteAbit (discbab)

Access	Read only
Description	This attribute counts the bytes which were discarded due to aBit turned off.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discCongestedFromIfBytes (discardcbib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrUni Dlci discDeCongestedFromIfBytes (discarddecbib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the network. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci errorShortBytesFromIf (shortbi)

Access	Read only
Description	This attribute counts the bytes received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci errorLongBytesFromIf (longbi)

Access	Read only
Description	This attribute counts the bytes received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Bytes whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci rateAdaptReduct (rar)

Access	Read only
Description	This attribute counts the number of rate reductions due to rate adaptation. Rate adaptation causes the allowed rate to be reduced in steps. After each reduction, a period of time is awaited before further action is taken. At the end of this period, the allowed rate is further reduced if congestion is still prevalent. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrUni Dlci rateAdaptReductPeriod (rarp)

Access	Read only
Description	This attribute provides a cumulative count of the amount of time that rate adaptation procedures have been in effect. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE FrUni Dlci cirPresent

Access	Read only
Description	This attribute provides the actual Committed Information Rate (CIR) enforced for this DLCI. This number is in units of 800 bit/s, since that is the internal resolution of rate enforcement. If *rateEnforcement* is **off**, then this number does not have meaning. Normally, this attribute matches the provisioned CIR for the DLCI. But when Rate Adaptation is active, then this number will vary to represent the actual Allowed CIR at the moment that this attribute is collected.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

ATTRIBUTE FrUni Dlci eirPresent

Access	Read only
Description	This attribute provides the actual Excess Information Rate (EIR) enforced for this DLCI. This number is in units of 800 bit/s, since that is the internal resolution of rate enforcement. If *rateEnforcement* is **off**, then this number does not have meaning. Normally, this attribute matches the provisioned EIR for the DLCI. But when Rate Adaptation is active, then this number will vary to represent the actual Allowed EIR at the moment that this attribute is collected.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

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GROUP FrUni Dlci IntervalData (Int)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier interval data (accounting data).
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci startTime

Access	Read only
Description	This attribute indicates the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes. A new interval period is started each time an accounting record is generated.
Mib	FrameRelayUni
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrUni Dlci totalIngressBytes (tib)

Access	Read only
Description	This attribute counts the total bytes received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci totalEgressBytes

Access	Read only
Description	This attribute counts the total bytes sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci eirIngressBytes

Access	Read only

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Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci eirEgressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci discardedBytes

Access	Read only
Description	This attribute counts the total bytes in invalid frames received from the interface and discarded at the DLCI since the start of the interval period. This count is a sum of octets in frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci totalIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the total number of segments in frames received from the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the total number of frames received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.

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Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci totalEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the total number of segments in frames sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the total number of frames sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci eirIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci eirEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime*

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attribute. The count is reset to zero when an accounting record is generated.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discardedSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in invalid frames received from the interface and discarded at the DLCI. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of invalid frames received from the interface and discarded at the DLCI. Segments of frames are counted since the start of the interval period. The count is reset to zero when an accounting record is generated. The count is a sum of segments in frames or frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci localRateAdaptOccurred

Access	Read only
Description	This attribute indicates whether rate adaptation has occurred on this user Data Link Connection on this Frame Relay interface. The value is reset to ***no*** when an accounting record is generated.
Mib	FrameRelayUni
Values	yes no
Default	no

ATTRIBUTE FrUni Dlci elapsedDifference

Access	Read only
Description	This attribute indicates the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since the call started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrUni Dlci egressProtocol (ep)

Access	Read only
Description	This attribute indicates whether the egress protocol is active at this DLCI. The activation of the egress protocol is negotiated at the call setup and it depends on the remote end supporting OAM frame exchanges and the record generation mode.
Mib	FrameRelayUni
Values	off on
Default	No default

ATTRIBUTE FrUni Dlci callRefNumber

Access	Read only
Description	This attribute indicates the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni Dlci DirectCall (Dc)

Groups	GROUP FrUni Dlci Dc Options
Scope	Application
Description	*FrUni/n Dlci/n DirectCall* *FrNni/n Dlci/n DirectCall* This component defines direct call options for calls issued without operator intervention. Connection is complete and can be initiated automatically. Frequency of connection tries is controlled by retry timer. If no BnxProtocol component is provisioned under a FrUni or FrNni, a DirectCall component is automatically added to all the Dlci components added to the FrUni or FrNni.

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If a BnxProtocol component is provisioned under a FrUni or FrNni, no DirectCall is automatically added under the Dlci component.

Mib FrameRelayUni

Common Verbs
Help
List
Display
Add
DELete

GROUP FrUni Dlci Dc Options

Properties Provisioned

Description This group defines attributes associated with a direct call. It defines connection in terms of path and call option parameters. This connection can be permanent (PVC), switched (SVC), or switched permanent (SPVC). It can have four facilities:
- CCITT Facilities
- DTE Facilities
- National Facilities
- International Facilities
The total number of bytes of facilities including the facility codes and all of the facility data from all of the four classes of facilities must not exceed 512 bytes.

Mib FrameRelayUni

ATTRIBUTE FrUni Dlci Dc remoteNpi (rnpi)

Access Read and write

Description This attribute specifies the Numbering Plan Indicator (NPI) of the *remoteDna.*

Mib FrameRelayUni

Values
x121
e164

Default x121

ATTRIBUTE FrUni Dlci Dc remoteDna (rdna)

Access Read and write

Description This attribute specifies the Data Network Address (DNA) of the service at the remote end of the DLCI. This is the called (destination) DCE address (DNA) of this PVC.

Mib FrameRelayUni

Values BCD (1..15)

Default No default

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ATTRIBUTE FrUni Dlci Dc remoteDlci (rdlci)

Access	Read and write
Description	This attribute specifies the remote DLCI of the PVC connection.
Mib	FrameRelayUni
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrUni Dlci Dc type

Access	Read and write
Description	This attribute specifies the type of VC call. If the value is set to ***permanentMaster,*** then a permanent connection will be established between two ends. The remote end must be defined as a ***permanentSlave***, ***permanentBackupSlave,*** or ***permanentSlaveWithBackup***. The connection cannot be established if the remote end is defined as anything else. The end defined as ***permanentMaster*** always initiates the calls. It attempts to call once per minute. If the value is set to ***permanentSlave*** then a permanent connection will be established between two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote end is defined as anything else. The ***permanentSlave*** end attempts to call once per minute. If the value is set to ***permanentSlaveWithBackup*** then a permanent connection will be established between the two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote interface is defined as anything else. The ***permanentSlaveWithBackup*** attempts to call once per minute. When *type* is set to ***permanentSlaveWithBackup,*** the connection is cleared if the interface becomes unavailable. This enables a retry of the connection which can be redirected to the ***permanentBackupSlave***. If the value is set to ***permanentBackupSlave*** then a permanent connection is established between the two ends only if the ***permanentMaster*** end is disconnected from the ***permanentSlaveWithBackup*** end and a backup call is established by the call redirection system. If the ***permanentSlaveWithBackup*** interface becomes available again, the ***permanentBackupSlave*** end is disconnected and the ***permanentSlaveWithBackup*** end is reconnected to the ***permanentMaster*** end. The ***permanentBackupSlave*** end does not try to establish a call.
Mib	FrameRelayUni

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Values	permanentMaster (master) permanentSlave (slave) permanentBackupSlave (backSl) permanentSlaveWithBackup (slavWB) spvcMaster (spvcM) spvcSlave (spvcS) spvcBackupSlave (spvcBackS) spvcSlaveWithBackup (spvcSWBack)
Default	permanentMaster

ATTRIBUTE FrUni Dlci Dc **transferPriority (tp)**

Access	Read and write
Description	This attribute specifies the transfer priority to the local network for the outgoing calls using this particular DLCI. It overrides the *defaultTransferPriority* provisioned in its associated *Dna* component. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15. Each transfer priority n, where n is the transfer priority index, has a default setting for routing class of service (multimedia, delay, or throughput) and Frame Relay egress queue (depending on the number of supported egress queues on the remote end interface). These settings are specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. Specifying ***useDnaDefTP*** means using the value given by *defaultTransferPriority* in the associated *Dna* for this DLCI.
Mib	FrameRelayUni
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

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useDnaDefTP

Default useDnaDefTP

ATTRIBUTE FrUni Dlci Dc discardPriority (dp)

Access Read and write

Description This attribute specifies the discard priority for outgoing call using this DLCI.

The discard priority has three provisioning values: ***normal***, ***high***, and ***useDnaDefPriority***. Under congestion conditions, traffic with ***normal*** priority is discarded before traffic with ***high*** priority. The *Dna* default value (provisioned by *outDefaultPriority*) is taken if this attribute is set to the value ***useDnaDefPriority***.

Mib FrameRelayUni

Values normal
high
useDnaDefPriority

Default useDnaDefPriority

ATTRIBUTE FrUni Dlci Dc deDiscardPriority (ddp)

Access Read and write

Description This attribute specifies whether the *discardPriority* applies to DE frames for this DLCI.

When set to ***determinedByDiscardPriority***, traffic with DE bit set will be discarded according to the setting of the *discardPriority*.

When set to ***lowest***, all traffic with DE bit set is treated the same and is sent to the subnet at the lowest discard priority.

Mib FrameRelayUni

Values lowest
determinedByDiscardPriority

Default determinedByDiscardPriority

ATTRIBUTE FrUni Dlci Dc dataPath (dpa)

Access Read and write

Description

This attribute specifies the data path to be used by Virtual Circuits on this interface. The value of the *dataPath* attribute in the *Dna* component is overridden by this attribute if the value is not ***useDnaValue***.

This value applies to the connection after data transfer state is reached. All

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the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established.

The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection.

A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value.

dprsOnly - The dynamic packet routing system is used.

dprsMcsOnly - The DPRS Multi-Service Cut-Through Switching path is used.

dprsMcsFirst - The DPRS Multi-Service Cut-Through Switching path is used if it is available. If it is not available, ***dprsOnly*** is used.

useDnaValue - The routing system used is based on the value provisioned in the *Dna* component.

Mib: FrameRelayUni

Values:
dprsOnly (dpOnly)
dprsMcsOnly (mcOnly)
dprsMcsFirst (mcFrst)
useDnaValue (dnaVal)

Default: useDnaValue

ATTRIBUTE FrUni Dlci Dc cugIndex (ci)

Access: Read and write

Description

This attribute specifies the CUG index which is to be signaled in PVC and SPVC call requests to the remote end.

The type of CUG signaling is defined in attribute *cugType* in this component.

Mib: FrameRelayUni

Values: Decimal (0..255)

Default: 0

ATTRIBUTE FrUni Dlci Dc cugType (ct)

Access: Read and write

Description

This attribute specifies the type of CUG signaling to be used in PVC and SPVC call requests. Index of CUG to be used is defined in attribute *cugIndex* in this component.

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Possible values are:
cug - signal CUG
cugOa - signal CUG with outgoing access
doNotSignal - no CUG in call request

Mib	FrameRelayUni
Values	cug cugOa doNotSignal
Default	doNotSignal

ATTRIBUTE FrUni Dlci Dc mapIpCosToFrQos (mapctof)

Access	Read and write
Description	This attribute specifies whether an IP TOS value is mapped to an FR QOS. The mapping used is provisioned in the *Mod Frs IpCosToFrQos* component. When this attribute is set to ***yes***, at Frame Relay egress, the IP TOS byte in each frame is checked. The TOS value determines the egress emission queue and the discard priority for that frame. When this attribute is set to ***no***, FR QOS is determined by the provisioned discard priority and transfer priority. When this attribute is set to ***protocolDependent*** at Frame Relay egress, the IP version field in each frame is checked. If the IP version is IP version Four, the TOS value determines the egress emission queue and the discard priority for that frame. If not, the FR QOS is determined by the provisioned discard priority and transfer priority. A semantic check error is generated when this attribute is set to either ***yes*** or ***protocolDependent***, and a *FrUni DirectConnection* component is provisioned under the same *FrUni* component.
Mib	FrameRelayUni
Values	no yes protocolDependent
Default	no

COMPONENT FrUni Dlci Vc

Groups	GROUP FrUni Dlci Vc CallData (Cad) GROUP FrUni Dlci Vc IntervalData (Intd) GROUP FrUni Dlci Vc FrameRelayData (Frd)
Scope	Application

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Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	FrameRelayUni
Common Verbs	Help List Display

VERB Ping **FrUni Dlci Vc**

Impact	Passive
Description	Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/*<n>* Dlci/*<n>* Vc

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the

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sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP FrUni Dlci Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.

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Mib	FrameRelayUni
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE FrUni Dlci Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	FrameRelayUni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrUni Dlci Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	FrameRelayUni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrUni Dlci Vc diagnosticCode

Access	Read only

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Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	FrameRelayUni
Values	x121 e164
Default	No default

ATTRIBUTE FrUni Dlci Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrUni Dlci Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	FrameRelayUni

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Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrUni Dlci Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	FrameRelayUni
Values	x121 e164
Default	No default

ATTRIBUTE FrUni Dlci Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrUni Dlci Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	FrameRelayUni
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrUni Dlci Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	FrameRelayUni
Values	yes no
Default	No default

ATTRIBUTE FrUni Dlci Vc fastSelectCall

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Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	FrameRelayUni
Values	yes no
Default	No default

ATTRIBUTE FrUni Dlci Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	FrameRelayUni
Values	high normal
Default	No default

ATTRIBUTE FrUni Dlci Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	FrameRelayUni
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE FrUni Dlci Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	FrameRelayUni
Values	normal high
Default	No default

ATTRIBUTE FrUni Dlci Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	FrameRelayUni

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Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrUni Dlci Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	FrameRelayUni
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrUni Dlci Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	FrameRelayUni
Values	throughput delay multimedia
Default	No default

ATTRIBUTE FrUni Dlci Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	FrameRelayUni
Values	throughput delay multimedia
Default	No default

ATTRIBUTE FrUni Dlci Vc emissionPriorityToNetwork (epto)

Access	Read only
Description	This attribute displays the network internal emission priority to the network.
Mib	FrameRelayUni
Values	normal high interrupting

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Default	No default

ATTRIBUTE FrUni Dlci Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	FrameRelayUni
Values	normal high interrupting
Default	No default

ATTRIBUTE FrUni Dlci Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.
Mib	FrameRelayUni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE FrUni Dlci Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.

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Mib	FrameRelayUni
List of	The name of the component
Default	No default

GROUP FrUni Dlci Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	FrameRelayUni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrUni Dlci Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	FrameRelayUni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrUni Dlci Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails,

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when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.

Mib	FrameRelayUni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrUni Dlci Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	FrameRelayUni
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrUni Dlci Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	No default

GROUP FrUni Dlci Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a

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different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers

Mib — FrameRelayUni

ATTRIBUTE FrUni Dlci Vc frmCongestedToSubnet

Access — Read only

Description — This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.

Mib — FrameRelayUni

Values — Decimal (0..5000)

Default — No default

ATTRIBUTE FrUni Dlci Vc cannotForwardToSubnet

Access — Read only

Description — This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion.
Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.

Mib — FrameRelayUni

Values — Decimal (0..5000)

Default — No default

ATTRIBUTE FrUni Dlci Vc notDataXferToSubnet

Access — Read only

Description — This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.

Mib — FrameRelayUni

Values — Decimal (0..5000)

Default — No default

ATTRIBUTE FrUni Dlci Vc outOfRangeFrmFromSubnet

Access — Read only

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Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc frmLossTimeouts

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Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc ooSeqByteCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal

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	subnet packet disorder (not due to subnet packet discard). Current implementation also uses this statistics to set a maximum size for the out-of-sequenced queue.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	FrameRelayUni
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE FrUni Dlci Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.

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Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	FrameRelayUni
Values	Decimal (0..50000)
Default	No default

COMPONENT FrUni Dlci ServiceParametersProv (Sp)

Groups	GROUP FrUni Dlci Sp ServiceParametersProv (Parms)
Scope	Application
Description	*FrUni/n Dlci/n ServiceParametersProv* This component contains the provisionable traffic control attributes for its parent *Dlci* component.
Mib	FrameRelayUni
Common Verbs	Help List Display

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GROUP FrUni Dlci Sp ServiceParametersProv (Parms)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Data Link Connection Identifier. These attributes reflect the service parameters specific to this instance of DLCI. The congestion control attributes in this group are defined in T1.606 Addendum 1.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Sp maximumFrameSize (n203)

Access	Read and write
Description	This attribute specifies the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.
Mib	FrameRelayUni
Values	Decimal (1..8187)
Units	octets
Default	2100

ATTRIBUTE FrUni Dlci Sp rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether rate enforcement is in effect for this user Data Link Connection on this Frame Relay interface. Turning on rate enforcement means that CIR and DE=1 traffic will be measured and enforced. Turning off rate enforcement means that all frames from the user will be accepted and no modifications to the frame with respect to the DE bit will be made.
Mib	FrameRelayUni
Values	off on
Default	on

ATTRIBUTE FrUni Dlci Sp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR) in bits per second (bit/s). When *rateEnforcement* is set to ***on***, *cir* is the rate at which the network agrees to transfer information under normal conditions. This

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rate is measured over a measurement interval (*t*) that is determined internally based on CIR and the committed burst size (Bc). An exception to this occurs when CIR is provisioned to be zero, in which case the measurement interval (*t*) must be provisioned explicitly.

This attribute is ignored when *rateEnforcement* is ***off***. If *rateEnforcement* is ***on*** and this attribute is ***0***, *Bc* must also be ***0***.

Mib	FrameRelayUni
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrUni Dlci Sp committedBurstSize (bc)

Access	Read and write

Description

This attribute specifies the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc.

This attribute is ignored when *rateEnforcement* is ***off***. If *rateEnforcement* is ***on*** and this attribute is ***0***, *cir* must also be ***0***.

Mib	FrameRelayUni
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrUni Dlci Sp excessBurstSize (be)

Access	Read and write

Description

This attribute specifies the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here.

CIR, Bc, and Be cannot all be zero when rateEnforcement is on.

Mib	FrameRelayUni
Values	Decimal (0..50000000)
Units	bits
Default	0

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ATTRIBUTE FrUni Dlci Sp measurementInterval (t)

Access	Read and write
Description	When *cir* and *bc* are zero and *rateEnforcement* is on, this attribute must be provisioned to specify the time interval (in milliseconds) over which rates and burst sizes are measured. When *cir* and *bc* are non-zero, the time interval is internally calculated and is *not shown*. In that situation, this field is ignored, and is not representative of the time interval. This attribute is ignored when *rateEnforcement* is ***off***, or when *cir* and *bc* are ***non-zero***. If *rateEnforcement* is ***on*** and both *cir* and *bc* are ***zero***, this field must be ***non-zero***.
Mib	FrameRelayUni
Values	Decimal (0..25500)
Units	msec
Default	0

ATTRIBUTE FrUni Dlci Sp rateAdaptation (ra)

Access	Read and write
Description	This attribute specifies whether rate adaptation is in effect for this user Data Link Connection on this Frame Relay interface. Rate adaptation is a feature that, in periods of congestion, adapts the rate at which the user is allowed to send data into the network to that which the network is able to handle at that time. This pro-active measure of handling congestion optimizes network resources by causing the ingress to discard frames that would otherwise be discarded in the network. If this attribute is set to ***on***, then, at the onset of congestion, the excess information rate (EIR) is reduced to a very low rate. If congestion persists, then the allowed CIR is reduced geometrically by 25% of the current value at that time. The minimum to which CIR can be reduced is 1/16th (6.25%) of the provisioned value. As congestion alleviates, CIR is increased linearly by 6.25% of the provisioned value specified in *committedInformationRate*. If set to ***eirOnly***, then rate adaptation will only apply to the excess information rate (EIR). At the onset of congestion, the allowed EIR is reduced by 25% of its provisioned value. If congestion persists, EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. If set to ***cirProportionate***, then rate adaptation will also only apply to the excess information rate (EIR). At the onset of congestion the initial allowed EIR is set to a multiple of the provisioned CIR. If congestion persists, the

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allowed EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. Note that the allowed EIR may be set higher than the provisioned EIR, since it is calculated initially using another parameter, the provisioned CIR. If the allowed EIR at the moment is higher than the provisioned EIR, then the provisioned EIR is used instead.

This attribute can only be set to ***on eirOnly*** or ***cirProportionate*** if *rateEnforcement* is turned ***on***.

This attribute must be set to ***off*** if the *BnxIwf* component is provisioned under this *Dlci*.

Mib — FrameRelayUni

Values
off
on
eirOnly
cirProportionate

Default — off

ATTRIBUTE FrUni Dlci Sp accounting (ac)

Access — Read and write

Description

This attribute specifies whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***accountingOn*** bit and at least one of the ***accountCollection*** bits in the ***DataNetworkAddress*** component must be set to on.

Mib — FrameRelayUni

Values
off
on

Default — on

ATTRIBUTE FrUni Dlci Sp raSensitivity (rasens)

Access — Read and write

Description

This attribute specifies the sensitivity of the rate adaptation system. A higher number indicates a higher sensitivity and therefore a quicker reaction time to network conditions. A quicker reaction time allows the network to discard frames at the access and protect network resources, but can lead to false alarms and a greater fluctuation of the allowed rate. A higher setting therefore tends to favour the protection of the network over the allowed throughput of the user.

A lower number indicates a lower sensitivity and therefore a slower reaction to network conditions. A slower reaction time results in a greater amount of user traffic allowed into the network, but can lead to a waste of

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network bandwidth since the traffic may be discarded at the congested resource. A lower setting therefore tends to favour the allowed throughput of the user over the protection of the network.

This attribute is applicable for adapting EIR when *rateAdaptation* is ***eirOnly*** or ***cirProportionate***, or CIR when *rateAdaptation* is ***on***.

This attribute is ignored if *rateAdaptation* is turned ***off***.

Mib: FrameRelayUni

Values: Decimal (1..20)

Default: 7

ATTRIBUTE FrUni Dlci Sp updateBCI (updBCI)

Access: Read and write

Description

This attribute specifies whether internal Backward Congestion Indication (BCI) bits will report congestion external to the network, as communicated through incoming BECN bits.

If *updateBCI* is set to ***on***, then BCI bits for incoming frames will be set if the BECN on the frame is set. If *updateBCI* is set to ***off***, then incoming BECN bits have no effect.

Setting *updateBCI* ***on*** for a DLCI means that the remote end of the DLCI, which is specified by the *remoteDna* and *remoteDlci* attributes of the *dc* component of the DLCI, may perform Rate Adaptation using the flow of incoming BECN bits, in addition to internal congestion management systems.

If the *rateAdaptation* attribute of the remote DLCI is provisioned as ***eirOnly***, ***cirProportionate***, or ***on***, then congestion from another network may trigger dynamic congestion management. If the *rateAdaptation* attribute of the remote DLCI is provisioned to ***off***, then the setting of *updateBCI* attribute here will have no effect.

Mib: FrameRelayUni

Values:
off
on

Default: off

ATTRIBUTE FrUni Dlci Sp correlationTag (ctag)

Access: Read and write

Description: This attribute specifies the unique string which identifies each end of a connection.

If required for correlation purposes, the attribute must be provisioned with

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	the same value at both ends of the connection.This attribute can be left as an empty string when the functionality is not required, or when the user requires an empty circuit identifier string against the DLCI. This attribute can be used for off-switch data correlation purposes. Downstream processing uses this attribute to correlate data records (accounting etc.) issued at different nodes in the network. In the accounting record, the value for the *correlationTag* attribute appears as the attribute *circuitId* (circuit identifier) for the endpoint.
Mib	FrameRelayUni
Values	String (0..32, ASCII)
Default	""

ATTRIBUTE FrUni Dlci Sp frf12EndToEnd (frf12)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether FRF.12 End-to-End fragmentation is turned on for this *Dlci* component. When this attribute is set to ***on***, ingress End-to-End FRF.12 fragments are reassembled to frame relay packets, and egress frame relay packets are fragmented to End-to-End FRF.12 fragments.
Mib	FrameRelayUni
Values	off on
Default	off

ATTRIBUTE FrUni Dlci Sp frf12FragmentSize (fragSize)

Access	Read and write
Description	This attribute specifies the maximum payload in octets for a FRF.12 fragment on this *Dlci* component. The frame relay header, FRF.12 header and CRC octets are not included.
Mib	FrameRelayUni
Values	Decimal (40; 48; 60; 80; 120; 240; 480)
Units	octets
Default	60

COMPONENT FrUni Dlci LoopBack (Lb)

Groups	GROUP FrUni Dlci Lb Statistics (Stats)
Scope	Application

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Description	*FrUni/n Dlci/n LoopBackFrNni/n Dlci/n LoopBack*This component is the data loopback tool for the parent *DLCI*.
Mib	FrameRelayUni
Common Verbs	Help List Display

VERB START **FrUni Dlci Lb**

Impact	Service
Description	*start FrUni/n Dlci/n LoopBack* *start FrNni/n Dlci/n LoopBack*This command resets the *LoopbackStatistics* and initiates the loopback mode. The *loopbackState* for this *DLCI* is set to ***on*** for the duration of the loopback mode. When a *DLCI* is in loopback mode, frames coming from the link are returned to the link, incrementing the local loopback statistics. Also, frames coming from the VC are returned to the VC, incrementing the remote loopback statistics. The loopback mode is ended using the stop command.

VERB STOP **FrUni Dlci Lb**

Impact	Service
Description	*stop FrUni/n Dlci/n LoopBack stop FrNni/n Dlci/n LoopBack* This command terminates the loopback mode and displays the loopback statistics.

GROUP **FrUni Dlci Lb** **Statistics (Stats)**

Properties	Operational
Description	This group contains all the statistics for the data loopback tool.
Mib	FrameRelayUni

ATTRIBUTE **FrUni Dlci Lb** **localTotalFrm (ltf)**

Access	Read only
Description	This attribute records the number of frames looped back to the link since loopback was last started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE **FrUni Dlci Lb** **localTotalBytes (ltb)**

Access	Read only
Description	This attribute records the number of bytes looped back to the link since loopback mode was started.

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Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localFecnFrm (lff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localBecnFrm (lbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localDeFrm (ldf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localDeBytes (ldb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrUni Dlci Lb remoteTotalFrm (rtf)

Access	Read only
Description	This attribute records the number of frames looped back to the subnet since loopback was last started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteTotalBytes (rtb)

Access	Read only
Description	This attribute records the number of bytes looped back to the subnet since loopback was last started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteFecnFrm (rff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteBecnFrm (rbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteDeFrm (rdf)

Access	Read only

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Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteDeBytes (rdb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni Dlci EgressServiceParameters (EgressSp)

Groups	GROUP FrUni Dlci EgressSp Provisioned (Prov)
Scope	Application
Description	*FrNni/n Dlci/n EgressServiceParameters* This component contains the provisionable attributes of the egress direction for the parent *Dlci* component.
Mib	FrameRelayUni
Common Verbs	Help List Display

GROUP FrUni Dlci EgressSp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for this component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci EgressSp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR) for the egress direction. It is used for Call Admission Control (CAC) at the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as

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	the *committedInformationRate* attribute under the *ServiceParameters* component.
Mib	FrameRelayUni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bit/s
Default	sameAsServiceParameters

ATTRIBUTE FrUni Dlci EgressSp committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size (Bc) for the egress direction. It is used for performing Call Admission Control (CAC) at the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *committedBurstSize* attribute under the *ServiceParameters* component.
Mib	FrameRelayUni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bits
Default	sameAsServiceParameters

ATTRIBUTE FrUni Dlci EgressSp excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size (Be) for the egress direction. It is used for Call Admission Control (CAC) function towards the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *excessBurstSize* attribute under the *ServiceParameters* component.
Mib	FrameRelayUni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bits
Default	sameAsServiceParameters

ATTRIBUTE FrUni Dlci EgressSp measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval over which rates and burst sizes are measured in the egress direction. It is used for bandwidth reservation for Call Admission Control (CAC) towards the egress link.

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If the value is set to ***sameAsSp***, the value of this attribute is the same as the *measurementInterval* attribute under the *ServiceParameters* component.

Mib: FrameRelayUni

Values: Decimal (0..25500)
sameAsServiceParameters (sameAsSp)

Units: msec

Default: sameAsServiceParameters

COMPONENT FrUni Dlci StandbyVc (StbyVc)

Groups: GROUP FrUni Dlci StbyVc CallData (Cad)

Scope: Application

Description: *FrUni/n Dlci/n StandbyVc*
This component represents the call data of the Standby Frame Relay VC on the active FP. This is the VC that becomes active if the FP of the remote FrUni fails and a switchover occurs.

Mib: FrameRelayUni

Common Verbs:
Help
List
Display

GROUP FrUni Dlci StbyVc CallData (Cad)

Properties: Operational

Description: This group represents operational call data related to Frame Relay *StandbyVc* on the active FP.

Mib: FrameRelayUni

ATTRIBUTE FrUni Dlci StbyVc state

Access: Read only

Description: This attribute indicates the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.

Mib: FrameRelayUni

Values:
creating
readyP1
dteWaitingP2
dceWaitingP3
dataTransferP4
unsupportedP5
dteClearRequestP6

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	dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrUni Dlci StbyVc previousState

Access	Read only
Description	This attribute indicates the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	FrameRelayUni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrUni Dlci StbyVc diagnosticCode

Access	Read only
Description	This attribute indicates the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc previousDiagnosticCode

Access	Read only
Description	This attribute indicates the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc calledNpi

Access	Read only
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the called end.

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Mib	FrameRelayUni
Values	x121 e164
Default	No default

ATTRIBUTE FrUni Dlci StbyVc calledDna

Access	Read only
Description	This attribute indicates the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete the *StandbyVc* connection.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc calledLcn

Access	Read only
Description	This attribute indicates the Logical Channel Number of the called end. It is valid only after both ends of the *StandbyVc* exchanged relevant information.
Mib	FrameRelayUni
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc callingNpi

Access	Read only
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the calling end.
Mib	FrameRelayUni
Values	x121 e164
Default	No default

ATTRIBUTE FrUni Dlci StbyVc callingDna

Access	Read only
Description	This attribute indicates the active Data Network Address (*Dna*) of the calling end.
Mib	FrameRelayUni
Values	BCD (1..15)

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Default	No default

ATTRIBUTE FrUni Dlci StbyVc callingLcn

Access	Read only
Description	This attribute indicates the Logical Channel Number of the calling end.
Mib	FrameRelayUni
Values	Decimal (1..65535)
Default	No default

COMPONENT FrUni Dlci SpareDirectCall (SpareDc)

Groups	GROUP FrUni Dlci SpareDc Options
Scope	Application
Description	*FrUni/n Dlci/n SpareDirectCall* This component defines the Remote Data Network Address of the *SpareDirectCall*, all other direct call options will be the same as the *FrUni/n Dlci/n DirectCall*. The provisioning of this component will create a standby permanent (PVC) call, used for the ***frUniPvcSparingDprs*** feature. This *SpareDirectCall* should only be provisioned when the remote *FrUni* is provisioned with a *SpareDna.* If this component is provisioned, the value of *FrUni Dc type* must be ***pemanentMaster*** or ***permanentSlave***.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Dlci SpareDc Options

Properties	Provisioned
Description	This group contains attributes associated with a *SpareDirectCall*. It defines the connection path. This connection can only be permanent (PVC).
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci SpareDc spareRemoteNpi (srnpi)

Access	Read and write
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *spareRemoteDna.* This should be set to the *SpareDna npi* of the remote *FrUni.*

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Mib	FrameRelayUni
Values	x121 e164
Default	x121

ATTRIBUTE FrUni Dlci SpareDc spareRemoteDna (srdna)

Access	Read and write
Description	This attribute specifies the Spare Data Network Address (SDNA) of the service at the remote end of the DLCI. This is the called (destination) DCE address (DNA) of this PVC. This should be set to the *SpareDna dna* of the remote *FrUni*.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

COMPONENT FrUni Dlci Frf12Stats (Frf12)

Groups	GROUP FrUni Dlci Frf12 Frf12Stats (Stats)
Scope	Application
Description	*FrUni/n Dlci/n Frf12Stats* This component represents the End-to-End FRF.12 statistics of a Data Link Connection Identifier. FRF.12 provides the capability to fragment frames that are sent to the link, and reassemble fragments that arrive from the link. The *Frf12Stats* component may be used to monitor the functioning of the End-to-End FRF.12 feature when the feature is enabled. This component is only visible when the feature is enabled.
Mib	FrameRelayUni
Common Verbs	Help List Display

GROUP FrUni Dlci Frf12 Frf12Stats (Stats)

Properties	Operational
Description	This group contains the operational attributes for the *Frf12Stats* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Frf12 fragFromIf (ffi)

Access	Read only

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Description	This attribute counts the End-to-End FRF.12 fragments received from the link.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 peakFragSizeFromIf (pkSize)

Access	Read only
Description	This attribute indicates the size of the largest fragment received from the link. It is reset on every accounting collection period.
Mib	FrameRelayUni
Values	Decimal (0..65535)
Default	0

ATTRIBUTE FrUni Dlci Frf12 expectedSequenceNumber (expSeq)

Access	Read only
Description	This attribute indicates the expected sequence number in the next fragment received from the link. The attribute is set to the sequence number of the last fragment received plus one.
Mib	FrameRelayUni
Values	Decimal (0..4095)
Default	0

ATTRIBUTE FrUni Dlci Frf12 outOfSequenceEvent (outOfSeq)

Access	Read only
Description	This attribute counts the times an out of sequence number event occurs. An out of sequence number event occurs when a fragment received from the link has a sequence number that is different from the one indicated by the *expectedSequenceNumber* attribute.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 headerErrorEvent (hdrErr)

Access	Read only
Description	This attribute counts the times an End-to-End FRF.12 header error event occurs. The header must comply with the End-to-End FRF.12 Implementation Agreement.

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Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 cpuExhaustionFromIfEvent (extnfi)

Access	Read only
Description	This attribute counts the times a CPU exhaustion event occurs. A CPU exhaustion event occurs when ingress fragments requiring reassembly are discarded due to CPU exhaustion.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 discFragFromIf (discfi)

Access	Read only
Description	This attribute counts fragments received from the link that have been discarded. Fragments are discarded when header error, out of sequence number or CPU exhaustion event occurs.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 fragToIf (fti)

Access	Read only
Description	This attribute counts the End-to-End FRF.12 fragments sent to the link.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 sendSequenceNumber (sndSeq)

Access	Read only
Description	This attribute indicates the sequence number of the next fragment to be sent to the link.
Mib	FrameRelayUni
Values	Decimal (0..4095)
Default	0

ATTRIBUTE FrUni Dlci Frf12 cpuExhaustionToIfEvent (extnti)

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Access	Read only
Description	This attribute counts the times a CPU exhaustion event occurs. A CPU exhaustion event occurs when egress frames requiring fragmentation are discarded due to CPU exhaustion.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 longFrameTolfEvent (longti)

Access	Read only
Description	This attribute counts the times a long frame event occurs. A long frame event occurs when an egress frame requiring fragmentation is discarded because it will generate more than fourty fragments.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 fragmentationErrorsTolf (fragerr)

Access	Read only
Description	This attribute counts the egress frames discarded due to an internal error during fragmentation.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni Dlci BnxInterworkingFunction (Bnxlwf)

Groups	GROUP FrUni Dlci BnxIwf Provisioned (Prov) GROUP FrUni Dlci BnxIwf Operational (Op)
Scope	Application
Description	*FrUni/n Dlci/n BnxInterworkingFunction* *FrNni/n Dlci/n BnxInterworkingFunction* This component specifies that the parent DLCI uses BNX frame relay over

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an IP network as its networking mechanism. It contains the networking parameters specific to BNX networking.

Mib — FrUniPvcBnx

Common Verbs
- Help
- List
- Display
- Add
- DELete

VERB Redirect **FrUni Dlci Bnxlwf**

Impact — Service

Description

*Redirect [-**force**] -**destination**(<**destination**>) FrUni/n Dlci/n BnxInterworkingFunction*
or
*Redirect [-**force**] -**destination**(<**destination**>) FrNni/n Dlci/n BnxInterworkingFunction*

This verb is used to manually select the PVC destination between the primary and backup destinations, or to enable the automatic redirection. The primary destination and the backup destination are specified by the *BnxInterworkingFunction* component.

The ***-destination*** option indicates the destination of PVC redirection. The value of this option can be ***primary***, ***backup,*** or ***onDemand***.

The value ***primary*** means that the destination for this PVC has been manually selected to be the primary destination, automatic redirection is disabled. This redirect action corresponds to the “Redirect to Primary” redirect action in the BNX implementation.

The value ***backup*** means that the destination for this PVC has been manually selected to be the backup destination, and automatic redirection is disabled. The backup destination must be provisioned. This redirect action corresponds to the “Redirect to Backup” redirect action in the BNX implementation.

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The value ***onDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The *crossNetListenEnabled* attribute of the *BnxProtocol* component must be ***yes*** and the backup destination must be provisioned. This redirect action corresponds to the “Switch on Demand” redirect action in the BNX implementation.

The ***-force*** option specifies that the PVC is redirected to either the primary destination or the backup destination indicated by the ***-destination*** option even if the destination is not active. When the value of ***-destination*** is ***onDemand***, this option is ignored.

GROUP FrUni Dlci Bnxlwf **Provisioned (Prov)**

Properties	Provisioned
Description	This group defines the provisioning attributes associated with a PVC using BNX frame relay interworking.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Dlci Bnxlwf **calledIpAddress (cia)**

Access	Read and write
Description	This attribute specifies the IP address of the primary destination which receives the datagrams.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Dlci Bnxlwf **calledDlci (cdlci)**

Access	Read and write
Description	This attribute specifies the DLCI of the primary destination which receives the datagrams.
Mib	FrUniPvcBnx
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf **trafficPriority (tp)**

Access	Read and write
Description	This attribute specifies the user control on traffic priority. The value is transmitted in the traffic priority field of the BNX header. Possible values are: ***1*** - High Priority ***2*** - Normal Priority

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3 - Low Priority
useBpDefault - use the *defaultTrafficPriority* attribute value from the *BnxProtocol* component.

Mib	FrUniPvcBnx
Values	1 2 3 useBpDefault
Default	useBpDefault

ATTRIBUTE FrUni Dlci Bnxlwf backupCalledIpAddress (bcia)

Access	Read and write
Description	This attribute specifies the IP address of the backup destination which receives the datagrams. A value of ***0.0.0.0*** for this attribute and a value of ***undefined*** for the *backupCalledDlci* attribute specify that there is no backup destination.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Dlci Bnxlwf backupCalledDlci (bcdlci)

Access	Read and write
Description	This attribute specifies the DLCI of the backup destination which receives the datagrams. A value of ***undefined*** for this attribute and a value of ***0.0.0.0*** for the *backupCalledIpAddress* attribute specify that there is no backup destination.
Mib	FrUniPvcBnx
Values	Decimal (16..1007) undefined
Default	undefined

ATTRIBUTE FrUni Dlci Bnxlwf redirectType (rtype)

Access	Read and write
Description	This attribute indicates the type of DTE notification when a PVC redirection between primary and backup destinations occurs. ***transparent*** means no notification is sent to the DTE. ***aIntrusive*** means that an asynchronous update with the A-bit not set is sent to the DTE.

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nIntrusive means that an asynchronous update with the N-bit set is sent to the DTE.

Mib	FrUniPvcBnx
Values	transparent aIntrusive nIntrusive
Default	aIntrusive

ATTRIBUTE FrUni Dlci Bnxlwf minActiveIntervals (mai)

Access	Read and write
Description	This attribute specifies the minimum number of consecutive time intervals for which the primary destination must be active before the PVC is redirected back to the primary destination from the backup destination in ***switchOnDemand*** mode. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***. If the value of this attribute is ***0***, the PVC is redirected back to the primary destination as soon as an active cross-net message is received from the primary destination.
Mib	FrUniPvcBnx
Values	Decimal (0..4)
Default	0

ATTRIBUTE FrUni Dlci Bnxlwf redirectAction (ra)

Access	Read and write
Description	This attribute indicates the redirect action for a PVC. The Redirect command can be used to override this redirect action. ***switchOnDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The *crossNetListenEnabled* attribute of the *BnxProtocol* component must be ***yes*** and the backup destination must be provisioned. This redirect action corresponds to the “Switch on Demand” redirect action in the BNX implementation. ***manualPrimary*** means that the destination for this PVC has been manually selected to be the primary destination, automatic redirection is disabled. This redirect action corresponds to the “Redirect to Primary” redirect action in the BNX implementation. ***manualBackup*** means that the destination for this PVC has been manually selected to be the backup destination, and automatic redirection

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is disabled. The backup destination must be provisioned. This redirect action corresponds to the “Redirect to Backup” redirect action in the BNX implementation.

Mib	FrUniPvcBnx
Values	switchOnDemand manualPrimary manualBackup
Default	manualPrimary

GROUP FrUni Dlci Bnxlwf Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the BNX frame relay interworking functionality.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Dlci Bnxlwf timeOfLastStateChange (tlsc)

Access	Read only
Description	This attribute indicates the time at which the state of the DLCI last changed.
Mib	FrUniPvcBnx
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf crossNetSent (cnsent)

Access	Read only
Description	This attribute indicates if a cross-net status message was sent to the primary destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component.
Mib	FrUniPvcBnx
Values	unsent sent
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf crossNetStatus (cns)

Access	Read only
Description	This attribute indicates the state of the PVC when the remote end is the primary destination. If the *crossNetListenEnabled* attribute of the *BnxProtocol* component is set to ***yes***, this attribute reflects the state as

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reported by the remote end. If the *crossNetListenEnabled* attribute is set to ***no***, the PVC is assumed to be up and this attribute has a value of ***active***.

Mib	FrUniPvcBnx
Values	inactive active
Default	inactive

ATTRIBUTE FrUni Dlci Bnxlwf **crossNetReceived (cnr)**

Access	Read only
Description	This attribute indicates if the DLCI has received a cross-net status message from the primary destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.
Mib	FrUniPvcBnx
Values	unrecv recv
Default	unrecv

ATTRIBUTE FrUni Dlci Bnxlwf **crossNetErrors (cne)**

Access	Read only
Description	This attribute counts how many polling intervals have elapsed without receiving an error free cross-net status message from the primary destination of the PVC. Errors are generally caused by time-outs. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Bnxlwf **ipAddressMismatches (iam)**

Access	Read only
Description	This attribute counts the received datagrams which were dropped because the source IP address in the IP header did not match the value of *calledIpAddress* or *backupCalledIpAddress* attribute. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE FrUni Dlci Bnxlwf lastMismatchedIpAddress (lmia)

Access	Read only
Description	This attribute indicates the source IP address in the IP header of the most recently received datagram which was dropped because this IP address did not match the value of *calledIpAddress* or *backupCalledIpAddress* attribute.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Dlci Bnxlwf backupCrossNetSent (bcnsent)

Access	Read only
Description	This attribute indicates if a cross-net status message was sent to the backup destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component.
Mib	FrUniPvcBnx
Values	unsent sent
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf backupCrossNetStatus (bcns)

Access	Read only
Description	This attribute indicates the state of the PVC when the remote end is the backup destination. If the *crossNetListenEnabled* attribute of the *BnxProtocol* component is set to ***yes***, this attribute reflects the state as reported by the remote end. If the *crossNetListenEnabled* attribute is set to ***no***, the PVC is assumed to be up and this attribute has a value of ***active***.
Mib	FrUniPvcBnx
Values	inactive active
Default	inactive

ATTRIBUTE FrUni Dlci Bnxlwf backupCrossNetReceived (bcnr)

Access	Read only
Description	This attribute indicates if the DLCI has received a cross-net status message from the backup destination of the PVC during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval*

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attribute of the *BnxProtocol*. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.

Mib	FrUniPvcBnx
Values	unrecv recv
Default	unrecv

ATTRIBUTE FrUni Dlci Bnxlwf backupCrossNetErrors (bcne)

Access	Read only
Description	This attribute counts how many polling intervals have elapsed without receiving an error free cross-net status message from the backup destination of the PVC. Errors are generally caused by time-outs. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Bnxlwf redirectMode (rmode)

Access	Read only
Description	This attribute indicates the mode of the PVC redirection. The value ***switchOnDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The value ***manual*** means that the destination for this PVC has been manually selected and automatic redirection is disabled. When the value is ***noBackup***, the PVC does not have a backup destination provisioned.
Mib	FrUniPvcBnx
Values	switchOnDemand manual noBackup
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf currentDestination (cdest)

Access	Read only
Description	This attribute indicates if the current destination is the primary destination or the backup destination.

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Mib	FrUniPvcBnx
Values	primary backup
Default	No default

ATTRIBUTE FrUni Dlci BnxIwf remoteIpAddress (ria)

Access	Read only
Description	This attribute indicates the IP address of the current destination.
Mib	FrUniPvcBnx
Values	IP address
Default	No default

ATTRIBUTE FrUni Dlci BnxIwf remoteDlci (rdlci)

Access	Read only
Description	This attribute indicates the DLCI of the current destination.
Mib	FrUniPvcBnx
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrUni Dlci BnxIwf ipFragFromSubnet (fragfs)

Access	Read only
Description	This attribute counts the IP fragments received from subnet by this Dlci. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci BnxIwf discardedIpFragments (discFrag)

Access	Read only
Description	This attribute counts the IP fragments that are dropped by this Dlci. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci BnxIwf discMisorderedFrm (dmfrm)

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Access	Read only
Description	This attribute counts the frames from subnet that are dropped due to misordered fragments. A misordered fragment occurs when the offset in the IP header is not equal to the expected offset, or the timer expires before the last fragment is received. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Bnxlwf **lastDroppedIpFragmentId (lastid)**

Access	Read only
Description	This attribute indicates the Id of the last misordered frame that was dropped.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni Dlci **IpConnection (IpConn)**

Groups	GROUP FrUni Dlci IpConn Provisioned (Prov)
Scope	Application
Description	*FrUni/n Dlci/n IpConnection* This component represents direct frame relay access to IP (IPoFR) for this *Dlci*. This *Dlci* must be linked to an *IpDlciGroup FrConnection*.
Mib	FrUniIpConn
Common Verbs	Help List Display Add DELete

GROUP FrUni Dlci IpConn **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IpConnection* component.
Mib	FrUniIpConn

ATTRIBUTE FrUni Dlci IpConn **linkToIpDlciGrp (dlcGrp)**

Access	Read and write

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Description	This attribute specifies the *IpDlciGroup FrConnection* associated with this component.
Mib	FrUniIpConn
Values	Link (Service, linkToFrDlci)
Default	No default

ATTRIBUTE FrUni Dlci IpConn de0DiscardPriority (de0Dp)

Access	Read and write
Description	This attribute specifies the discard priority for frames received on this DLCI whose DE bit is not set after being processed by the frame relay service. ***low*** specifies that the packet is least likely to be discarded. This value should be used for traffic that requires a high probability of being forwarded. ***high*** specifies that the packet is most likely to be discarded. This value should be used for traffic that is given a low probability of being forwarded. The value of this attribute must not be higher than the value of the *de1DiscardPriority* attribute.
Mib	FrUniIpConn
Values	low medium high
Default	medium

ATTRIBUTE FrUni Dlci IpConn de1DiscardPriority (de1Dp)

Access	Read and write
Description	This attribute specifies the discard priority for frames received on this DLCI whose DE bit is set after being processed by the frame relay service. ***low*** specifies that the packet is least likely to be discarded. This value should be used for traffic that requires a high probability of being forwarded. ***high*** specifies that the packet is most likely to be discarded. This value should be used for traffic that is given a low probability of being forwarded. The value of this attribute must not be lower than the value of the *de0DiscardPriority* attribute.
Mib	FrUniIpConn

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Values	low medium high
Default	high

ATTRIBUTE FrUni Dlci IpConn dpToDeMapLevel (dpToDe)

Access	Read and write
Description	This attribute specifies the lowest discard priority that will be mapped to a set DE bit. All frames with a discard priority of this level or higher, sent on this DLCI, will have the DE bit set to 1 after being processed by the frame relay service. If the value is ***notApplicable*** then all frames sent on this DLCI will have the DE bit set to 0, after being processed by the frame relay service.
Mib	FrUniIpConn
Values	low medium high notApplicable
Default	notApplicable

COMPONENT FrUni Signaling (Sig)

Groups	GROUP FrUni Sig DlciRange (Range) GROUP FrUni Sig ServiceParameters (ServParms) GROUP FrUni Sig SystemParameters (SysParms) GROUP FrUni Sig LapfSystemParameters (LapfSys) GROUP FrUni Sig OsiState (State) GROUP FrUni Sig Statistics (Stats) GROUP FrUni Sig LapfStatus (LapfStatus) GROUP FrUni Sig LapfStatistics (LapfStats) GROUP FrUni Sig FrsSvcAcc (Svcacc) GROUP FrUni Sig LastSvcClearCodes (Codes)
Scope	Application
Description	*FrUni/n Signaling* This component defines the FRF.4 and Q.922 (LAPF) parameters for Frame Relay switched virtual circuits at the User-Network interface. This

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component must be provisioned for the FrUni interface to support switched connections.

Mib	FriUniSig
Common Verbs	Help List Display Add DELete

GROUP FrUni Sig DlciRange (Range)

Properties	Provisioned
Description	This group contains the provisionable attribute to define the range of DLCIs for PVCs and SVCs. The purpose of this range is to prevent DLCI collisions between the provisioned PVCs and the dynamic SVCs.
Mib	FriUniSig

ATTRIBUTE FrUni Sig highestPvcDlci

Access	Read and write
Criticality	Process
Description	This attribute specifies the highest DLCI value that can be provisioned for a permanent connection. It partitions the DLCI space into permanent and switched connections. Permanent DLCI numbers higher than this value cannot be provisioned. The value ***0*** is used to indicate that no permanent connections are allowed on this interface. The value ***1007*** indicates that no switched connections are allowed on this interface.
Mib	FriUniSig
Values	Decimal (0; 16..1007)
Default	500

GROUP FrUni Sig ServiceParameters (ServParms)

Properties	Provisioned
Description	This group contains the provisionable FRF.4 service parameters.
Mib	FriUniSig

ATTRIBUTE FrUni Sig maximumFrameSize (dn1)

Access	Read and write
Description	This attribute specifies the maximum number of octets that may be included in the information field of the user DLCI of any switched connections using this interface. Its value must not be smaller than the value of *defaultMaximumFrameSize*.

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Mib	FriUniSig
Values	Decimal (1..8187)
Units	octets
Default	4096

ATTRIBUTE FrUni Sig defaultMaximumFrameSize (defaultdn1)

Access	Read and write
Description	This attribute specifies the default maximum number of octets that may be included in the information field of the user DLCI assigned for any switched connections using this interface. This value is used during call parameter negotiation for switched calls on this interface when the maximum frame size is not specified in the user's SETUP message. The value of this attribute must not exceed the value of the *maximumFrameSize* attribute.
Mib	FriUniSig
Values	Decimal (1..8187)
Units	octets
Default	2100

ATTRIBUTE FrUni Sig defaultCommittedInformationRate (defaultCir)

Access	Read and write
Description	This attribute specifies the default user to network direction CIR. This value is used during call parameter negotiation for switched calls on this interface when the CIR is not specified in the user's SETUP message.
Mib	FriUniSig
Values	Decimal (0..52000000)
Units	bit/s
Default	64000

ATTRIBUTE FrUni Sig defaultCommittedBurstSize (defaultBc)

Access	Read and write
Description	This attribute specifies the default user to network direction Bc. This value is used during call parameter negotiation for switched calls on this interface when the Bc is not specified in the user's SETUP message.
Mib	FriUniSig
Values	Decimal (0..52000000)
Units	bits
Default	64000

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ATTRIBUTE FrUni Sig defaultExcessBurstSize (defaultBe)

Access	Read and write
Description	This attribute specifies the default user to network direction Be. This value is used during call parameter negotiation for switched calls on this interface when the Be is not specified in the user's SETUP message.
Mib	FriUniSig
Values	Decimal (0..52000000)
Units	bits
Default	0

ATTRIBUTE FrUni Sig rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether rate enforcement is in effect for SVCs on this interface.
Mib	FriUniSig
Values	off on
Default	on

ATTRIBUTE FrUni Sig rateAdaptation (ra)

Access	Read and write
Description	This attribute specifies whether closed-loop rate adaptation is in effect for SVCs on this interface. Rate adaptation is a feature that, in periods of congestion, adapts the rate at which the user is allowed to send data into the network to that which the network is able to handle at that time. This proactive measure of handling congestion optimizes network resources by causing the ingress to discard frames that would otherwise be discarded in the network. If this attribute is set to ***on***, then, at the onset of congestion, the excess information rate (EIR) is reduced to a very low rate. If congestion persists, then the allowed CIR is reduced geometrically by 25% of the current value at that time. The minimum to which CIR can be reduced is 1/16th (6.25%) of the provisioned value. As congestion alleviates, CIR is increased linearly by 6.25% of the provisioned value specified in *committedInformationRate*. If set to ***eirOnly***, then rate adaptation will only apply to the excess information rate (EIR). At the onset of congestion, the allowed EIR is reduced by 25% of its provisioned value. If congestion persists, EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR.

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If set to ***cirProportionate***, then rate adaptation will also only apply to the excess information rate (EIR). At the onset of congestion the initial allowed EIR is set to a multiple of the provisioned CIR. If congestion persists, the allowed EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. Note that the allowed EIR may be set higher than the provisioned EIR, since it is calculated initially using another parameter, the provisioned CIR. If the allowed EIR at the moment is higher than the provisioned EIR, then the provisioned EIR is used instead.

This attribute can only be set to ***on*** or ***eirOnly*** if *rateEnforcement* is set to ***on***.

Mib — FriUniSig

Values
off
on
eirOnly
cirProportionate

Default — off

ATTRIBUTE FrUni Sig x213IeHandling (x213)

Access — Read and write

Description — The *x213IeHandling* attribute specifies how Frame Relay handles the X.213 Priority IE when it is in the FRF.4 setup message.

When the attribute is set to ***notSupported***, the X.213 Priority IE will not be recognized in the setup message. A FRF.4 status message will be sent to the calling DTE, with the indication that an unrecognized IE was encountered. The call setup then proceeds as normal, and the X.213 Priority IE does not appear in the setup message at the called end.

When the attribute is set to ***proprietary***, and the X.213 Priority IE is present in the FRF.4 setup message, it will be recognized. If there is no Frame Transfer Priority IE in the setup message, the first data byte of the X.213 Priority IE is used to select the transfer and discard priority values for the connection and the X.213 Priority IE is signaled to the called end in the setup message. If the Frame Transfer Priority IE is present in the FRF.4 setup message, its value is used to select the transfer priority, the discard priority is taken from the *FRUNI Dna* component, and the X.213 Priority IE is ignored.

Refer to the related Application Note for further details before setting the attribute value to ***proprietary***.

Mib — FriUniSig

Values
notSupported
proprietary

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Default	notSupported

ATTRIBUTE FrUni Sig raSensitivity (rasens)

Access	Read and write
Description	This attribute specifies the sensitivity of the rate adaptation system for all switched connections on this interface. A higher number indicates a higher sensitivity and therefore a quicker reaction time to network conditions. A quicker reaction time allows the network to discard frames at the access and protect network resources, but can lead to false alarms and a greater fluctuation of the allowed rate. A higher setting therefore tends to favor the protection of the network over the allowed throughput of the user. A lower number indicates a lower sensitivity and therefore a slower reaction to network conditions. A slower reaction time results in a greater amount of user traffic allowed into the network, but can lead to a waste of network bandwidth since the traffic may be discarded at the congested resource. A lower setting therefore tends to favour the allowed throughput of the user over the protection of the network. This attribute is applicable for adapting EIR when *rateAdaptation* is ***eirOnly*** or ***cirProportionate***, or CIR when *rateAdaptation* is ***on***. This attribute is ignored if *rateAdaptation* is ***off***.
Mib	FriUniSig
Values	Decimal (1..20)
Default	7

ATTRIBUTE FrUni Sig updateBCI (updBCI)

Access	Read and write
Description	This attribute specifies whether internal Backward Congestion Indication (BCI) bits will report congestion external to the network, as communicated through incoming BECN bits. If *updateBCI* is set to ***on***, then BCI bits for incoming frames will be set if the BECN on the frame is set. If *updateBCI* is set to ***off***, then incoming BECN bits has no effect. Setting *updateBCI* ***on*** for a DLCI means that the remote end of the DLCI, which is specified by the *remoteDna* and *remoteDlci* attributes of the *Dc* component of the *Dlci*, may perform Rate Adaptation using the flow of incoming BECN bits, in addition to internal congestion management systems. If the *rateAdaptation* attribute of the remote DLCI is provisioned as ***eirOnly***, ***cirProportionate***, or ***on***, then congestion from another network

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	may trigger dynamic congestion management. If there is no rate adaptation at the other end, then the setting of the *updateBCI* attribute at this end has no effect.
Mib	FriUniSig
Values	off on
Default	off

ATTRIBUTE FrUni Sig defaultLocCheck (defLoc)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether this end needs to check the location of Cause IE in a Release or a Disc message issued by local DTE. If this bit is set to ***on***, then this end checks the location of Cause IE issued by the local DTE and overwrite it by "user". If it is set to ***off***, then this end does not check the location in Cause IE.
Mib	FriUniSig
Values	off on
Default	on

GROUP FrUni Sig SystemParameters (SysParms)

Properties	Provisioned
Description	This group contains the provisionable FRF.4 system parameters.
Mib	FriUniSig

ATTRIBUTE FrUni Sig callSetupTimer (t303)

Access	Read and write
Description	This attribute specifies the time the network waits for a response to the SETUP message sent to the called user. Upon timer expiry, the SETUP message is retransmitted. The second expiry of this timer causes the call to be cleared.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrUni Sig disconnectTimer (t305)

Access	Read and write

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Description	This attribute specifies the time the network waits for a response to the DISCONNECT message sent to the user. Upon timer expiry, the RELEASE message is sent.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	30

ATTRIBUTE FrUni Sig releaseTimer (t308)

Access	Read and write
Description	This attribute specifies the time the network waits for a response to the RELEASE message sent to the user. Upon timer expiry, the RELEASE message is retransmitted. The second expiry of the timer causes the call to be released.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrUni Sig callProceedingTimer (t310)

Access	Read and write
Description	This attribute specifies the time the network waits for the CONNECT message from the called user after the network has received the optional CALL PROCEEDING message from the called user. Upon timer expiry, the call is cleared.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	10

ATTRIBUTE FrUni Sig networkType (type)

Access	Read and write
Description	This attribute specifies whether this Frame Relay service is running on a public or a private network. This value is used solely in populating applicable information elements within those FRF.4 messages that require a public or private network indication.
Mib	FriUniSig

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Values	private public
Default	private

ATTRIBUTE FrUni Sig restartReqTimer (t316)

Access	Read and write
Description	This attribute specifies the time the network waits for the RESTART ACKNOWLEDGE message from the adjacent network after sending a first RESTART message. Upon timer expiry, another RESTART message is sent. After the second expiry, the interface is treated as idle. If the *restartReqTimer* attribute is set to the default value, then the interface is treated as idle when it receives an indication that the link is up and does not send a RESTART message.
Mib	FriUniSig
Values	Decimal (0..255)
Units	seconds
Default	0

ATTRIBUTE FrUni Sig restartRcvTimer (t317)

Access	Read and write
Description	This attribute specifies the time the local network waits for the processing of a RESTART message received by the interface. Upon expiry of this timer, an alarm will be displayed to report the problem. The timer value must be less than the *restartReqTimer* provisioned value at the adjacent node.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	110

ATTRIBUTE FrUni Sig statusEnqTimer (t322)

Access	Read and write
Description	This attribute specifies the time the network waits for the requested STATUS message from the adjacent network. Upon expiry of this timer, another STATUS ENQUIRY message will be sent.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds

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Default	4

GROUP FrUni Sig LapfSystemParameters (LapfSys)

Properties	Provisioned
Description	This group contains the provisionable attributes for the SVC data link layer. The data link layer is governed primarily through ITU specification Q.922, and operates over DLCI 0..
Mib	FriUniSig

ATTRIBUTE FrUni Sig windowSize (ws)

Access	Read and write
Description	This attribute specifies the window size. This is the maximum number of unacknowledged sequenced frames that may be outstanding from or to this interface at any one time.
Mib	FriUniSig
Values	Decimal (1..127)
Default	7

ATTRIBUTE FrUni Sig retransmitLimit (rtl)

Access	Read and write
Description	This attribute specifies the number of times a frame can be retransmitted by the SVC data link layer before appropriate recovery action is taken.
Mib	FriUniSig
Values	Decimal (0..20)
Default	3

ATTRIBUTE FrUni Sig ackTimer (at)

Access	Read and write
Description	This attribute specifies how long the layer 2 protocol waits for an acknowledgment to a sent frame. The value set for *ackTimer* must be less than the value set for *idleProbeTimer*.
Mib	FriUniSig
Values	Decimal (1000..10000)
Units	msec
Default	1500

ATTRIBUTE FrUni Sig ackDelayTimer (adt)

Access	Read and write

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Description	This attribute specifies how long the network waits before sending an acknowledgment for a received in-sequence I-frame. A value of 0 means that every frame is acknowledged and there will be no delay in acknowledgment. A non-zero value means that one acknowledgement is sent for a number of frames.
Mib	FriUniSig
Values	Decimal (0..10000)
Units	msec
Default	0

ATTRIBUTE FrUni Sig idleProbeTimer (ipt)

Access	Read and write
Description	This attribute specifies how long the link is permitted to remain idle (that is, no frames are exchanged on the data link). Upon expiry of this timer, the network side's link layer polls its peer for status. The value set for *idleProbeTimer* must be greater than the value set for *ackTimer*.
Mib	FriUniSig
Values	Decimal (1000..65535000)
Units	msec
Default	30000

GROUP FrUni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FriUniSig

ATTRIBUTE FrUni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — FriUniSig

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE FrUni Sig operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — FriUniSig

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE FrUni Sig usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — FriUniSig

Values — idle
active (activ)
busy

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Default	idle

GROUP FrUni Sig Statistics (Stats)

Properties	Operational
Description	This group contains the statistics related to the SVC signaling layer at the interface level.
Mib	FriUniSig

ATTRIBUTE FrUni Sig currentNumberOfSvcCalls (ncall)

Access	Read only
Description	This attribute indicates the number of Frame Relay SVCs currently existing on this interface.
Mib	FriUniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrUni Sig inCalls (incall)

Access	Read only
Description	This attribute indicates the current number of incoming SVCs on this interface (that is, the number of SVCs for which this interface represents the destination end of the call).
Mib	FriUniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrUni Sig inCallsRefused (icr)

Access	Read only
Description	This attribute counts the incoming SVC call requests that are rejected by either this interface or by the called user. When this count exceeds the maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig outCalls (outcall)

Access	Read only
Description	This attribute indicates the current number of outgoing SVCs on this interface (that is, the number of SVCs for which this interface represents the source end of the call).

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Mib	FriUniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrUni Sig outCallsFailed (ocf)

Access	Read only
Description	This attribute counts the outgoing SVC call requests that are rejected by either this interface, or by the network side of the destination end, or by the called user. When this count exceeds the maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig protocolErrors (pe)

Access	Read only
Description	This attribute counts the number of times a FRF.4 protocol error has occurred. Any one of the following events constitutes a protocol error: 1. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir*, *Bc* and *Be* are all zero; 2. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir* is zero but *Bc* is non-zero, or *Bc* is zero but *Cir* is non-zero; 3. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, the *Minimum Acceptable CIR* is greater than *Cir*; 4. At the destination end, any of the destination to source direction link layer core parameters has been increased in the CONNECT message from the called user; 5. At the destination end, the destination to source direction *Cir* in the CONNECT message is smaller than the corresponding *minimum acceptable Cir* signaled to the called user; 6. At the source end, any of the source to destination direction link layer core parameters in the CONNECT message from the destination end has been increased; 7. At the source end, the source to destination direction *Cir*, after negotiation, is smaller than the corresponding *minimum acceptable Cir*; 8. The network has received a STATUS message from the user with an incompatible FRF.4 state. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE FrUni Sig qualityOfServiceNotAvailable (qosna)

Access	Read only
Description	This attribute counts the number of incoming and outgoing SVCs that are rejected because the quality of service requested cannot be met by the network. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig setupTimeout (setupt)

Access	Read only
Description	This attribute counts the number of times the T303 setup timer has expired. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig lastCauseInStatusMsgReceived (lcis)

Access	Read only
Description	This attribute indicates the cause value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is **0** which means that no STATUS message has been received for an existing call yet.
Mib	FriUniSig
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrUni Sig lastStateInStatusMsgReceived (lsis)

Access	Read only
Description	This attribute indicates the state value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is **notApplicable**.
Mib	FriUniSig

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Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active disconnectRequest disconnectIndication releaseRequest restartRequest restart notApplicable 2 4 5 7 8 13 14 15 16 17 18 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

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Default notApplicable

ATTRIBUTE FrUni Sig lastDlciReceivedStatus (ldrs)

Access Read only

Description This attribute shows the value of the DLCI that has most recently received a STATUS message from the user.

The initial value of this attribute is **0**.

Mib FriUniSig

Values Decimal (0; 16..1007)

Default 0

ATTRIBUTE FrUni Sig bandwidthNotAvailable

Access Read only

Description This attribute counts the number of call failures for each bandwidth pool due to the requested bandwidth not being available.

Mib FriUniSig

Vector of Decimal (0..4294967295)

Index Decimal (0..15)

Default No default

GROUP FrUni Sig LapfStatus (LapfStatus)

Properties Operational

Description This group contains the Q.922 SVC data link layer status.

Mib FriUniSig

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ATTRIBUTE FrUni Sig **currentState (currState)**

Access	Read only
Description	This attribute shows the current state of the SVC data link layer interface.
Mib	FriUniSig
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE FrUni Sig **lastStateChangeReason (lscr)**

Access	Read only
Description	This attribute shows the reason for the most recent state change. ***notStarted*** - this is the default state after SVC data link has just been created. ***abmeEntered*** - SVC data link has entered Asynchronous Balanced Mode after SABME or UA has been received. ***abmeReset*** - the data link has been reset. ***dmReceived*** - DM response received. ***dmSent*** - DM sent. ***discReceived*** - DISC response received. ***discSent*** - DISC sent. ***frmrReceived*** - FRMR received. ***n200RetranTimeOut*** - *retransmitLimit* has been exceeded. ***other*** - unspecified state change reasons. The most likely reason for this is the transition from state ***waitingAck*** to state ***informationTransfer***.
Mib	FriUniSig
Values	notStarted abmeEntered abmeReset dmReceived dmSent discReceived discSent frmrReceived n200RetranTimeOut other
Default	notStarted

ATTRIBUTE FrUni Sig **frmrReceive (frmrr)**

Access	Read only

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Description	This attribute shows the information field of the Frame Reject (FRMR) most recently received.
Mib	FriUniSig
Values	String (0..8, Hex)
Default	No default

ATTRIBUTE FrUni Sig currentQueueSize (queues)

Access	Read only
Description	This attribute shows the current number of frames in the SVC data link layer transmit queue.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

GROUP FrUni Sig LapfStatistics (LapfStats)

Properties	Operational
Description	This group contains the statistics for the SVC data link layer.
Mib	FriUniSig

ATTRIBUTE FrUni Sig stateChange

Access	Read only
Description	This attribute counts the number of times the SVC data link layer interface has changed state. While the data link layer is in ***informationTransfer*** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from ***informationTransfer*** to ***waitingAck*** and back. When this count exceeds the maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig remoteBusy

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE FrUni Sig receiveRejectFrame

Access	Read only
Description	This attribute counts the number of REJ frames received by the interface. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig ackTimeout

Access	Read only
Description	This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate a problem at the link or improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote sides. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig iFramesTransmitted

Access	Read only
Description	This attribute counts the number of SVC I-frames transmitted to the interface on DLCI 0. An I-frame may be counted more than once if there are retransmissions at the SVC data link layer. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig iFramesTxDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames that are bound for the link but have been discarded. Discard reasons may be one of the following: 1. the frame length is beyond the allowed limit. 2. the SVC data link layer is in ***disconnected*** state. 3. the transmit queue has been purged because the queue length has reached the reset threshold. 4. the transmit queue or the queue waiting for acknowledgment has been purged because the link cannot be re-established.

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When this count reaches maximum, it wraps to zero.

Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig iFramesReceived

Access	Read only
Description	This attribute counts the number of SVC I-frames received from the interface. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig iFramesRcvdDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames received but have been discarded. The discard reasons are: 1. incorrect frame size 2. frame is out of sequence 3. frame received while the network side of the SVC data link layer is not in the ***informationTransfer*** or ***waitingAck*** state. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

GROUP FrUni Sig FrsSvcAcc (Svcacc)

Properties	Provisioned
Description	This group contains the provisionable attribute which controls accounting for this interface.
Mib	FriUniSig

ATTRIBUTE FrUni Sig defaultAccounting (defAcc)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether accounting data collection and record generation is turned on for switched connections at this interface. For

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accounting data collection and record generation to occur, this attribute must be ***on*** and at least one of the *accountCollection* reasons in the *Dna* component must be present.

Mib	FriUniSig
Values	off on
Default	on

GROUP FrUni Sig LastSvcClearCodes (Codes)

Properties	Operational
Description	This group contains the remote data network address, the last SVC clear cause and the last SVC diagnostic code coming from the subnet or the local VC.
Mib	FriUniSig

ATTRIBUTE FrUni Sig lastClearRemoteDataNetworkAddress

Access	Read only
Description	This attribute indicates the Data Network Address (DNA) of the remote (the other end of the SVC connection) of the call which cleared last and whose clear and diagnostic codes were recorded.
Mib	FriUniSig
Values	BCD (0..15)
Default	No default

ATTRIBUTE FrUni Sig lastClearCause

Access	Read only
Description	This attribute indicates the last SVC clear cause signaled at the end of the connection or failure to connect. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The same set of possible values provides the clear cause field in the accounting record.
Mib	FriUniSig
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrUni Sig lastDiagnosticCode

Access	Read only
Description	This attribute indicates the last SVC diagnostic code signaled at the end of the connection or failure to connect. It is updated if the clear request comes from the subnet or the call is rejected locally by the VC. The same

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	set of possible values provides the diagnostic code field in the accounting record.
Mib	FriUniSig
Values	Decimal (0..255)
Default	0

COMPONENT FrUni VirtualFramer (VFramer)

Groups	GROUP FrUni VFramer Provisioned (Prov) GROUP FrUni VFramer OsiState (State) GROUP FrUni VFramer Statistics (Stats)
Scope	Application
Description	*FrUni/n VirtualFramer* *FrDte/n VirtualFramer* The *VirtualFramer* component binds two services together to provide data transfer between them. It is mutually exclusive from *Framer* component.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni VFramer Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *VirtualFramer* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni VFramer otherVirtualFramer (ovf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the other *VirtualFramer* to which the service is linked, for example, *FrUni/n VirtualFramer*, *FrDte/n VirtualFramer.*
Mib	FrameRelayUni
Values	Link (Service, otherVirtualFramer)
Default	No default

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ATTRIBUTE FrUni VFramer **logicalProcessor (lp)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the service component will reside.
Mib	FrameRelayUni
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP FrUni VFramer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayUni

ATTRIBUTE FrUni VFramer **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE FrUni VFramer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayUni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrUni VFramer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayUni
Values	idle active (activ) busy
Default	idle

GROUP FrUni VFramer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *VirtualFramer* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni VFramer frmToOtherVFramer

Access	Read only
Description	This attribute counts the frames transmitted to the *otherVirtualFramer*.

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Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni VFramer frmFromOtherVFramer

Access	Read only
Description	This attribute counts the frames received from the *otherVirtualFramer*.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni VFramer octetFromOtherVFramer

Access	Read only
Description	This attribute counts the octets received from the *otherVirtualFramer*.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni VFramer discFrmFromOtherVFramer (discFrmFromOvf)

Access	Read only
Description	This attribute counts the discarded frames from the *otherVirtualFramer*. Incrementing of this counter indicates that some incoming traffic cannot be handled by the FP.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

COMPONENT FrUni LoadTestSystem (Lts)

Groups	GROUP FrUni Lts Setup (Setup) GROUP FrUni Lts OperationalState (State) GROUP FrUni Lts Results (Results)
Scope	Application
Description	*FrUni/n LoadTestSystem* *FrNni/n LoadTestSystem* This component defines an instance of the Frame Relay Load Test System

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(UNI) service. The component instance value n is a unique positive integer within a module.

Mib	FrameRelayUni
Subcomponents	COMPONENT FrUni Lts Pattern (Pat)
Common Verbs	Help List Display Add DELete

VERB START FrUni Lts

Impact	Service
Description	*START FrUni/n Lts* This verb starts the load generator. The load generator can be stopped by issuing the stop verb.

VERB STOP FrUni Lts

Impact	Service
Description	*STOP FrUni/n Lts* This verb stops the traffic generator.

VERB RESET FrUni Lts

Impact	Service
Description	*RESET FrUni/n Lts* This verb clears the TestStatistics

GROUP FrUni Lts **Setup (Setup)**

Properties	Operational
Description	This attribute group contains the parameters used to configure the behavior of the Frame Relay Load Test System.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts **duration (dur)**

Access	Read and write
Description	This attribute specifies the duration of the test in milliseconds. The test will run until the duration expires or the STOP command is issued. A value of 0 is used to indicate infinity.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	msec

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Default	0

ATTRIBUTE FrUni Lts algorithm (alg)

Access	Read and write
Description	This attribute specifies which algorithm is used to generate the frames. **ContinuousBurst** This mode of traffic generation creates traffic at the maximum rate possible until all of the frames have been sent. The generator then waits until the end of the timeInterval to begin again. **IntervalBurst** This algorithm attempts to generate 10 ms bursts of burstSize frames. It will generate as many of the burstSize frames as it can per sub-interval. **DelayedBurst** This algorithm generates bursts of burstSize frames separated by 10 ms delays. **FixedBurst** This aglorithm is similar to IntervalBurst, except a fixed burst size of 12 frames is used. **delayMeasurement** This algorithm is used to measure delay. The specified number of frames in the indicated pattern are generated, one at a time, with a maximum wait of maxDelay before sending the next frame. This algorithm is not implemented yet.
Mib	FrameRelayUni
Values	continousBurst (cont) intervalBurst (int) delayBurst (delay) fixedBurst (fixed)
Default	continousBurst

ATTRIBUTE FrUni Lts burstSize (fpb)

Access	Read and write
Description	This attribute specifies the number of frames per burst under the delayedBurst and intervalBurst algorithms.
Mib	FrameRelayUni
Values	Decimal (1..250)
Default	50

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ATTRIBUTE FrUni Lts timeInterval (tint)

Access	Read and write
Description	This attribute specifies the time interval to the specified number of seconds. Granuality is in centiseconds. Maximum is 1 minute.
Mib	FrameRelayUni
Values	Decimal (1..60000)
Units	csec
Default	100

GROUP FrUni Lts OperationalState (State)

Properties	Operational
Description	This group contains the operation statistics of the load generator.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts generatorState (gstate)

Access	Read only
Description	This attribute indicates whether the Lts is generating traffic.
Mib	FrameRelayUni
Values	stopped running
Default	stopped

ATTRIBUTE FrUni Lts cycleIncomplete (cycle)

Access	Read only
Description	This attribute indicates whether the time required to generate all of the enabled patterns is more than timeInterval by a true value. Otherwise, this flag is set to false. Default is True.
Mib	FrameRelayUni
Values	false true
Default	true

ATTRIBUTE FrUni Lts lastActiveInterval (actInt)

Access	Read only
Description	This attribute indicates the actual time it took to generate all of the enabled patterns in the last cycle. If cycleIncomplete is true, this value should be zero.

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Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	microsec
Default	No default

ATTRIBUTE FrUni Lts load

Access	Read only
Description	This attribute indicates the load being generated. This value represents that calculated using the set number of ticks. The actual burstTimeInterval may differ. One entire cycle of the patterns is completed in activeInterval and thus most of the load may be concentrated early in the set interval.
Mib	FrameRelayUni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	No default

ATTRIBUTE FrUni Lts elapsedGenerationTime (etime)

Access	Read only
Description	This attribute indicates how many milliseconds have elapsed since the start of this test.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP FrUni Lts Results (Results)

Properties	Operational
Description	This group contains the frame counting attributes for the LTS component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts framesTx

Access	Read only
Description	This attribute specifies the number of frames send to the network since the last time these statistics were cleared. This is similar to the framesToIf attribute of the FRAMER component.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE FrUni Lts bytesTx

Access	Read only
Description	This attribute indicates the number of bytes sent.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bytes
Default	0

ATTRIBUTE FrUni Lts bitRateTx

Access	Read only
Description	This attribute indicates the bit rate being sent to the link. It should only differ from the load if the burstTimeInterval would be >= the timeInterval or burstSize frames cannot be generated in 10ms (intervalBurst algorithm).
Mib	FrameRelayUni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	0.000

ATTRIBUTE FrUni Lts frameRateTx

Access	Read only
Description	This attribute indicates the frame rate being sent to the link. It is calculated using the number of frames sent to the link in one cycle of the patterns.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	frame/s
Default	0

COMPONENT FrUni Lts Pattern (Pat)

Instance	Decimal (0..29)
Groups	GROUP FrUni Lts Pat Defaults (Defaults) GROUP FrUni Lts Pat Setup (Setup) GROUP FrUni Lts Pat OperationalData (OpData) GROUP FrUni Lts Pat OperationalState (OpState)
Scope	Application

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Description	FrUni/n Lts Pattern FrNni/n Lts Pattern Each instance of this component specifies a pattern to be generated as part of each cycle. One cycle represents one pass through each pattern.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

VERB TRIGGER FrUni Lts Pat

Impact	Service
Description	TRIGGER FrUni/x Lts Pattern/y This verb triggers the single execution of the specified pattern. In order for this command to be executed, the Lts component cannot be generating traffic.

GROUP FrUni Lts Pat **Defaults (Defaults)**

Properties	Provisioned
Description	This attribute group contains the specifications of the pattern.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts Pat **defaultDlci (dDlci)**

Access	Read and write
Description	This attribute specifies for which DLCI (on the local end) the frames are destined.
Mib	FrameRelayUni
Values	Decimal (16..1007)
Default	16

ATTRIBUTE FrUni Lts Pat **defaultNumFrames (dNum)**

Access	Read and write
Description	This attribute specifies the number of frames in this pattern. This is the number of frames of this type that are generated in one time interval.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	100

ATTRIBUTE FrUni Lts Pat **defaultDataSize (dSize)**

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Access	Read and write
Description	This attribute specifies the payload size of each frame in bytes. This is in excess to the header.
Mib	FrameRelayUni
Values	Decimal (0..8200)
Units	octets
Default	512

ATTRIBUTE FrUni Lts Pat defaultHeaderBits (dBits)

Access	Read and write
Description	This attribute specifies whether specific bits are on/off in the header of each frame.
Mib	FrameRelayUni
Set of	becn fecn cr de
Default	No default

ATTRIBUTE FrUni Lts Pat defaultHeaderLength (dLen)

Access	Read and write
Description	This attribute specifies the size of the frame relay header in bytes. Only 2-byte headers are supported at this time.
Mib	FrameRelayUni
Values	Decimal (0; 2..4)
Units	octets
Default	2

ATTRIBUTE FrUni Lts Pat defaultEABits (dEABits)

Access	Read and write
Description	This attribute specifies how the address field extension bits are set in the frame header. Consider the value to be a four bit binary number. For example, 4 = 0100. Only the first *headerLength* bits are used. For instance, suppose headerLength is 3, then the appropriate EABits is 2, or 0010. This attribute can be used to create a header of length greater than two bytes or to specify incorrect EABits in the header.
Mib	FrameRelayUni
Values	Hex (H.0..H.f)

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Default	H.4

ATTRIBUTE FrUni Lts Pat defaultPayloadPattern (dPattern)

Access	Read and write
Description	This attribute specifies the payload of each frame. The value specified is in hexadecimal, where every two digits represent a byte. A maximum of 24 digits (12 bytes) may be set, after which the pattern will repeat in the payload (depending on the *repeatPattern* attribute). NOTE: If an RFC 1490 header is specified, via the 1490Header attribute, the specified pattern will begin following the header (that is, at the 9th byte in the payload).
Mib	FrameRelayUni
Values	String (1..12, Hex)
Default	55

ATTRIBUTE FrUni Lts Pat defaultRfc1490Header (d1490)

Access	Read and write
Description	This attribute specifies the appropriate RFC 1490 encapsulated header of the frame. A value of 0 indicates no 1490 header. NOTE: This header resides in the first 8 bytes of the payload. If the specified value is non-zero, then the payload pattern provisioned will begin at the 9th byte.
Mib	FrameRelayUni
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 none
Default	none

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ATTRIBUTE FrUni Lts Pat defaultUseBadLrc (dBadLrc)

Access	Read and write
Description	This attribute specifies whether the frames from this pattern are to have a bad LRC prior to being sent to the framer. The LRC is checked while the frame is being put onto the link and the failure should cause an abort frame to be sent.
Mib	FrameRelayUni
Values	no yes
Default	no

GROUP FrUni Lts Pat Setup (Setup)

Properties	Operational
Description	This attribute group contains the specifications of the pattern.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts Pat dlci

Access	Read and write
Description	This attribute specifies for which DLCI (on the local end) the frames are destined.
Mib	FrameRelayUni
Values	Decimal (16..1007)
Default	16

ATTRIBUTE FrUni Lts Pat numFrames (num)

Access	Read and write
Description	This attribute specifies the number of frames in this pattern. This is the number of frames of this type that are generated in one time interval.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	100

ATTRIBUTE FrUni Lts Pat dataSize (size)

Access	Read and write
Description	This attribute specifies the payload size of each frame in bytes. This is in excess to the header.
Mib	FrameRelayUni

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Values	Decimal (0..8200)
Units	octets
Default	512

ATTRIBUTE FrUni Lts Pat headerBits (bits)

Access	Read and write
Description	This attribute specifies whether the following bits are on/off in the header of each frame.
Mib	FrameRelayUni
Set of	becn fecn cr de
Default	No default

ATTRIBUTE FrUni Lts Pat headerLength (len)

Access	Read and write
Description	This attribute specifies the size of the frame relay header in bytes. Only 2-byte headers are supported at this time. Valid values are 0, 2, 3, 4. 0 indicates to use no header. That is, the frame starts with either the payload or an RFC 1490 header.
Mib	FrameRelayUni
Values	Decimal (0; 2..4)
Units	octets
Default	2

ATTRIBUTE FrUni Lts Pat eaBits

Access	Read and write
Description	This attribute specifies how the address field extension bits are set in the frame header. Consider the value to be a four bit binary number. For example, 4 = 0100. Only the first headerLength bits are used. For instance, suppose headerLength is 3, then the appropriate eaBits is 2, or 0010. This attribute can be used to create a header of length greater than two bytes or to specify incorrect eaBits in the header.
Mib	FrameRelayUni
Values	Hex (H.0..H.f)
Default	H.4

ATTRIBUTE FrUni Lts Pat payloadPattern (pattern)

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Access	Read and write
Description	This attribute specifies the payload of each frame. The value specified is in hexadecimal, where every two digits represent a byte. A maximum of 24 digits (12 bytes) may be set, after which the pattern repeats in the payload (depending on *repeatPattern* attribute). NOTE: If an RFC 1490 header is specified, via the *1490Header* attribute, the specified pattern begina following the header (that is, at the 9th byte in the payload).
Mib	FrameRelayUni
Values	String (1..12, Hex)
Default	55

ATTRIBUTE FrUni Lts Pat **rfc1490Header (rfc)**

Access	Read and write
Description	This attribute specifies the appropriate RFC 1490 encapsulated header of the frame. A value of 0 indicates no 1490 header. NOTE: This header resides in the first 8 bytes of the payload. If the specified value is non-zero, then the payload pattern provisioned will begin at the 9th byte.
Mib	FrameRelayUni
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 none
Default	none

ATTRIBUTE FrUni Lts Pat **useBadLrc**

Access	Read and write

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Description	This attribute specifies whether the frames from this pattern are to have a bad LRC prior to being sent to the framer. The LRC is checked while the frame is being put onto the link and the failure should cause an abort frame to be sent.
Mib	FrameRelayUni
Values	no yes
Default	no

GROUP FrUni Lts Pat OperationalData (OpData)

Properties	Operational
Description	This group contains the operational attributes which allow changing the pattern outside of provisioning mode.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts Pat framePattern

Access	Read only
Description	This attribute displays the first 20 to 24 bytes of the frame payload, depending on the frame relay header size selected. This attribute represents the frame if it were at least 20 to 24 bytes in size. That is, the actual frame may be smaller.
Mib	FrameRelayUni
Values	String (20..24, Hex)
Default	No default

ATTRIBUTE FrUni Lts Pat hdlcBitsInserted (hdlc)

Access	Read only
Description	This attribute displays how many times a zero bit will be inserted after 5 consecutive 1 bits when a frame from this pattern is sent out.
Mib	FrameRelayUni
Values	Decimal (0..65535)
Default	No default

GROUP FrUni Lts Pat OperationalState (OpState)

Properties	Operational
Description	This group contains the attributes containing the operational statistics of the pattern.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts Pat load

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Access	Read only
Description	This attribute indicates the load due to this particular pattern. The loads associated with all of the provisioned patterns are summed to arrive at the FrLts load.
Mib	FrameRelayUni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	No default

ATTRIBUTE FrUni Lts Pat status

Access	Read and write
Description	This attributes specifies the administrative state of the pattern. A disabled pattern is not generated, although it can still be triggered.
Mib	FrameRelayUni
Values	disabled enabled
Default	enabled

COMPONENT FrUni DirectConnection (Dconn)

Groups	GROUP FrUni Dconn DirectFrDteConnData (DirData)
Scope	Application
Description	'FrUni/n DirectConnection' A *DirectConnection* can not be provisioned under a *FrUni* if any of its *Dlci* subcompoentents has an *IpConnection* or *BnxInterworkingFunction* component provisioned under it.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Dconn DirectFrDteConnData (DirData)

Properties	Provisioned
Description	This group contains the attribute for creating a Direct Connection for IP over Frame Relay networking between FrUni and FrDte.
Mib	FrameRelayUni

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ATTRIBUTE FrUni Dconn directFrDteConnection (direct)

Access	Read and write
Criticality	Process
Description	This attribute specifies the FrUni to which the FrDte will be connected to via the Direct Connect feature. This attribute must be linked to a *FrDte DirectConnection* component or a semantic check error is generated.
Mib	FrameRelayUni
Values	Link (Service, directFrUniConnection)
Default	No default

COMPONENT FrUni ServiceTrace (SrvTrace)

Groups	GROUP FrUni SrvTrace Operational
Scope	Application
Description	*FrUni/n ServiceTrace* *FrNni/n ServiceTrace* The *ServiceTrace* component of the Frame Relay service determines if the trace capability is allowed on this interface. If it is not provisioned, then a service trace session cannot be started on this service. Frame Relay service trace is restricted to use FrameRelay, X25 or ATM service trace receiver. If the *SrvTrace rcvr* operational attribute is set to a string name of FrAtm service trace receiver, *Start* command will return a “Receiver Not Supported” response.
Mib	FrameRelayUniTrace
Dyn. Subcomp.	COMPONENT FrUni SrvTrace Filter
Common Verbs	Help List Display Add DELete

VERB Start FrUni SrvTrace

Impact	Service
Description	*Start FrUni/n ServiceTrace* *Start FrNni/n ServiceTrace* This command starts a Frame Relay service trace session.

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VERB Stop FrUni SrvTrace

Impact	Service
Description	*Stop FrUni/n ServiceTrace* *Stop FrNni/n ServiceTrace* This command stops a Frame Relay service trace session.

GROUP FrUni SrvTrace **Operational**

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	FrameRelayUniTrace

ATTRIBUTE FrUni SrvTrace **receiverName (rcvr)**

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	FrameRelayUniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE FrUni SrvTrace **duration**

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	FrameRelayUniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE FrUni SrvTrace **queueLimit**

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.

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Mib	FrameRelayUniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE FrUni SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	FrameRelayUniTrace
Values	The name of the component
Default	No default

COMPONENT FrUni SrvTrace Filter

Groups	GROUP FrUni SrvTrace Filter Operational
Scope	Application
Description	*FrUni/n SrvTrace Filter* *FrNni/n SrvTrace Filter* The *Filter* component defines the type of traced data that is sent to the receiver. The *Filter* component provides default values for all its attributes which are sufficient to start a trace session. If required, these attributes may be changed before or during a trace session.
Mib	FrameRelayUniTrace
Common Verbs	Help List Display

GROUP FrUni SrvTrace Filter Operational

Properties	Operational
Description	This group provides the operational attributes for the Frame Relay *SrvTrace Filter* component.
Mib	FrameRelayUniTrace

ATTRIBUTE FrUni SrvTrace Filter traceType (type)

Access	Read and write
Description	This attribute specifies the level of filtering required for this trace session. A value of ***lmi*** indicates that LMI frames are traced. A value of ***dlci*** indicates that frames from the *Dlci* specified by the *tracedDlci* attribute are

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traced. A value of ***badFrames*** indicates that bad received frames (overruns, CRC errors, aborts) are traced. The default is to trace all frames. This attribute can be set while a trace is active and takes effect immediately.

Mib	FrameRelayUniTrace
Set of	lmi dlci badFrames
Default	(lmi, dlci, badFrames)

ATTRIBUTE FrUni SrvTrace Filter **tracedDlci (dlci)**

Access	Read and write
Description	This attribute specifies a particular DLCI to trace. A value of ***0*** specifies that all DLCIs are to be traced. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayUniTrace
Values	Decimal (0..1007)
Default	0

ATTRIBUTE FrUni SrvTrace Filter **direction (dir)**

Access	Read and write
Description	This attribute specifies the direction of the data to be traced as viewed by the service. The values can be ***egress*** and ***ingress***. An ***egress*** value indicates frames outbound from the service. An ***ingress*** value indicates frames inbound to the service. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayUniTrace
Set of	egress ingress
Default	(egress, ingress)

ATTRIBUTE FrUni SrvTrace Filter **tracedLength (len)**

Access	Read and write
Description	This attribute specifies the maximum number of octets to trace per frame starting from the octet following the frame flag. If the frame length is longer than the value specified by this attribute, then the traced frame is truncated. If set to ***disabled***, the traced frame is not truncated. This attribute can be set while a trace is active and takes effect immediately.

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If the Frame Relay *SrvTrace* is started with an ATM service trace receiver, the *tracedLength* attribute of ATM service trace receiver is ignored.

Mib	FrameRelayUniTrace
Values	Decimal (1..4000) disabled
Units	octets
Default	2000

COMPONENT FrUni Isdn

Groups	GROUP FrUni Isdn Provisioned (Prov) GROUP FrUni Isdn Operational (Oper)
Scope	Application
Description	*FrUni/n Isdn* This component defines the parameters associated with the ISDN B-Channel interface. Adding this component makes the *FrUni* behave as an ISDN access to the Frame Relay Network.
Mib	FrameRelayIsdn
Common Verbs	Help List Display Add DELete

GROUP FrUni Isdn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Isdn component.
Mib	FrameRelayIsdn

ATTRIBUTE FrUni Isdn t320

Access	Read and write
Criticality	Process
Description	This attribute specifies the waiting time for a silent B-Channel (no active VCs associated with the *FrUni*) to be disconnected and made available. Default is 60 seconds. 0 means t320 never times out.
Mib	FrameRelayIsdn
Values	Decimal (0..255)

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Units	seconds
Default	60

ATTRIBUTE FrUni Isdn addressSignalling (asig)

Access	Read and write
Criticality	Process
Description	This attribute defines whether the ISDN Calling Party Number is to be signaled to the remote DTE during an SVC call establishment. Otherwise, no changes to the current behavior of SVC call establishment (that is, the DNA is used in the calling party number information element).
Mib	FrameRelayIsdn
Values	IsdnDna normalBehavior
Default	normalBehavior

GROUP FrUni Isdn Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Isdn* component.
Mib	FrameRelayIsdn

ATTRIBUTE FrUni Isdn dataSigChan

Access	Read only
Description	This attribute indicates the instance number of the *dataSigChan* component controlling the allocation of this *FrUni Isdn* component.
Mib	FrameRelayIsdn
Values	Decimal (1..255)
Default	No default

ATTRIBUTE FrUni Isdn bChannelState (bState)

Access	Read only
Description	This attribute indicates the state of the B-Channel. If the value is ***idle*** it means that no VCs are connected and this B-Channel is available. If the value is ***busy*** it means this B-Channel has been allocated and is not available. If the value is ***disabled*** it means the application interface or the port is locked or disabled.
Mib	FrameRelayIsdn
Values	idle busy disabled

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Default	No default

ATTRIBUTE FrUni Isdn lastUsedCgpn (lucgpn)

Access	Read only
Description	This attribute indicates the calling party number currently using the B-Channel. When the B-Channel is free, the null string is displayed.
Mib	FrameRelayIsdn
Values	BCD (0..15)
Default	No default

ATTRIBUTE FrUni Isdn bChanIntState (bInt)

Access	Read only
Description	Debug information
Mib	FrameRelayIsdn
Values	isdnInit waitAccEnable waitLnsResponse waitFramerData enabling waitAccRegAck up down releasing
Default	No default

ATTRIBUTE FrUni Isdn activeVirtualCircuitsCount (vcCount)

Access	Read only
Description	Current number of virtual circuits (switched and permanent) in data transfer.
Mib	FrameRelayIsdn
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni ConnectionAdministrator (Ca)

Groups	GROUP FrUni Ca Provisioned (Prov) GROUP FrUni Ca IngressCac GROUP FrUni Ca EgressCac GROUP FrUni Ca Operational (Op)
Scope	Application

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Description	*FrNni/n ConnectionAdministrator* The *Ca* component allows the network operator to specify common subscription options for the parent interface. It defines the call admission control parameters in the ingress and egress direction for the parent interface.
Mib	FrameRelayUni
Opt. Subcomp.	COMPONENT FrUni Ca TransferPriorityMapping (Tpm)
Common Verbs	Help List Display

GROUP FrUni Ca Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes of the *Ca* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca overrideLinkRate (ovLinkRate)

Access	Read and write
Criticality	Process
Description	This attribute allows the link rate to be overridden for this interface. This allows the user to specify a value other than the actual physical link rate computed when a *Framer* component is provisioned. When a *VFramer* component is provisioned, this attribute overrides a link rate set to the maximum value supported by CAC . This attribute serves to provide the user control on the amount of bandwidth available for performing CAC.
Mib	FrameRelayUni
Values	Decimal (0..429496729)
Units	bit/s
Default	0

ATTRIBUTE FrUni Ca maximumBandwidthPerCall (maxBwCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum bandwidth that can be allocated per connection.
Mib	FrameRelayUni

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Values	Decimal (0..520000000)
Units	bit/s
Default	520000000

GROUP FrUni Ca IngressCac

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes for ingress call admission control.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca ingressApplyToCos (ingCos)

Access	Read and write
Criticality	Process
Description	This attribute specifies which Classes of Service (CoS) have ingress Call Admission Control (CAC) applied to them. Ingress CAC applies only to switched connections (SVCs and S-SPVCs). ***none*** - Ingress CAC is turned off for all classes of service. ***cirOnly*** - Ingress CAC is applied only to the CIR portion of a connection's bandwidth requirements for CIR>0 classes of service. ***cirAndEir*** - Ingress CAC is applied to both CIR and EIR portions of a connections bandwidth requirements for all classes of service.
Mib	FrameRelayUni
Values	none cirOnly cirAndEir
Default	cirOnly

ATTRIBUTE FrUni Ca ingressMaximumEirOnlyCalls

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections in the ingress direction with EIR only traffic that can be up at a given time.
Mib	FrameRelayUni
Values	Decimal (0..992)
Default	992

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ATTRIBUTE FrUni Ca ingressCirBandwidthPool (ingCirBP)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the ingress CIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayUni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

ATTRIBUTE FrUni Ca ingressEirBandwidthPool (ingEirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the ingress EIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayUni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrUni Ca EgressCac

Properties	Provisioned

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Description	This attribute group contains the common provisionable attributes for egress call admission control.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca egressApplyToCos (egCos)

Access	Read and write
Criticality	Process
Description	This attribute specifies which Classes of Service (CoS) have egress Call Admission Control (CAC) applied to them. Egress CAC applies only to switched connections (SVCs and S-SPVCs). ***none*** - Egress CAC is turned off for all classes of service. ***cirOnly*** - Egress CAC is applied only to the CIR portion of a connection's bandwidth requirements for CIR>0 classes of service. ***cirAndEir*** - Egress CAC is applied to both CIR and EIR portions of a connections bandwidth requirements for all classes of service.
Mib	FrameRelayUni
Values	none cirOnly cirAndEir
Default	none

ATTRIBUTE FrUni Ca egressMaximumEirOnlyCalls

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections in the egress direction with EIR only traffic that can be up at a given time.
Mib	FrameRelayUni
Values	Decimal (0..992)
Default	992

ATTRIBUTE FrUni Ca egressCirBandwidthPool (egCirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the egress CIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%.

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	The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayUni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

ATTRIBUTE FrUni Ca egressEirBandwidthPool (egEirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the egress EIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayUni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrUni Ca Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *Ca* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca linkRate (linkRate)

Access	Read only
Description	This attribute indicates the link rate used by both ingress and egress CAC to calculate the effective bandwidth pool sizes. If the provisionable attribute *overrideLinkRate* under this component is 0, then the link rate reported is the actual link rate of the port or channel. Otherwise, the link rate reported is the *overrideLinkRate* under this component.

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Mib	FrameRelayUni
Values	Decimal (0..520000000)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Ca ingressCirPoolAdmittedBandwidth (ingCirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted CIR bandwidth from each CIR bandwidth pool in the ingress direction. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayUni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca ingressCirPoolAvailableBandwidth (ingCirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available CIR bandwidth in each ingress CIR bandwidth pool.
Mib	FrameRelayUni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca egressCirPoolAdmittedBandwidth (egCirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted CIR bandwidth from each CIR bandwidth pool in the egress direction. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayUni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

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ATTRIBUTE FrUni Ca egressCirPoolAvailableBandwidth (egCirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available CIR bandwidth in each egress CIR bandwidth pool.
Mib	FrameRelayUni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca ingressEirPoolAdmittedBandwidth (ingEirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted EIR bandwidth from each EIR bandwidth pool in the ingress direction. Each value is the sum of the equivalent bit rates of the admitted connections. If the *ingressApplyToCos* attribute is set to ***none***, all ingress CIR bandwidth pools are set to 0.
Mib	FrameRelayUni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca ingressEirPoolAvailableBandwidth (ingEirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available EIR bandwidth in each ingress EIR bandwidth pool. If the *ingressApplyToCos* attribute is set to either ***none*** or ***cirOnly***, all ingress EIR bandwidth pools are set to 0.
Mib	FrameRelayUni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

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ATTRIBUTE FrUni Ca egressEirPoolAdmittedBandwidth (egEirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted EIR bandwidth from each EIR bandwidth pool in the egress direction. Each value is the sum of the equivalent bit rates of the admitted connections. If the *egressApplyToCos* attribute is set to ***none***, all egress CIR bandwidth pools are set to 0.
Mib	FrameRelayUni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca egressEirPoolAvailableBandwidth (egEirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available EIR bandwidth in each egress EIR bandwidth pool. If the *egressApplyToCos* attribute is set to either ***none*** or ***cirOnly***, all egress EIR bandwidth pools are set to 0.
Mib	FrameRelayUni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca numberRejectedEgressCirPermConn (numRegEgCirPerm)

Access	Read only
Description	This attribute indicates the number of permanent connections (that is, PVC and P-SPVC) that are rejected by egress CAC. A connection is rejected by egress CAC if it requests more egress CIR bandwidth than is available, and the *egressApplyToCos* attribute is set to either ***cirOnly*** or ***cirAndEir***.
Mib	FrameRelayUni
Values	Decimal (0..992)
Default	No default

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ATTRIBUTE FrUni Ca numberRejectedEgressEirPermConn (numRegEgEirPerm)

Access	Read only
Description	This attribute indicates the number of permanent connections (that is, PVC and P-SPVC) that are rejected by egress CAC. A connection is rejected by egress CAC if it requests more egress EIR bandwidth than is available, and the *egressApplyToCos* attribute is set to ***cirAndEir***.
Mib	FrameRelayUni
Values	Decimal (0..992)
Default	No default

COMPONENT FrUni Ca TransferPriorityMapping (Tpm)

Instance	Decimal (0..15)
Groups	GROUP FrUni Ca Tpm Provisioned (Prov)
Scope	Application
Description	*FrNni/n Ca TransferPriorityMapping/n* The *Tpm* component defines the corresponding traffic management subscription options on a *FrNni* interface corresponding to a particular transfer priority. This component is needed only if there is a requirement to override the *Mod Frs DprsNet Tpm* component defaults.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Ca Tpm Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *Tpm* component at this interface.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca Tpm assignedIngressBandwidthPool (asgInBwPool)

Access	Read and write
Criticality	Process
Description	This attribute specifies the ingress bandwidth pool which is used to support this transfer priority at this interface. When this attribute is set to ***sameAsModule***, the bandwidth pool that is used is obtained from the

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assignedIngressBandwidthPool attribute under the *Mod Frs DprsNet Tpm/n* component.

Mib	FrameRelayUni
Values	Decimal (0..15) sameAsModule
Default	sameAsModule

ATTRIBUTE FrUni Ca Tpm assignedEgressBandwidthPool (asgEgBwPool)

Access	Read and write
Criticality	Process
Description	This attribute specifies the egress bandwidth pool which is used to support this transfer priority at this interface. When this attribute is set to ***sameAsModule***, the bandwidth pool that is used is obtained from the *assignedEgressBandwidthPool* attribute under the *Mod Frs DprsNet Tpm/n* component.
Mib	FrameRelayUni
Values	Decimal (0..15) sameAsModule
Default	sameAsModule

COMPONENT FrUni BnxProtocol (Bp)

Groups	GROUP FrUni Bp Provisioned (Prov) GROUP FrUni Bp OsiState (State) GROUP FrUni Bp Operational (Op)
Scope	Application
Description	*FrUni/n BnxProtocol* *FrNni/n BnxProtocol* This component defines how the Frame Relay interface handles the BNX protocol.
Mib	FrUniPvcBnx
Common Verbs	Help List Display Add DELete

GROUP FrUni Bp Provisioned (Prov)

Properties	Provisioned
Description	This group defines the provisioning attributes to control the BNX protocol running on the Frame Relay interface.

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Mib	FrUniPvcBnx

ATTRIBUTE FrUni Bp linkToIpServer (linkToIp)

Access	Read and write
Description	This attribute specifies the link to a Frame Relay IP server.
Mib	FrUniPvcBnx
Values	Link (Service, linkToFrameRelayApps)
Default	No default

ATTRIBUTE FrUni Bp ipAddress (ipadd)

Access	Read and write
Description	This attribute specifies the IP address associated with the Frame Relay interface. This address must be in the same subnet as the *ProtocolPort* associated with the *FrIpServer*.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Bp crossNetEnabled (cne)

Access	Read and write
Description	This attribute specifies whether or not cross-net status messages are sent from the Frame Relay interface.
Mib	FrUniPvcBnx
Values	no yes
Default	yes

ATTRIBUTE FrUni Bp crossNetPollingInterval (cnpi)

Access	Read and write
Description	This attribute specifies the time interval between two cross-net status messages. This attribute is used for both sending and expecting status messages. The two ends of a PVC should be provisioned with values within a close range. Otherwise, it could result in PVC failure.
Mib	FrUniPvcBnx
Values	Decimal (30..86400)
Units	seconds
Default	120

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ATTRIBUTE FrUni Bp crossNetAsyncUpdate (cnau)

Access	Read and write
Description	This attribute specifies when a cross-net status message is sent following a BNX DLCI state change. If set to ***enabled***, the status message is sent as soon as the state change occurs. If set to ***disabled***, the state of the BNX DLCI will be sent in a cross-net status message only at the next polling interval. The polling interval is determined by *crossNetPollingInterval* attribute. The *crossNetAsyncUpdate* attribute is ignored if *crossNetEnabled* is set to ***no***.
Mib	FrUniPvcBnx
Values	disabled enabled
Default	enabled

ATTRIBUTE FrUni Bp crossNetListenEnabled (cnle)

Access	Read and write
Description	This attribute specifies whether or not to expect cross-net status messages. When set to ***yes***, this interface wait for a cross-net status message from the remote end to declare the PVCs up or down. When set to ***no***, the interface assumes the PVCs are always up.
Mib	FrUniPvcBnx
Values	no yes
Default	yes

ATTRIBUTE FrUni Bp crossNetErrorThreshold (cnet)

Access	Read and write
Description	This attribute specifies how many *crossNetPollingIntervals* without receiving a status message from the remote end are permitted to elapse before declaring the PVC down.
Mib	FrUniPvcBnx
Values	Decimal (1..30)
Default	3

ATTRIBUTE FrUni Bp trafficPriorityEnabled (tpe)

Access	Read and write
Description	This attribute specifies how to set the "Priority Level" field of the BNX header. When set to ***no***, both the *defaultTrafficPriority* attribute of the *BnxProtocol* component and the *trafficPriority* attribute of the *BnxIwf* component are ignored, and the "Priority Level" field is set to ***2***. When set

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to ***yes***, the "Priority Level" field is set to the value of the *trafficPriority* attribute of the *BnxIwf*, unless the *trafficPriority* attribute has a value of ***useDefault***. In this case the “Priority Level” field is set to the value of the *defaultTrafficPriority* attribute.

Mib	FrUniPvcBnx
Values	no yes
Default	no

ATTRIBUTE FrUni Bp defaultTrafficPriority (dtp)

Access	Read and write
Description	This attribute specifies the default traffic priority used to tag all the ingress traffic. This attribute is used when the *trafficPriority* attribute of the *BnxIwf* is set to ***useDefault***. A larger value denotes a lower priority. This attribute is ignored if the *trafficPriorityEnabled* is set to ***no***.
Mib	FrUniPvcBnx
Values	Decimal (1..3)
Default	2

ATTRIBUTE FrUni Bp trafficDiscardLevel (tdl)

Access	Read and write
Description	This attribute specifies the discard level used to tag ingress traffic.This value is ignored when the attribute *discardLevelEnabled* is set to ***no***. In this case, the "Discard Level" field of BNX header is set to ***2*** for DE=1 datagrams and to ***4*** for DE=0 datagrams. When *discardLevelEnabled* is set to ***yes***, the "Discard Level" field is tagged with the value of *trafficDiscardLevel* attribute. The "Discard Level" value is used as follows: Discard Level=***1***: drop datagrams when congestion level >= 1 Discard Level=***2***: drop datagrams when congestion level >= 2 Discard Level=***3***: drop datagrams when congestion level >= 3 Discard Level=***4***: drop datagrams when congestion level >= 4
Mib	FrUniPvcBnx
Values	Decimal (1..4)
Default	4

ATTRIBUTE FrUni Bp discardLevelEnabled (dle)

Access	Read and write
Description	This attribute specifies how to use discard level to tag ingress traffic. When set to ***yes***, the provisioned *trafficDiscardLevel* is used. Otherwise ingress DE=1 datagrams are tagged with discard level ***2*** and DE=0 datagrams are tagged with discard level ***4***.

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Mib	FrUniPvcBnx
Values	no yes
Default	no

GROUP FrUni Bp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Bp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrUniPvcBnx
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrUni Bp operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrUniPvcBnx
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrUni Bp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrUniPvcBnx
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrUni Bp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	FrUniPvcBnx
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrUni Bp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	FrUniPvcBnx
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrUni Bp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	FrUniPvcBnx
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrUni Bp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — FrUniPvcBnx

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE FrUni Bp standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	FrUniPvcBnx
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrUni Bp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrUniPvcBnx
Values	false true
Default	false

GROUP FrUni Bp Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *BnxProtocol* component.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Bp invalidBnxHeader (ibh)

Access	Read only
Description	This attribute counts the datagrams dropped because the BNX header was invalid. It could be caused by a invalid header version, invalid protocol type, or that discard level or priority level is out of range.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastInvalidBnxHeader (libh)

Access	Read only
Description	This attribute indicates the BNX header of the datagram which was last dropped by the *BnxProtocol* because one or more fields of the BNX

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	header are invalid. The invalid field could be any of the following: header version, protocol type, discard level out of range, priority level out of range.
Mib	FrUniPvcBnx
Values	Hex (H.0..H.ffffffff)
Default	No default

ATTRIBUTE FrUni Bp invalidIpProtocolId (ipid)

Access	Read only
Description	This attribute counts the datagrams dropped because the protocol ID in IP header was invalid.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp discardedIpFragment (dipf)

Access	Read only
Description	This attribute counts the total number of fragmented datagrams dropped by this interface. The case could be unknown Dlci, or unknown ID in IP header when misordering happened.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp sourceIpAddressLastDropped (ldsia)

Access	Read only
Description	This attribute indicates the source IP address of the datagram that was last dropped by the *BnxProtocol* because one or more fields of the IP header are invalid. The invalid field could be any of the following: header version, protocol ID, or Identification of a fragmented datagram.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Bp droppedUnknownDlci (dud)

Access	Read only
Description	This attribute counts the datagrams dropped because the DLCI was unknown.
Mib	FrUniPvcBnx

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Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastUnknownDlci (lud)

Access	Read only
Description	This attribute indicates the DLCI of datagram last dropped.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp droppedUnknownDlciXnet (dudx)

Access	Read only
Description	This attribute counts the received cross-net status messages that were dropped because the DLCI was unknown.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastUnknownDlciXnet (ludx)

Access	Read only
Description	This attribute indicates the DLCI of last received cross-net status message that was dropped because the DLCI was unknown.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp ipFragFromSubnet (fragfs)

Access	Read only
Description	This attribute counts the IP fragments received from subnet by this frame relay interface. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastInvalidIpFragId (lastid)

Access	Read only

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Description	This attribute indicates the Id in the IP header of the last fragment dropped by the frame relay interface.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastDlciWithIpFragment (lfdlci)

Access	Read only
Description	This attribute indicates the Dlci which last received IP fragment. This attribute is used for tracking fragmented IP traffic.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - FrUni

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Fs

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COMPONENT FileSystem (Fs)

Groups	GROUP Fs OsiState (State) GROUP Fs Operational (Oper)
Scope	Device
Description	*FILESYSTEM* The *Filesystem* component provides and controls access to files and directories stored on one or two disks, with a maximum of four partitions per disk. It is automatically created and always present. The Filesystem restricts files and directories names to 40 characters. It also restricts filenames including path to 128 characters. Directory names including the path cannot exceed 125 characters. There must be 112 or less directories and files at the root level on each partition. The maximum hierarchy depth is 10 directory levels. The only characters that can appear in a filename are the alpha-numeric characters, the . (dot), the _ (underscore), the - (hyphen), the : (colon), and the # (pound). The names are case sensitive. A pathname is a sequence of zero to ten directory names along the path and separated by the / (slash) character. A pathname that begins with a slash is an absolute pathname, otherwise it is a relative pathname. Access to the standby disk is not allowed. When there are two disks, the standby control processor disk shadowed partition(s) is normally synchronized with the disk shadowed partition(s) of the active control processor. After a crash or a disk failure the standby control processor disk becomes unsynchronized with respect to the disk on the active CP.
Mib	FileSystem
Dyn. Subcomp.	COMPONENT Fs Disk COMPONENT Fs FsPartition (Part)
Common Verbs	Help List Display LOCK : System_admin Unlock : System_admin

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VERB SYNChronize Fs

Impact: Configuration

Description:

synchronize Filesystem
The ***Synchronize*** command makes the standby disk shadowed partitions an exact copy of the active disk shadowed partitions. The operation also removes files and directories that exist only in the standby disk shadowed partitions. Manual synchronization will set the standby disk volume name equal to the active disk. The synchronization process will fail if the capacity of any of the shadowed partitions on the standby disk is smaller than the used space size in the active partition. At boot time, the filesystem selects the active control processor disk as the active disk and automatically attempts to synchronize the standby control processor disk shadowed partition(s). The automatic synchronization will fail if the volume names of the two disks are not identical. While the synchronization is running, disk testing and formatting are not allowed.

VERB ListFile (LS) Fs

Impact: Passive

Description:

listFile -path<file or directory> [-status] [-newer<file>] filesystem

The ***List*** verb displays information about files and directories in a directory. For every entry found in the directory, it displays its name, modification time, size, type and write permission.
If the ***status*** option is specified, then the command displays the information about the directory and not its contents. The ***newer*** option tells the list command to display only entries that have been modified more recently than the argument of the option.

Options:
-***path***: The pathname of the file or directory that you want to ***List***.
-***status***: This option causes the ***List*** command to display information about the path not its content.
-***newer***: This option causes the ***List*** command to display only files newer than the argument of this option.
Examples:
list -path(“/tmp”) filesystem
list -path(“/spooled”) -newer(“/spooled/alarm.01”) fs
list -path(“/spooled”) -status filesystem

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VERB Move (MV) Fs

Impact	Configuration
Description	move -s <existing-file> -d <new-filename> Filesystem move -s <existing-directory> -d <new-directory> Filesystem move -s<existing-file> -d<existing-directory> Filesystem. move -s<existing-directory> -d<existing-directory>Filesystem. The ***Move*** command moves or renames files and directories. If the destination does not exist, ***Move*** renames the source. If the destination is a directory, the command moves the source into the destination directory. The ***Move*** command does not move files or directories from one disk to another. The Move command does not overwrite existing files. ***Options***: -***source***: The pathname of the file or directory that ***Move*** is going to move. -***destination***: The pathname of the file or directory where ***Move*** is going to place the source file or directory. ***Examples:*** move -source(“/spooled/alarm.01”) -destination(“/tmp”) fs move -source(“/spooled”) -destination(“/tmp”) fs

VERB Copy (CP) Fs

Impact	Configuration
Description	copy -s <file1> -d<file> Filesystem copy -s<directory1> -d<directory2> -recursive Filesystem copy -s<filename> -d<directory> Filesystem The ***Copy*** command copies files or directories. The recursive option is required if the source is a directory. The new file is always unprotected. The Copy command does not overwrite existing files. ***Options***: -***source***: The pathname of the file or directory that ***Copy*** is going to copy. -***destination:*** The pathname of the file or directory that ***Copy*** places the resulting copied file or directory in. -***recursive:*** When the source is a directory, this option causes the ***Copy*** to copy the contents of that directory and any of its subdirectories into the destination directory. The subdirectories themselves are copied as well as the files they contain. ***Examples***: copy -source(“/tmp/log.01”) -destination(“/log.old”) fs copy -s(“/spooled”) -d(“/tmp”) -recursive fs

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VERB REMOVE Fs

Impact: Configuration

Description:

remove -path <filename> [-force] Filesystem
remove -path <directory> [-recursive, -force] Filesystem

The REMOVE command deletes files and directories. The filesystem component releases the space the file occupied on disk for future use. The recursive option is required to remove any directory including an empty one. If the file or directory is write protected, the command returns an error. The force option causes the command to remove write protected files.

Options:
-***path*** The pathname of the file or directory ***Remove*** is to delete.
-***recursive*** This option causes ***Remove*** to delete the contents of the specified directory, including all its subdirectories, and the directory itself.
-***force*** This option causes ***Remove*** to delete files regardless of whether they are “protected”.

Examples:
remove -path(“/tmp/SCN.001”) filesystem
remove -path(“/tmp”) -recursive filesystem
remove -path(“/tmp/SCN.004”) -force filesystem

VERB Protect Fs

Impact: Configuration

Description:

protect -path< file> Filesystem

The ***Protect*** command protects the specified file against accidental deletion and modification. The REMOVE command will fail unless the ***force*** option is specified. The Protect command has no effect on a directory.

Options:
-path: The pathname of the file to be protected against accidental deletion and/or modification.

Examples:
protect -path(“/spooled/alarm.001”) filesystem
protect -path(“standby:/spooled”) filesystem

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VERB Unprotect Fs

Impact: Configuration

Description:

unprotect -path< file> Filesystem

The ***Unprotect*** command removes the protection against accidental deletion or modification of the specified file. The Unprotect command has no effect on a directory.
Options:
-path: The pathname of the file to be unprotected against accidental deletion or modification.
Examples:
unprotect -path(“/spooled/alarm.001”) filesystem

VERB Touch Fs

Impact: Configuration

Description:

touch -path <filename> Filesystem
The ***Touch*** command updates the file’s modification time. ***Touch*** creates the file if it does not exist. If the pathname is a directory, the creation time of the directory is updated.
Options:
-path: The pathname of the file or directory ***Touch*** is to update.
-date: The date and time specified by this option are used to update the file's modification time. If this option is not specified then the file's modification time is updated with the current date and time.
Examples:
touch -path(“/tmp/backup.074”) filesystem
touch -path("/tmp/backup.074") -date(1998-03-30 19:26:10) filesystem

VERB MakeDirectory (MKDIR) Fs

Impact: Configuration

Description:

makedirectory -path <directory> Filesystem
The ***MakeDirectory*** command creates a directory. The command returns an error if the parent directory does not exist.
Options:
-path : The pathname of directory that ***MakeDirectory*** creates.
Examples:
mkdir -path(“/tmp/temporary”) fs

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VERB Chdir (CD) Fs

Impact	Passive
Description	chdir -path <directory> Filesystem The ***Chdir*** command makes the directory specified as argument of the ***path*** option the current working directory. If the directory does not exist, the command returns an error. ***Options***: -path: The pathname of the directory that will become the working directory. Examples: cd -path("/tmp/temporary") filesystem

VERB WorkingDir (PWD) Fs

Impact	Passive
Description	WorkingDir filesystem The ***WorkingDir*** command displays the current working directory associated with the session. The initial working directory is a provisionable attribute of the *Userid* component which is a subcomponent of the *AccessControl* component. The ***Chdir*** command changes the current working directory to the specified directory. ***Examples***: pwd filesystem

GROUP Fs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FileSystem

ATTRIBUTE Fs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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	was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FileSystem
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Fs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FileSystem
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Fs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FileSystem
Values	idle active (activ) busy

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Default	idle

GROUP Fs Operational (Oper)

Properties	Operational
Description	This group contains the filesystem operational data.
Mib	FileSystem

ATTRIBUTE Fs volumeName

Access	Read only
Description	This attribute describes the volume name of the filesystem. This is the volume name of the disk's shadowed partition(s) on the active CP.
Mib	FileSystem
Values	String (1..11, ASCII)
Default	No default

ATTRIBUTE Fs activeDisk

Access	Read only
Description	The activeDisk attribute value is the Disk component instance value of the active disk. This is also the card number of the active control processor.
Mib	FileSystem
Values	The name of the component
Default	No default

ATTRIBUTE Fs syncStatus

Access	Read only
Description	The synchronization status value indicates whether the file system is synchronized or not.
Mib	FileSystem
Values	synchronized unSynchronized synchronizing
Default	No default

ATTRIBUTE Fs syncProgress

Access	Read only

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Description	The synchronization progress value indicates the percentage of the standby disk already synchronized with the active disk. This value is equal to 100 if the two disks are synchronized or 0 if they are out of synchronization.
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Fs capacity

Access	Read only
Description	This attribute indicates the total size of the filesystem (in bytes). This value is equal to the smallest disk size in a synchronized filesystem; otherwise it is the capacity of the active disk. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *FileSystem Partition/instance* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Fs freeSpace

Access	Read only
Description	This attribute indicates the free disk space (in bytes) currently available in the filesystem. It is equal to the smallest free disk space size of the active and standby disks in a synchronized filesystem.When the filesystem is unsynchronized it is the free disk space of the active disk. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *FileSystem Partition/instance* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Fs usage

Access	Read only
Description	This attribute indicates the percentage of the free space available on the filesystem. This attribute is not displayed on a disk with multiple partitions.

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The corresponding information is available under the *FileSystem Partition/ instance* subcomponent.

Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Fs Disk

Instance	Decimal (0..15)
Groups	GROUP Fs Disk OsiState (State) GROUP Fs Disk Operational (Oper)
Scope	Device
Description	*Fs Disk/n* The *Disk* component is an operational subcomponent of the *Filesystem* component. When the system is in dual-mode configuration, there will be two instances of the *Disk* component. The 0 instance represents the disk on card 0 and the instance 15 represents the disk on card 15.
Mib	FileSystem
Dyn. Subcomp.	COMPONENT Fs Disk Test COMPONENT Fs Disk Partition (Part)
Common Verbs	Help List Display LOCK Unlock

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VERB FORMAT Fs Disk

Impact	Configuration
Description	format -v<volumeName> filesystem disk/<instance> This command formats the disk and prepares it to be a part of the filesystem. The disk component must be locked, before the format can start. All disks are formatted before delivery, but this command may be required if disk corruption occurs. A format destroys all the data in the disk. While formatting the disk , synchronizing and testing the disks are not allowed. ***Options***: -volumeName: The argument of this option is the volume name of the disk. -backward: format the disk to 256 MBytes format for backward compatibility. Older releases do not support disks larger than 256 MBytes. ***Examples***: format -v(myDisk) filesystem disk/15 format -backward filesystem disk/15

GROUP Fs Disk **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FileSystem

ATTRIBUTE Fs Disk **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	FileSystem
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Fs Disk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FileSystem
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Fs Disk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FileSystem
Values	idle active (activ) busy
Default	idle

GROUP Fs Disk Operational (Oper)

Properties	Operational

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Description	This group contains the disk component operational data.
Mib	FileSystem

ATTRIBUTE Fs Disk volumeName

Access	Read and write
Description	This attribute describes the volume name of the disk. The volume names of the disks must be identical to be synchronized.
Mib	FileSystem
Values	String (1..11, ASCII)
Default	No default

ATTRIBUTE Fs Disk capacity

Access	Read only
Description	This attribute indicates the total formatted disk size (in bytes) on disk. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *FileSystem Disk/instance Partition/instance* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Fs Disk freeSpace

Access	Read only
Description	This attribute indicates the available free disk space (in bytes) of the disk. Free space is reduced by bad blocks (if any). If there are different numbers of bad blocks on the disks in a dual-disk system, the reported free space will differ on the two disks. Moreover, due to the DOS file system internal representation of directories and files, adding and deleting files may fragment the disks differently resulting in some disk space wasted. A small discrepancy (less than 1% of the disk size) in the disks' free space is considered as normal. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *FileSystem Disk/instance Partition/instance* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)

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Units	bytes
Default	No default

ATTRIBUTE Fs Disk badBlocksPercentage

Access	Read only
Description	This attribute records the percentage of the disk space lost because of defects. If this percentage is high, it is recommended to change the disk. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under *FileSystem Disk/instance Partition/instance* subcomponent
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Fs Disk unformattedCapacity

Access	Read only
Description	This attribute indicates the physical disk size (in bytes). The physical disk size may be different from the formatted disk size if there are bad blocks or the disk has been formatted to a smaller disk size for backward compatibility with older releases. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *FileSystem Disk/instance Partition/instance* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Fs Disk hardDriveSize

Access	Read only
Description	This attribute indicates the total size of the current hard drive on the CP3 card.
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

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COMPONENT Fs Disk Test

Groups	GROUP Fs Disk Test OsiState (State) GROUP Fs Disk Test Setup (Setup) GROUP Fs Disk Test Results (Results)
Scope	Device
Description	*Test* The Test component embodies logical and physical filesystem tests. It is an operational subcomponent of the Disk component.
Mib	FileSystem
Common Verbs	Help List Display

VERB Start Fs Disk Test

Impact	Configuration
Description	This command invokes a test on the *Disk* component (This includes all existing partition(s) on the disk). The *Disk* component must be locked before the test can start. Examples: start filesystem disk/15 test

VERB Stop Fs Disk Test

Impact	Configuration
Description	This command stops a test running on the *Disk* component (This includes all existing partition(s) on the disk). The test stops only after completing the current pass. ***Example***: stop filesystem disk/15 test

GROUP Fs Disk Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FileSystem

ATTRIBUTE Fs Disk Test adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FileSystem
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Fs Disk Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FileSystem
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Fs Disk Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	FileSystem
Values	idle active (activ) busy
Default	idle

GROUP Fs Disk Test Setup (Setup)

Properties	Operational
Description	This group contains the Test component operational data. The testCount, duration and type can be set to control the duration and the test type which will be run.
Mib	FileSystem

ATTRIBUTE Fs Disk Test testCount

Access	Read and write
Description	This attribute indicates the number of times that the test will run. Note that the test will not run that many times if “duration” is not long enough to allow the test to complete. The test will execute at least one and then stop at the count where duration has just exceeded.
Mib	FileSystem
Values	Decimal (0..4294967295)
Default	1

ATTRIBUTE Fs Disk Test duration

Access	Read and write
Description	This attribute is the maximum duration (in minutes) that the test will run. The test can finish in less time if the number of tests, as recorded by testCount, is reached before this time. A test may take longer than the specified duration since a test cycle (or pass) is not interruptible.
Mib	FileSystem
Values	Decimal (0..35791394)
Units	minutes
Default	60

ATTRIBUTE Fs Disk Test type

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Access	Read and write
Description	This attribute is the type of the test to be run. The diskRead test reads every sector on the disk once and reports bad sectors. The filesystemCheck does a sanity check and attempts to repair corruption. The flakyBitDetection test reads every sector on the disk twice and compares the two read results. The surfaceAnalysis test writes a magnetically hard to record pattern to the disk and reads back the pattern to determine the condition of the magnetic surface of the disk. The surface analysis test destroys all the data and disk should be formatted afterward.
Mib	FileSystem
Values	filesystemCheck diskRead flakyBitDetection surfaceAnalysis
Default	filesystemCheck

GROUP Fs Disk Test Results (Results)

Properties	Operational
Description	This group contains the results of the test.
Mib	FileSystem

ATTRIBUTE Fs Disk Test causeOfTermination

Access	Read only
Description	This attribute records the reason why the test was terminated. The reasons are: ***testCountReached:*** the test ran the number of times specified in the attribute testCount and ended normally. ***error***: the test was terminated by an error that is recorded in the natureOfError attribute. ***neverStarted***: the test was never started. ***stoppedByOperator***: the test was terminated by the Stop command. ***testTimeExpired***: the duration of the test expired. ***testRunning***: the test is still running. ***unknown***: the test terminated for unknown reasons. ***internalError***: An internal error terminated the test.
Mib	FileSystem
Values	testCountReached testTimeExpired stoppedByOperator neverStarted testRunning

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	error internalError unknown
Default	No default

ATTRIBUTE Fs Disk Test natureOfError

Access	Read only
Description	This attribute describes the error found by a test. A logical error can be fixed by a filesystemCheck test followed eventually by a synchronization. A media error indicates that a fault in the disk hardware is suspected. A failedToComplete error indicates that the test was terminated.
Mib	FileSystem
Values	logical media noErrorDetected failedToComplete
Default	No default

ATTRIBUTE Fs Disk Test severity

Access	Read only
Description	This attribute describes the severity of the error found by a test. There are three types of severity**:** no data was lost, data was lost and hardware problem**.** If the test found no error(s), this will be reported as noError. If the test found error(s) but no data was lost, then noDataLost is reported.
Mib	FileSystem
Values	noDataLost dataLost hardwareProblem noError
Default	No default

ATTRIBUTE Fs Disk Test elapsedTime

Access	Read only
Description	This attribute records the elapsed time (in minutes) since the test was started.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

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ATTRIBUTE Fs Disk Test testExecutionCount

Access	Read only
Description	The number of times the test had actually run.
Mib	FileSystem
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Fs Disk Partition (Part)

Instance	Decimal (0..3)
Groups	GROUP Fs Disk Part OsiState (State) GROUP Fs Disk Part Operational (Oper)
Scope	Device
Description	*Fs Disk/m Part/n* A *Partition* component is an operational subcomponent of *Disk*. Each instance of this component represents a partition. The instance is the partition number. The component is only visible on a multiple partitioned disk.
Mib	FileSystem
Common Verbs	Help List Display

GROUP Fs Disk Part OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FileSystem

ATTRIBUTE Fs Disk Part adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — FileSystem

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Fs Disk Part operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — FileSystem

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Fs Disk Part usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — FileSystem

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Values	idle active (activ) busy
Default	idle

GROUP Fs Disk Part Operational (Oper)

Properties	Operational
Description	This group contains the *Partition* component operational data.
Mib	FileSystem

ATTRIBUTE Fs Disk Part capacity

Access	Read only
Description	This attribute indicates the size of the partition.
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

ATTRIBUTE Fs Disk Part freeSpace

Access	Read only
Description	This attribute indicates the available free disk space of the partition. Free space is reduced by bad blocks (if any).
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

ATTRIBUTE Fs Disk Part badBlocksPercentage

Access	Read only
Description	This attribute records the percentage of the disk space lost because of defects. If this percentage is high, it is recommended to change the disk.
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

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COMPONENT Fs FsPartition (Part)

Instance	Decimal (0..3)
Groups	GROUP Fs Part OsiState (State) GROUP Fs Part Operational (Oper)
Scope	Device
Description	*Fs Part/n* A *FileSystemPartition* component is an operational subcomponent of the *FileSystem* component. Each instance of this component represents a partition. The instance value is the partition number. The component is only visible on a partitioned disk.
Mib	FileSystem
Common Verbs	Help List Display

GROUP Fs Part OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FileSystem

ATTRIBUTE Fs Part adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	FileSystem
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Fs Part operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FileSystem
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Fs Part usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FileSystem
Values	idle active (activ) busy
Default	idle

GROUP Fs Part Operational (Oper)

Properties	Operational

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Description	This group contains the operational data for the *FileSystemPartition* component.
Mib	FileSystem

ATTRIBUTE Fs Part capacity

Access	Read only
Description	This attribute indicates the total formatted size of the *partition*.
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

ATTRIBUTE Fs Part freeSpace

Access	Read only
Description	This attribute indicates the available free disk space in the *partition*. Free space is reduced by bad blocks (if any).
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

ATTRIBUTE Fs Part usage

Access	Read only
Description	This attribute indicates the percentage of the used space in the *partition*.
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Fs Part mode

Access	Read only
Description	The mode value indicates whether the partition is shadowed or local. A shadowed partition is one where the data is mirrored on the standby CP's disk, if one exists and the local partition is one in which the data is not mirrored to the standby CP's disk.
Mib	FileSystem

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Values	shadowed notShadowed
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Fs

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - GsmBc

NN10600-060

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COMPONENT GsmIwfBearerChannel (GsmBc)

Instance	trunkGrp [Decimal (1..8191)] cic [Decimal (1..2047)]
Groups	GROUP GsmBc Operational (Oper) GROUP GsmBc CustomerIdentifierData (CidData) GROUP GsmBc OsiState (State)
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic>* This component represents an individual bearer channel resource for a given *GsmIwfCallServer*. Depending on the call type requested, the *GsmIwfCallServer* links one or more *GsmIwfBearerChannel*s in a single GSM InterWorking Function (IWF) call. Each *GsmIwfBearerChannel* is linked to a channel on a DS1 or E1 port on a logical processor (one *GsmIwfBearerChannel* per channel). The instance value *trunkGrp* is the external identifier for the trunk group configured at the Mobile Services-switching Center (MSC) connected to this node and associated with this *GsmIwfBearerChannel* instance. The instance value *cic* is the external identifier for the trunk group member. It is referred to as the circuit identifier code (cic) and is the same index used when configuring the channel at the Mobile Services-switching Center (MSC). This component is specific to the ***gsmIwfBearerChannel*** feature of the

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wirelessIwf application. Refer to NTP 411-5221-520 “GPP Interworking Function Data Guide” for details on its usage.

Mib	GsmIwf
Subcomponents	COMPONENT GsmBc Framer
Dyn. Subcomp.	COMPONENT GsmBc Layer1 COMPONENT GsmBc Modem COMPONENT GsmBc V110 COMPONENT GsmBc Fax COMPONENT GsmBc RadioLinkProtocol (Rlp) COMPONENT GsmBc V42 COMPONENT GsmBc V42bis COMPONENT GsmBc Layer2RelayCop (L2RCop) COMPONENT GsmBc UpperRelay
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP GsmBc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes concerning the operation of this particular *GsmIwfBearerChannel* for the current or most recent call.
Mib	GsmIwf

ATTRIBUTE GsmBc mipState

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the MSC/IWF Interface Protocol (MIP) for an IWF element. Valid values are: ***idle***, Startup state of IWF element. ***pendingSetup***, Pending initial state of IWF element. ***setup***, Initial state of IWF element. ***pendingActivation***, Synchronization has been requested, but the IWF element is not yet in the Synchronization state. ***activated***, Synchronization state. ***holdDisconnect***, Flush buffer state, during call clearing the MSC is responsible for holding the network connection towards the disconnected party while the IWF completes the data transmission (flushing any buffered data towards the disconnected party; any buffered data towards the disconnecting party is discarded.)

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currentlySuspended, The call is temporarily switched to speech phase during a dual services call.

Mib — GsmIwf

Values
idle
pendingSetup (pendSet)
setup
pendingActivation (pendAct)
activated (act)
holdDisconnect (holdDisc)
suspended (susp)

Default — idle

ATTRIBUTE GsmBc maxUserDataRate (maxUserRate)

Access
Read: All
Write: Illegal

Description — This attribute indicates the user rate which is in affect between the IWF and the fixed network. A user rate of ***1200_75*** is 75 bit/s in the receive direction 1200 bit/s in the transmit direction.

Mib — GsmIwf

Values
300
600
1200
1200_75
2400
4800
7200
9600
12000
14400
16800
19200
21600
24000
26400
28800
31200
32000
33600
38400
43200
48000
56000
57600
64000
none

Units — bit/s

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Default	none

ATTRIBUTE GsmBc connectionType (connType)

Access	Read: All Write: Illegal
Description	This attribute indicates the connection types between the terminal equipment or terminal adaptor and mobile and between the IWF and the network. Valid connection types are: ***asynchronous***, Transmission of data which does not require clocking of the data signal. ***synchronous***, Transmission of data which requires clocking of the data signal.
Mib	GsmIwf
Values	synchronous (sync) asynchronous (async)
Default	No default

ATTRIBUTE GsmBc dataBits

Access	Read: All Write: Illegal
Description	This attribute indicates the number of data bits encoded between start and stop bits in an asynchronous data call connection data stream. This attribute is set to ***notApplicable*** for a synchronous data call.
Mib	GsmIwf
Values	7 8 notApplicable (na)
Default	notApplicable

ATTRIBUTE GsmBc stopBits

Access	Read: All Write: Illegal
Description	This attribute indicates the number of stop bits (a mark (binary 1) placed at the end of each data byte) inserted between the data bits in an asynchronous data call connection data stream, this marks the end of the character. This attribute is set to ***notApplicable*** for a synchronous data call.
Mib	GsmIwf
Values	1 2 notApplicable (na)
Default	notApplicable

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ATTRIBUTE GsmBc parity

Access	Read: All Write: Illegal
Description	This attribute indicates the type of parity for the data bits in an asynchronous data call connection data stream. Parity is a redundant bit that is added to each data byte to aid in error detection. If odd parity is used, all data bytes have an odd number of 1s, and if even parity is used, all data bytes have an even number of 1s. Also parity may be forced to 0, forced to 1, or may not be used at all (required for sending 8-bit data). This attribute will be set to ***notApplicable*** for a synchronouse data call. Valid values are: ***none***, No parity. ***odd,*** Odd parity. ***even***, Even parity. ***forced0***, Parity forced to 0. ***forced1***, Parity forced to 1. ***notApplicable***, Parity not applicable.
Mib	GsmIwf
Values	none odd even forced0 forced1 notApplicable (na)
Default	none

ATTRIBUTE GsmBc flowControl

Access	Read: All Write: Illegal
Description	This attribute indicates the current flow control status of this *GsmIwfBearerChannel* for an asynchronous call. For a synchronous data call this attribute will be set to ***noFlowControlActive***. Valid values are: ***noFlowControlActive***, There is no flow control active over the air interface and network interfaces. The applications at the end points handle flow control. ***inband***, Embedded characters in the data stream indicate flow control. ***v110FlowCtnrl***, Utilization of V.110 flow control. ***errorCntrl***, Flow control is handle by datalink protocols.
Mib	GsmIwf
Values	noFlowControlActive (noFlow) inband v110FlowCntrl (v110Flow) errorCntrl (errCntrl)

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Default	noFlowControlActive

ATTRIBUTE GsmBc callType

Access	Read: All Write: Illegal
Description	This attribute indicates the current call type. Valid values are: ***faxG3***, group 3 fax calls ***cda31khz***, asynchronous 3.1kHz modem ***cdaUdi***, asynchronous unrestricted digital data call ***cdsUdi***, synchronous unrestricted digital data call ***cds31khz***, synchronous 3.1kHz modem
Mib	GsmIwf
Values	faxG3 cda31khz cdaUdi cdsUdi cds31khz
Default	No default

ATTRIBUTE GsmBc lastResponseCode (respCode)

Access	Read: All Write: Illegal
Description	This attribute indicates the MSC/IWF Interface Protocol (MIP) response code returned for the last call which was active on this particular *GsmIwfBearerChannel*. Valid values are: ***requestDone***, the call was terminated normally. ***systemError***, the call was terminated due to a base system problem. ***applicationError***, the call was terminated due to an application level problem. ***noResources***, the call was terminated due to a lack of available resources. ***msgSizeMismatch***, Message length does not match length defined by the MSC/IWF Interface Protocol for the particular message type. ***protocolViolation***, Failed to perform the request because the coding of the request message was invalid; message was not understood. ***requestNotSupported***, Message was understood but not supported by the IWF or MSC. ***requestDenied***, Message was understood and supported by the IWF or MSC but the request is denied. ***invalidMessage***, Message received is invalid for the current state of the IWF's state machine or the MSC data call state machine. The message is ignored. ***bufferNotFlushed***, Message from the Iwf to the MSC indicating that the buffers are not flushed as requested by the MSC. ***notApplicable***, this attribute is not applicable for this call. This is the default value for this attribute.

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Mib	GsmIwf
Values	requestDone (reqDone) systemError (sysErr) applicationError (applErr) noResources msgSizeMismatch (msgSzMismatch) protocolViolation requestNotSupported (reqNotSupp) requestDenied (reqDenied) invalidMessage (invldMsg) bufferNotFlushed (bufsUnflushed) notApplicable (na)
Default	notApplicable

ATTRIBUTE GsmBc mateBearerChannel (mateBc)

Access	Read: All Write: Illegal
Description	This attribute contains the name of the mate *GsmIwfBearerChannel* that this *GsmIwfBearerChannel* is involved with in the currently active call.
Mib	GsmIwf
Values	The name of the component
Default	No default

GROUP GsmBc CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	GsmIwf

ATTRIBUTE GsmBc customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to

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as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib	GsmIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP GsmBc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	GsmIwf

ATTRIBUTE GsmBc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	GsmIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE GsmBc operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	GsmIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE GsmBc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	GsmIwf
Values	idle active (activ) busy
Default	idle

COMPONENT GsmBc Framer

Groups	GROUP GsmBc Framer Provisioned (Prov) GROUP GsmBc Framer Statistics (Stats) GROUP GsmBc Framer LinkOptions (Link) GROUP GsmBc Framer OsiState (State)
Scope	Device
Description	*GsmBc/<trunkGrp>,<cic> Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. The *Framer* component also associates an application component with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes which are associated with hardware

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components. The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

Mib GsmIwf

Common Verbs
Help
List
Display

GROUP GsmBc Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib GsmIwf

ATTRIBUTE GsmBc Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib GsmIwf

Values Link (Hardware, applicationFramerName)

Default No default

GROUP GsmBc Framer Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics data for a *Framer* component.

Mib GsmIwf

ATTRIBUTE GsmBc Framer frmToIf

Access Read only

Description This attribute counts the number of frames transmitted to the link interface by *Framer.* The counter wraps when it exceeds the maximum value.

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Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer octetFromIf

Access	Read only
Description	This attribute counts the number of bytes received from the link interface by *Framer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer crcErrors

Access	Read only
Description	This attribute coutns the the total number of frames with CRC errors, occurring in the receive direction from the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer underruns

Access	Read only
Description	This attributecounts the total number of frames transmitted to the link for which underruns occurred. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

GROUP GsmBc Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains provisionable attributes for the GsmIwfFramer which controls link layer framing for application components sending and receiving data on a link interface for this particular GsmIwfBearerChannel.
Mib	GsmIwf

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ATTRIBUTE GsmBc Framer framingType

Access	Read: All Write: Service
Criticality	Process
Description	This attribute indicates the type of framing for the link layer data received and transmitted on this channel. Valid values are: ***BtdsFraming***, bit transparent framing required for the *GsmIwfBearerChannel* components on MVP cards. ***GsmFraming***, GSM framing for the *GsmIwfBearerChannel* components on DS1C/E1C cards.
Mib	GsmIwf
Values	btdsFraming gsmFraming
Default	gsmFraming

GROUP GsmBc Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	GsmIwf

ATTRIBUTE GsmBc Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	GsmIwf

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE GsmBc Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	GsmIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE GsmBc Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	GsmIwf
Values	idle active (activ) busy
Default	idle

COMPONENT GsmBc Layer1

Groups	GROUP GsmBc Layer1 Operational (Oper) GROUP GsmBc Layer1 Statistics (Stats)
Scope	Application

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Description	*GsmBc/<trunkGrp>,<cic> Layer1* This component represents the group of measurements for the GSM Layer 1 protocol established for a GSM IWF call (on the mobile station to IWF link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc Layer1 Operational (Oper)

Properties	Operational
Description	This group contains physical layer operational attributes concerning the operation of this particular *GsmIwfBearerChannel*.
Mib	GsmIwf

ATTRIBUTE GsmBc Layer1 activeMode (mode)

Access	Read: All Write: Illegal
Description	This attribute indicates the active physical layer protocol between the mobile and the IWF. Valid values are: ***v110***, GSM V.110 rate adaptation scheme for interworking V-series connections to an Integrated Services Digital Network (ISDN). ***aTrau***, GSM A-Transcoder/Rate Adaptor (A-TRAU).
Mib	GsmIwf
Values	v110 aTrau
Default	No default

ATTRIBUTE GsmBc Layer1 connection (conn)

Access	Read: All Write: Illegal
Description	This attribute indicates the connection between the mobile and the IWF. Valid values are: ***transparent***, Constant throughput, constant transit delay, and variable error rate (does not use Radio Link Protocol). ***nonTransparent***, Improved error rate with variable transit delay and variable throughput (uses Radio Link Protocol).
Mib	GsmIwf

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Values	transparent (trans) nonTransparent (nonTrans)
Default	No default

ATTRIBUTE GsmBc Layer1 dataRate

Access	Read: All Write: Illegal
Description	This attribute indicates the layer 1 user data rate for the currently active call for this *GsmIwfBearerChannel*. This is the data rate between the mobile and IWF.
Mib	GsmIwf
Values	Decimal (0..64000)
Units	bit/s
Default	No default

ATTRIBUTE GsmBc Layer1 intermediateRate (iRate)

Access	Read: All Write: Illegal
Description	This attribute indicates the intermediate rate used in the physical layer rate adaptation process. This field is valid between the mobile and the IWF. For user data rates of 300 bit/s - 4800 bit/s the intermediate rate is 8 kbit/s. For user data rates 9600 bit/s and above the intermediate rate is 16 kbit/s.
Mib	GsmIwf
Values	Decimal (8; 16)
Units	kbit/s
Default	No default

GROUP GsmBc Layer1 Statistics (Stats)

Properties	Operational
Description	This group contains physical layer statistics concerning the operation of this particular *GsmIwfBearerChannel*.
Mib	GsmIwf

ATTRIBUTE GsmBc Layer1 framesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames transmitted on the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 framesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames received on the link. Discarded frames are not included in this count. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 bytesTx

Access	Read: All Write: Illegal
Description	This attribute counts number of bytes transmitted on the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 bytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of bytes received on the link. Bytes from discarded frames are not included in this count. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 underRunsTx

Access	Read: All Write: Illegal
Description	This attribute counts number of underruns, on a per-call basis, in the transmit direction reported by the hardware on the mobile-side.. These frames are not counted towards the number of frames transmitted (*framesTx*). The counter wraps when it exceeds the maximum value.

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Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 overRunsRx

Access	Read: All Write: Illegal
Description	This attribute counts number of overruns, on a per-call basis, in the receive direction reported by the hardware on the mobile-side. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx)*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 nonOctetErrorsRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of non-octet synchronous frame errors, on a per-call basis, received on the link reported by the hardware. This is when a frame whose bit content was not divisible by eight was detected. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 largeFrameErrorsRx (lrgFrmErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames, on a per-call basis, received on the link that exceeded internal buffer limits reported by the hardware. A large number of these errors could indicate a bad physical medium. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE GsmBc Layer1 framesDiscarded (frmDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames discarded, on a per-call basis, in the receive direction by software due to frame errors. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 lrcErrorsTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of corrupted frames, on a per-call basis, due to memory inconsistencies found by Longitude Redundancy Check (LRC) checks at the IWF. These frames are not counted towards the number of frames transmitted (*framesTx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc Modem

Groups	GROUP GsmBc Modem Operational (Oper) GROUP GsmBc Modem Statistics (Stats)
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> Modem* This component represents the group of measurements for the modem protocol established for a GSM IWF call (on the IWF to Public Switched Telephone Network (PSTN) modem link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

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GROUP GsmBc Modem Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *modem* component for this particular *GsmIwfBearerChannel*.
Mib	GsmIwf

ATTRIBUTE GsmBc Modem rate

Access	Read: All Write: Illegal
Description	This attribute indicates the transmission rate of the current modem in use. A rate of ***1200_75*** is 75 bit/s in the transmit direction and 1200 bit/s in the receive direction. All other rates are the same in both the transmit and receive directions.
Mib	GsmIwf
Values	300 600 1200 1200_75 2400 4800 7200 9600 12000 14400 16800 19200 21600 24000 26400 28800 31200 32000 33600 38400 43200 48000 56000 57600 64000
Units	bit/s
Default	No default

ATTRIBUTE GsmBc Modem algorithmInUse (algorithm)

Access	Read: All Write: Illegal

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Description	This attribute indicates the current modem algorithm(s) active for the channel. Valid values are: ***v17,*** V.17 is active.V.17 is an ITU-T 14400bit/s modem standard. ***v27ter***, V.27ter is active. V.27ter is an ITU-T 7200bit/s modem standard. ***v29***, V.29 is active. V.29 an ITU-T 9600bit/s modem standard. ***v21***, V.21 active. V.21 is an ITU-4 300bit/s modem standard. ***v22bis***, V.22 or V.22bis active. V.22 ia an ITU-T modem standard that operates at 1200bit/s and 600 baud. V.22bis is an ITU-T modem standard that operates at 2400bit/s and 600 baud. ***v23***, V.23 active. V.23 is an ITU-T modem standard that operates at a speed of 1200bit/s. ***v26ter,*** V.26ter active. V.26ter is an ITU-T modem standard that operates at a speed of 2400bit/s. ***v32bis***, V.32 or V.32bis active. V.32 is an ITU-T modem standard that operates at 9600bit/s and 2400 baud. V.32bis is an ITU-T modem standard that operates at a speed of 14.4kbit/s. ***v34***, V.34 active. V.34 is an ITU-T modem standard that operates at a speed of up to 28.8kbit/s.
Mib	GsmIwf
Set of	v17 v29 v27ter v21 v22bis v23 v26ter v32bis v34
Default	No default

ATTRIBUTE GsmBc Modem protocolState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the active protocol state of the modem in use.Valid values are: ***idle***, Modem is in an inactive state and has no current connection established. ***training***, Modem is attempting to establish a connection with the far end modem via handshaking. ***connected***, Modem has establish a connection with the far end modem.
Mib	GsmIwf
Values	idle training connected
Default	No default

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ATTRIBUTE GsmBc Modem receiverTransmitter (rxTx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the fax data modem is in receive or transmit mode. If this is not a fax data modem call, then the value is set to ***notApplicable***. Valid values are: ***notApplicable***, Not an applicable field. ***rxOnTxOff***, Receiver is on, transmitter is off. ***rxOffTxOn***, Receiver is off, transmitter is on. ***rxTxOn***, Reciever is on, transmitter is on.
Mib	GsmIwf
Values	notApplicable (na) rxOnTxOff rxOffTxOn rxTxOn
Default	notApplicable

ATTRIBUTE GsmBc Modem training

Access	Read: All Write: Illegal
Description	This attribute indicates the training procedure used by the V.17 modems. ITU-T defines two training procedures. A longer training procedure used at call setup, and a short training procedure is used during the fax call when switching from the V.21 modem to the V.17 modem. A value of ***notApplicable*** indicates that the attribute is not applicable for the modem.
Mib	GsmIwf
Values	short long notApplicable (na)
Default	notApplicable

ATTRIBUTE GsmBc Modem toUpperFlowControlActive (upperFlow)

Access	Read: All Write: Illegal
Description	This attribute indicates whether flow control was requested and an indication was sent to an upper layer protocol.
Mib	GsmIwf
Values	on off
Default	No default

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ATTRIBUTE GsmBc Modem toDspFlowControlActive (lowerFlow)

Access	Read: All Write: Illegal
Description	This attribute indicates whether an upper layer protocol requested flow control and an indication was sent to the Digital Signal Processor.
Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem asyncMode (async)

Access	Read: All Write: Illegal
Description	This attribute indicates whether conversion between synchronous and asynchronous data format (specifacally, the stripping or insertion of start and stop bits) is being performed. The value will be ***on*** unless the V.42 layer is active or it is a fax call.
Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem autoHdlcMode (autoHdlc)

Access	Read: All Write: Illegal
Description	This attribute indicates whether High-Level Data Link Control (HDLC) functions are being performed by the modem to support HDLC applications (V.42 for example).
Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem outbandFlowControl (outbandFlow)

Access	Read: All Write: Illegal
Description	This attribute indicates whether inband or outband flow control conversions are being performed. The modem performs either inband or outband flow control unless V.42 layer is active, it is a fax call, or no flow control was specified by the MSC.

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Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem outbandBreak (outbandBrk)

Access	Read: All Write: Illegal
Description	This attribute indicates whether inband or outband break control conversions are being performed. This is when the modem detects a break condition as defined by ITU-T X.28 and reports it. When a break condition is discovered all subsequent incoming data is discarded until a start bit is received.
Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem autobaud

Access	Read: All Write: Illegal
Description	This attribute indicates whether autobaud is active. The modem is instructed at call setup time by the MSC on: What is the initial modem data rate value and Whether a modem is allowed to perform autobauding (***on***) or not (***off***). With Autobauding ***on***, the modem is allowed to connect using a valid modem data rate less than or equal to the initial rate specified to the modem by the MSC. If a modem can not perform autobauding and the carrier can not be established at the initial data rate, the modem is disabled.
Mib	GsmIwf
Values	on off
Default	No default

GROUP GsmBc Modem Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure performance of the modem component for this particular *GsmIwfBearerChannel*.
Mib	GsmIwf

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ATTRIBUTE GsmBc Modem bytesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload bytes transmitted. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Modem bytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload bytes received. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Modem framingErrors (frmErr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of framing errors detected by the hardware. This is the absence of a stop bit after a start bit and eight bits of data. All incoming data is discarded until the next start bit is received. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc V110

Groups	GROUP GsmBc V110 Operational (Oper) GROUP GsmBc V110 Statistics (Stats)
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> V110* This component represents the group of measurements for the ITU-T V.110 rate adaptation protocol established for a GSM IWF call (on the IWF to Integrated Services Digital Network (ISDN) terminal adapter link) on this particular *GsmIwfBearerChannel*.

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	Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc V110 Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of *V110*.
Mib	GsmIwf

ATTRIBUTE GsmBc V110 dataRate

Access	Read: All Write: Illegal
Description	This attribute contains the layer 1 user data rate for the currently active call for this *GsmIwfBearerChannel*. This is the data rate between the IWF and the fixed network.
Mib	GsmIwf
Values	Decimal (0..65000)
Units	bit/s
Default	No default

ATTRIBUTE GsmBc V110 intermediateRate (iRate)

Access	Read: All Write: Illegal
Description	This attribute indicates the intermediate rate used in the physical layer rate adaptation process. This field is valid between the network and the IWF. For user data rates of 300 bit/s to 4800 bit/s the intermediate rate is 8 kbit/s. For a user data rate of 9600 bit/s the intermediate rate is 16 kbit/s. For user data rates of 1200 bit/s to 19200 bit/s the intermediate rate is 32 kbit/s. Data rates above this have no intermediate rate.
Mib	GsmIwf
Values	8 kbit/s 16 kbit/s 32 kbit/s notApplicable (na)
Default	No default

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GROUP GsmBc V110 Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes which measure the performance of V110.
Mib	GsmIwf

ATTRIBUTE GsmBc V110 framesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames transmitted on the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 framesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames received on the link. Discarded frames are not included in this count. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 bytesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of bytes transmitted on the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 bytesRx

Access	Read: All Write: Illegal

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Description	This attribute counts the number of bytes received on the link. Bytes from discarded frames are not included in this count. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 underRunsTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of underruns, on a per-call basis, in the transmit direction reported by the hardware on the network side. These frames are not counted towards the number of frames transmitted (*framesTx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc V110 overRunsRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of overruns, on a per-call basis, in the receive direction reported by the hardware on the network side. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 nonOctetErrorsRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of non-octet synchronous frame errors, on a per-call basis, received on the link reported by the hardware. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE GsmBc V110 largeFrameErrorsRx (lrgFrmErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames received on the link that exceeded internal buffer limits reported by the hardware, on a per-call basis. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 framesDiscarded (frmDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames discarded, on a per-call basis, in the receive direction by software due to frame errors. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 lrcErrorsTx (lrcErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of corrupted frames, on a per-call basis, due to memory inconsistencies found by Longitude Redundancy Check (LRC) checks at the IWF. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc Fax

Groups	GROUP GsmBc Fax Operational (Oper) GROUP GsmBc Fax Statistics (Stats)
Scope	Application

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Description	*GsmBc/<trunkGrp>,<cic> Fax* This component represents the group of measurements for the fax protocol established for a GSM IWF call (on the mobile station to IWF link or the IWF to Public Switched Telephone Network (PSTN) fax modem/ machine link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc Fax Operational (Oper)

Properties	Operational
Description	This group contains operational attributes which measure the performance of the fax protocol.
Mib	GsmIwf

ATTRIBUTE GsmBc Fax activeMode (mode)

Access	Read: All Write: Illegal
Description	This attribute indicates the mode of the fax T.30 protocol, determined during Exchange Identification (XID) negotiations. The following modes are supported: ***normal***, normal T.30 protocol, Error Correction Mode (ECM) not used ***ecm***, Error Correction Mode used. Fax error correction is done using a half-duplex page selective repeat technique.
Mib	GsmIwf
Values	normal ecm
Default	normal

ATTRIBUTE GsmBc Fax protocolState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the protocol state of the fax adaptor. The values are: ***setup,*** call setup state ***idle,*** idle state only transmitting Synchronize (SYNC) frames ***bcsRx,*** receiving Binary Coded Signal (BCS) packet from modem ***bcsTx,*** transmitting BCS packet to modem ***msgRx,*** receiving fax message from modem

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msgTx, transmitting fax message to modem

Mib	GsmIwf
Values	setup idle bcsRx bcsTx msgRx msgTx
Default	idle

ATTRIBUTE GsmBc Fax messageRate (msgRate)

Access	Read: All Write: Illegal
Description	This attribute indicates the fax message rate used for sending fax documents.
Mib	GsmIwf
Values	Decimal (0..65000)
Units	bit/s
Default	No default

GROUP GsmBc Fax Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes which measure the performance of the fax protocol.
Mib	GsmIwf

ATTRIBUTE GsmBc Fax messageFramesRx (msgFrmRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax message frames received from the mobile. One fax message frame is an eight byte DATA frame defined in GSM 3.45. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax messageFramesTx (msgFrmTx)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of fax message frames transmitted to the mobile. One fax message frame is an eight byte DATA frame defined in GSM 3.45. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax bcsFramesRx (bcsFrmRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax Binary Coded Signal (BCS) frames received from the mobile. A fax BCS frame is an 8-byte STATUS frame, which carries T.30 BCS data as defined in GSM 3.45. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax bcsFramesTx (bcsFrmTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax Binary Coded Signal (BCS) frames transmitted to the mobile. A fax BCS frame is an 8-byte STATUS frame, which carries T.30 BCS data as defined in GSM 3.45. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax pagesRxFromMobile (pagesRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax pages received from the mobile. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE GsmBc Fax pagesTxToMobile (pagesTx)

Access	Read: All Write: Illegal
Description	The attribute counts the number of fax pages transmitted to the mobile. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax channelModeModify (cmm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Channel Mode Modify (CMM) requests initiated by the IWF. For transparent fax calls, the transmission speed is determined by the two fax machines at call setup. The speed may change during the transmission to satisfy the T.30 protocol. The CMM request is used by the GSM IWF to request that the T.30 requested speed change can be propagated throughout the network. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax bcsFrameErrors (bcsFrmErr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax Binary Coded Signal (BCS) frames in error. This attribute indicates the count of corrupted fax BCS frames over the GSM radio channel. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc RadioLinkProtocol (Rlp)

Groups	GROUP GsmBc Rlp Operational (Oper) GROUP GsmBc Rlp Statistics (Stats)
Scope	Application

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Description	*GsmBc<trunkGrp>,<cic> RadioLinkProtocol/<rlp-type>* This component represents the group of measurements for the Radio Link Protocol (RLP) established for a GSM IWF call (on the mobile station to IWF link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc Rlp Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *GsmIwfBearerChannel*.
Mib	GsmIwf

ATTRIBUTE GsmBc Rlp protocolState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the last Radio Link Protocol (RLP) state before call take down. The following are the states: ***detached,*** Initial State. The call has not even started. ***disconnected***, Asynchronous Disconnected Mode (ADM). ***connPending***, In ADM, but sent Set Asynchronous Balanced Mode (SABM) and waiting for a response. ***discPending***, Sent Disconnect (DISC), waiting for a response. ***connectEstablished***, In Asynchronous Balanced Mode (ABM), Information frames can be exchanged. ***synchronized***, Synchronization state entered after a change of channel coding. Handles REMAP procedure.
Mib	GsmIwf
Values	detached (detach) disconnected (disc) connPending (connPend) discPending (discPend) connectEstablished (connEst) synchronized (sync)
Default	detached

ATTRIBUTE GsmBc Rlp frameSize

Access	Read: All Write: Illegal

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Description	This attribute indicates the current Radio Link Protocol (RLP) frame size transmitted. The size of the frame depends on the radio channel type. The frames can be 240 bits long for 12 kbit/s and 6 kbit/s or 576 bits long for 14.5 kbit/s.
Mib	GsmIwf
Values	Decimal (0..65000)
Default	No default

ATTRIBUTE GsmBc Rlp highestVersion (highVer)

Access	Read: All Write: Illegal
Description	This attribute indicates the current highest version of the Radio Link Protocol (RLP) protocol negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). Valid values are: ***0***, Single-link basic version. ***1***, Single-link extended version (for example, extended by data compression). The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *highestVersion*.
Mib	GsmIwf
Values	Decimal (0..1)
Default	No default

ATTRIBUTE GsmBc Rlp iwfToMsWindowSize (iwfMsWs)

Access	Read: All Write: Illegal
Description	This attribute indicates the current IWF to mobile window size negotiated by the Radio Link Protocol (RLP) during Exchange Information (XID). The window size is the maximum number of sequentially numbered Information (I) frames that may be unacknowledged at any given time. GSM specification 4.22 defines the range as 0 to 61. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *iwftoMsWindowSize*.
Mib	GsmIwf
Values	Decimal (0..61)
Default	No default

ATTRIBUTE GsmBc Rlp msToIwfWindowSize (msIwfWs)

Access	Read: All Write: Illegal
Description	This attribute indicates the current mobile to IWF window size negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). The

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	window size is the maximum number of sequentially numbered Information (I) frames that may be unacknowledged at any given time. GSM specification 4.22 defines the range as 0 to 61. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *msToIwfWindowSize*.
Mib	GsmIwf
Values	Decimal (0..61)
Default	No default

ATTRIBUTE GsmBc Rlp t1AckTimer (t1)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T1 timer negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). This is the period in milliseconds within which an acknowledgment of a sent frame must be received. Once this timer expires, the transmitting RLP entity shall assume that the frame was lost. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *t1AckTimer*.
Mib	GsmIwf
Values	Decimal (380..1020)
Units	msec
Default	No default

ATTRIBUTE GsmBc Rlp t2AckDelayTimer (t2)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T2 timer negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). This is the maximum period in milliseconds the receiving RLP entity shall wait before sending an acknowledgment for a received in sequenced frame. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *t2AckDelayTimer*.
Mib	GsmIwf
Values	Decimal (10..70)
Units	msec
Default	No default

ATTRIBUTE GsmBc Rlp n2RetransmitCount (n2)

Access	Read: All Write: Service

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Description	This attribute indicates the current value of N2 negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). This is the maximum number of times a RLP entity shall retransmit an individual frame following the expiry of timer T1. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *n2RetransmitCount*.
Mib	GsmIwf
Values	Decimal (0..255)
Default	No default

GROUP GsmBc Rlp Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *GsmIwfBearerChannel.*
Mib	GsmIwf

ATTRIBUTE GsmBc Rlp iFramesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of valid Information frames transmitted. This count does not include the Information frames discarded. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp iFramesRx

Access	Read: All Write: Illegal
Description	This attributes counts the number of valid Information (I) frames received. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp framesRetransmitted (frmRetrans)

Access	Read: All Write: Illegal

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Description	This attribute counts the total number of frames retransmitted. Frames that are not acknowledged within the T1 timer are retransmitted. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp t1AckTimeouts (t1Timeout)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of T1 timer time-outs. Retransmission of all unacknowledged frames is started after T1 timer expiry. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp invalidFrames (invldFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid frames received. These invalid frames are frames received from the mobile which contain errors in the header information. This count does not include the number of frames with Cyclic Redundancy Check (CRC) errors or out-of-sequence Frame Errors. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp crcErrorsRx (crcErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames with Cyclic Redundancy Check (CRC) errors received by the IWF Radio Link Protocol (RLP) entity. CRC is a type of block check character that is very effective in detecting communications errors. CRCs are commonly 16 or 32 bits long (though, in GSM non-transparent services, a 24-bit CRC is used). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE GsmBc Rlp outOfSequenceFrames (outOfSeqFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of out-of-sequence Information frames received by the IWF Radio Link Protocol (RLP) entity. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp remoteBusyIndications (remoteBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the mobile Radio Link Protocol (RLP) entity is busy (that is, it is in Asynchronous Balanced Mode (ABM) and is not ready to receive Information frames). The RLP entity is considered to be not ready to receive information frames if the mobile sends a flow control indication RNR (Receive Not Ready). A Receive Ready is sent to the RLP entity when the mobile is ready to receive data. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp localBusyIndications (localBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the IWF RLP entity is busy (that is it is in Asynchronous Balanced Mode (ABM) and is not ready to receive Information frames). When the network side introduces flow control towards the mobile and a Receive Not Ready (RNR) is sent to the mobile to stop the mobile from sending any more data frames. A Receive Ready (RR) is sent to the mobile when the RLP entity is ready to receive data. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE GsmBc Rlp iFramesTxDiscarded (iFrmTxDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames discarded by the IWF. Untransmitted and unacknowledged frames are discarded when a Set Asynchronous Balanced Mode (SABM) or Disconnect (DISC) is received or sent in Asynchronous Balanced Mode (ABM) mode. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp resetsRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets sent by the mobile. Loss of information may occur when a reset is issued. A reset is issued by the mobile on failure of checkpoint recovery. That is if the mobile does not receive acknowledgment for its information frame, it does checkpoint recovery (it sends a supervisory frame requesting the status of the other entity. If the responding entity fails to respond to N2 of this checkpoint frame a reset is initiated by the originating entity. A reset can also be issued by the mobile during handover where a loss of connection or synchronization occurs. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc V42

Groups	GROUP GsmBc V42 Operational (Oper) GROUP GsmBc V42 Statistics (Stats)
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> V42* This component represents the group of measurements for the ITU-T V.42 error correcting protocol established for a GSM IWF call (on the IWF to Public Switched Telephone Network (PSTN) modem link) on this particular *GsmIwfBearerChannel.*

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Note that this component is present only if the current (or most recent call) involved this protocol.

Mib GsmIwf

Common Verbs
Help
List
Display

GROUP GsmBc V42 Operational (Oper)

Properties Operational

Description This group contains operational attributes which measure V.42 error detection and correction performance.

Mib GsmIwf

ATTRIBUTE GsmBc V42 protocolState (state)

Access
Read: All
Write: Illegal

Description This attribute indicates the state of V.42. Valid states are:

notActive, The V.42 link connection with the Public Switched Telephoned Network) PSTN modem is not established. None of the V.42 functions including the error detection, error correction, and flow control is provided to the data call. This is the initial state of V.42.
disconnected, This means that the V42 link is disconnected.
linksetup, The V.42 operation enters this state from the disconnected state after the V.42 sends to the PSTN modem a Set Asynchronous Balanced Mode Extended (SABME) frame in an attempt to establish the error control connection with the PSTN modem.
frameReject, The V.42 operation enters into this state after it identifies an invalid frame sent by the peer and it sends back a frame reject (FRMR) frame to the peer.
disconnectRequest, The V.42 operation enters into this state after it sends to the peer a disconnect (DISC) frame with the attempt to disconnect the V.42 error control link.
informationTransfer, The V.42 enters into this state after it receives a UA (unnumbered acknowledgment) frame which the peer sent upon receipt of the SAMBE frame from IWF V.42. Once in this state, the V.42 can exchange data and supervisory information with its peer.
waitingAck, The V.42 enters this state after it sends polling enquiry to its peer. The V.42 sends the polling enquiry when it receives a reject frame (REJ) from its peer or either its acknowledgment timer or inactivity timer timed out on the information frames sent out.

Mib GsmIwf

Values
notActive
disconnected (disc)

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	linksetup frameReject (frmRej) disconnectRequest (discReq) informationTransfer (infoXfer) waitingAck (waitAck)
Default	notActive

ATTRIBUTE GsmBc V42 txN401FrameSize (txN401)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of parameter N401 for V.42 which is negotiated during Exchange Information (XID). This is the maximum number of octets that can be carried in the information field of an information frame that the IWF V.42 transmits to the Public Switched Telephone Network (PSTN) modem. The IWF V.42 puts this or even smaller size of data into the outgoing information frame. The value used for XID negotiations can be provisioned by component *GsmIwfV42* attribute *txN401FrameSize.*
Mib	GsmIwf
Values	Decimal (0..65355)
Default	No default

ATTRIBUTE GsmBc V42 rxN401FrameSize (rxN401)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of N401, that is negotiated during Exchange Identification (XID). This is the maximum number of octets that can be carried in the information field of an information frame received from the Public Switched Telephone Network (PSTN) modem. An incoming information frame carrying data octets more than this size shall be rejected by the IWF V.42. The value used for XID negotiations can be provisioned by component *GsmIwfV42* attribute *rxN401FrameSize.*
Mib	GsmIwf
Values	Decimal (1..255)
Default	No default

ATTRIBUTE GsmBc V42 txKwindowSize (txK)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of k, that is negotiated during Exchange Identification (XID). This is the size of flow control sliding window used for the information frames that the V.42 transmits to the Public Switched Telephone Network (PSTN) modem. This size governs

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	the maximum number of information frames that the IWF V.42 error-correcting entity can have outstanding (that is, unacknowledged). The value used for XID negotiations can be provisioned by component *GsmIwfV42* attribute *txKwindowSize.*
Mib	GsmIwf
Values	Decimal (0..127)
Default	No default

ATTRIBUTE GsmBc V42 rxKwindowSize (rxK)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of k that is negotiated during Exchange Identification (XID). This is the size of flow control sliding window used for information frames transmitted from the Public Switched Telephone Network (PSTN) modem. This size governs the maximum number of information frames that the peer of the IWF V.42 error-correcting entity can have outstanding (that is, unacknowledged). The value used for XID negotiations can be provisioned by component *GsmIwfV42* attribute *rxKwindowSize.*
Mib	GsmIwf
Values	Decimal (1..127)
Default	No default

GROUP GsmBc V42 Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes that measure the V.42 error detection and correction performance.
Mib	GsmIwf

ATTRIBUTE GsmBc V42 iBytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that the V.42 actually received from the Public Switched Telephone Network (PSTN) modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE GsmBc V42 iBytesTx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that the V.42 transmitted to the Public Switched Telephone Network (PSTN) modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 iFramesRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Information (I) frames that the V.42 received from the Public Switched Telephone Network (PSTN) modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 iFramesTx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of information frames that the V.42 transmitted to the Public Switched Telephone Network (PSTN) modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 framesRetransmitted (frmRetrans)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames retransmitted by the IWF V.42 entity in a data call. The V.42 retransmits the same frame when the associated T401 acknowledgment timer time-outs or when a Reject (REJ) supervisory frame has been received from the Public Switched Telephone Network (PSTN) modem. The counter wraps when it exceeds the maximum value.

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Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 t1AckTimeouts (t1Timeout)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times that the T401 timer has timed out within a data call. If this timer times-out frequently, the operator may need to adjust the provisional parameter T401 acknowledgment timer to a larger time amount, since every time that V.42 sends out a frame it sets the T401 timer to wait for the peer's acknowledgment of the frame. When the timer times-out and no acknowledgment has been received, the V.42 sends the same frame to its peer. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 remoteBusyIndications (remoteBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the Public Switched Telephone Network (PSTN) modem enters a busy state (the IWF has received a Receive Not Ready message) and asks the IWF V.42 not to send Information (I) frames to it until it is ready to receive information frames again (indicated by receipt of a Receive Ready message or a data message). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 localBusyIndications (localBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the IWF V.42 enters in a busy condition and asks the peer to stop sending information frames until it has cleared up from the busy condition. The V.42 enters busy condition when its data buffer is about to be overflowed by the incoming Information (I) frames. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 badFramesRx (badFrmRx)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bad frames the IWF V.42 has received from the Public Switched Telephone Network (PSTN) remote modem within the data call. In this instance, “bad frames” refer to the V.42 protocol error frames other than the check sequence error frames. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 crcErrorsRx (crcErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames received from the remote Public Switched Telephone Network (PSTN) modem that contain incorrect frame check sequence. A high value signifies the condition of the physical medium is poor. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc V42bis

Groups	GROUP GsmBc V42bis Operational (Oper) GROUP GsmBc V42bis Statistics (Stats)
Scope	Application
Description	*GsmBc<trunkGrp>,<cic> V42bis* This component represents the group of measurements for the ITU-T V.42bis data compression protocol established for a GSM IWF call (on the mobile station to the IWF link or the IWF to Public Switched Telephone Network (PSTN) fax modem link) on this particular *GsmIwfBearerChannel.*

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Note that this component is present only if the current (or most recent call) involved this protocol.

Mib GsmIwf

Common Verbs Help
List
Display

GROUP GsmBc V42bis Operational (Oper)

Properties Operational

Description This group contains operational attributes that measure the performance of *V.42bis*.

Mib GsmIwf

ATTRIBUTE GsmBc V42bis protocolModeEncoder (modeEncoder)

Access Read: All
Write: Illegal

Description This attribute indicates the current mode of the V.42bis encoder. This mode can be either:
transparent - A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences may be inserted into the data stream.
compressed - A mode of operation in which data is transmitted in codewords.
The encoder switches between the two modes depending on whether the data coming from the Date Terminal Equipment (DTE) is suitable for compression. The data comression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.

Mib GsmIwf

Values transparent
compressed

Default No default

ATTRIBUTE GsmBc V42bis protocolModeDecoder (modeDecoder)

Access Read: All
Write: Illegal

Description This attribute indicates the current mode of the V.42bis decoder. This mode can be either:
transparent - A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences may be inserted into the data stream.
compressed - A mode of operation in which data is transmitted in

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codewords.
The encoder (at the mobile or Public Switched Telephone Network) switches between the two modes depending on whether the data coming from the Date Terminal Equipment (DTE) is suitable for compression. The data comression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.

Mib GsmIwf

Values transparent
compressed

Default No default

ATTRIBUTE GsmBc V42bis compressionDirection (p0)

Access Read: All
Write: Illegal

Description This attribute indicates the direction in which V.42bis is active, negotiated at link setup by the data link protocol through Exchange Identification (XID) negotiation of parameter P0 (compression direction). The value used for XID negotiations can be provisioned by component *GsmIwfV42bisProv* attribute *compressionDirection*. Valid values are:
none, No compression is present.
encode, The data sent by the IWF to the other entity is compressed.
decode, The data received by the IWF from the other entity is compressed.
both, The data sent and received by the IWF is compressed.

Mib GsmIwf

Values none
encode
decode
both

Default No default

ATTRIBUTE GsmBc V42bis maximumCodewords (p1)

Access Read: All
Write: Illegal

Description This attribute indicates the maximum number of codewords in the dictionary negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P1 (number of codewords). The value used for XID negotiations can be provisioned by component *GsmIwfV42bisProv* attribute *maximumCodewords*.

Mib GsmIwf

Values Decimal (0..4096)

Default No default

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ATTRIBUTE GsmBc V42bis maximumStringSize (p2)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of characters allowed in a string represented by a codeword negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P2 (maximum string size). The value used for XID negotiations can be provisioned by component *GsmIwfV42bisProv* attribute *maximumStringSize.*
Mib	GsmIwf
Values	Decimal (6..250)
Default	No default

ATTRIBUTE GsmBc V42bis lastDecodeError (lastDecodeErr)

Access	Read: All Write: Illegal
Description	This attribute indicates last error found by the decoder. Error values are: ***none***, No errors found. ***badStepup***, Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). ***codewordEqC1***, Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). ***emptyCodeword***, Receipt of a codeword representing an empty dictionary entry. ***reservedCommand***, Receipt of a reserved command code. ***generalError***, Receipt of any other error. The action taken by V.42bis on detecting an error is provisioned by component *GsmIwfV42bis* attribute *actionOnError.*
Mib	GsmIwf
Values	none badStepup codewordEqC1 emptyCodeword reservedCommand generalError
Default	none

ATTRIBUTE GsmBc V42bis compRatioEncoder

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the

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	data is being compressed. This is the compression ratio achieved by the V.42bis encoder running on the Passport. This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.
Mib	GsmIwf
Values	Decimal (0.00..300.00)
Default	No default

ATTRIBUTE GsmBc V42bis compRatioDecoder

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder at the mobile or Public Switched Telephone Network (PSTN). This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.
Mib	GsmIwf
Values	Decimal (0.00..300.00)
Default	No default

GROUP GsmBc V42bis Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of *V.42bis*.
Mib	GsmIwf

ATTRIBUTE GsmBc V42bis modeChangesEncode (modeChgEncode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mode changes (from transparent to compressed or from compressed to transparent) by the encoder. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis modeChangesDecode (modeChgDecode)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of mode changes (from transparent to compressed or from compressed to transparent) by the decoder. The mode changes are determined by the encoder at the mobile or the Public Switched Telephone Network (PSTN). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis resetsEncode

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets sent by the encoder. A reset is a command code sent by the encoder to force dictionary reinitialization. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis resetsDecode

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets received by the decoder. A reset is a command code sent by the encoder to force dictionary reinitialization. The resets of the decoder are determined by the encoder at the mobile or Public Switched Telephone Network (PSTN). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis reInitializations (reInit)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times V.42bis is reinitialized because of a destructive break (a destructive break is a break that causes data to be discarded) occurring on the error-corrected connection initiatated by either the mobile or Public Switched Telephone Network (PSTN). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis errorsInDecode (errDecode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of errors found by the decoder. The errors could be any of the following: 1.Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). 2. Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). 3. Receipt of a codeword representing an empty dictionary entry. 4. Receipt of a reserved command code. 5. Receipt of any other error. The counter wraps when it exceeds the maximum value. The action taken by V.42bis on detecting any of these errors is provisioned by component *GsmIwfV42bis* attribute *actionOnError.*
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc Layer2RelayCop (L2RCop)

Groups	GROUP GsmBc L2RCop Operational (Oper) GROUP GsmBc L2RCop Statistics (Stats)
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> Layer2RelayCop* This component represents the group of measurements for the GSM Layer 2 Relay Character Oriented Protocol (L2RCOP) established for a GSM IWF call (on the mobile station to the IWF link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc L2RCop Operational (Oper)

Properties	Operational

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Description	This group contains operational attributes that measure the performance of *L2RCop*.
Mib	GsmIwf

ATTRIBUTE GsmBc L2RCop flowControlStateTx (flowControlTx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether flow control is active in the transmit direction (towards the network side) for Layer2 Relay.
Mib	GsmIwf
Values	active inactive
Default	inactive

ATTRIBUTE GsmBc L2RCop flowControlStateRx (flowControlRx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether flow control is active in the receive direction (towards the mobile) for Layer2 Relay.
Mib	GsmIwf
Values	active inactive
Default	inactive

GROUP GsmBc L2RCop Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of *L2RCop*.
Mib	GsmIwf

ATTRIBUTE GsmBc L2RCop bytesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of data bytes relayed by Layer2 Relay in the transmit direction (towards the network). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE GsmBc L2RCop bytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of data bytes relayed by Layer2 Relay in the receive direction (towards the mobile). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc L2RCop breakCountRx (breakRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of breaks received from the mobile. A break received from the mobile results in the V.42bis function being reset and the break condition forwarded to the network. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc L2RCop breakCountTx (breakTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of breaks transmitted to the mobile (a break was received from the network). A break received from the network results in the V.42bis function being reset and the break condition forwarded to the mobile. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc UpperRelay

Groups	GROUP GsmBc UpperRelay Operational (Oper) GROUP GsmBc UpperRelay Statistics (Stats)
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> UpperRelay* This component represents the group of measurements for the Upper Relay function established for a GSM IWF call (internally between the two

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*GsmIwfBearerChannel*s involved in a call) from this particular *GsmIwfBearerChannel* perspective.
Note that this component is present only if the current (or most recent call) involved this protocol.

Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc UpperRelay Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay*.
Mib	GsmIwf

ATTRIBUTE GsmBc UpperRelay bufferSize

Access	Read: All Write: Illegal
Description	This attribute indicates the size of the transmit and receive flow control buffers.
Mib	GsmIwf
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE GsmBc UpperRelay flowControlStateTx (flowControlTx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the transmit flow control is active or not.
Mib	GsmIwf
Values	active inactive
Default	inactive

ATTRIBUTE GsmBc UpperRelay flowControlStateRx (flowControlRx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the receive flow control is active or not.
Mib	GsmIwf

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Values	active inactive
Default	inactive

GROUP GsmBc UpperRelay Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay.*
Mib	GsmIwf

ATTRIBUTE GsmBc UpperRelay framesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the transmit direction. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc UpperRelay framesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the receive direction. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc UpperRelay unacknowledgedFrames (unackFrm)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of current frames sent that have not been acknowledged.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - GsmBc

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Nortel Multiservice Switch 7400, 15000, 20000

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COMPONENT GsmIwfCallServer (GsmCs)

Instance	Decimal (1..8191)
Groups	GROUP GsmCs Provisioned (Prov) GROUP GsmCs CustomerIdentifierData (CidData) GROUP GsmCs OsiState (State) GROUP GsmCs Statistics (Stats)
Scope	Application
Description	*GsmCs/<trunkGrp>* The *GsmIwfCallServer* component represents an instance of a call manager for Global System for Mobile communications (GSM) InterWorking Function (IWF) calls on this node. The *GsmIwfCallServer* provides a mechanism to segregate call resources (*GsmIwfBearerChannels)* and maintenance activities for the *GsmIwfBearerChannels* associated with that *GsmIwfCallServer*. The instance value *trunkGrp* is an external identifier for the trunk group configured at the Mobile Services-switching Center (MSC) connected to this node and associated with this *GsmIwfCallServer* instance. This component is specific to the ***gsmIwfCallServer*** feature of the

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wirelessIwf application. Refer to NTP 411-5221-520 “GPP Interworking Function Data Guide” for details on its usage.

Mib	GsmIwf
Subcomponents	COMPONENT GsmCs RadioLinkProtocol (Rlp) COMPONENT GsmCs Fax COMPONENT GsmCs V42 COMPONENT GsmCs V42bis
Opt. Subcomp.	COMPONENT GsmCs LogicalProcessor (Lp)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP GsmCs Provisioned (Prov)

Properties	Provisioned
Description	This group contains general provisioning data for the *GsmIwfCallServer* that does not fit within other provisioning groups.
Mib	GsmIwf

ATTRIBUTE GsmCs commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, this attribute specifies the name of the trunk group at the Mobile Services-switching Center (MSC) configured for this *GsmIwfCallServer* plus any other commentary information.
Mib	GsmIwf
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE GsmCs mscIpAddress (ipAddr)

Access	Read: All Write: Configuration
Description	This attribute specifies the Internetwork Protocol (IP) Address of the Mobile Services-switching Center (MSC) Control Module (CM) that is permitted to set up GSM InterWorking Function (IWF) calls using this *GsmIwfCallServer*. This address must be specified in order for this *GsmIwfCallServer* to provide service. If call setups are attempted from an

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	MSC which does not have this address, those calls are rejected. The *callsRequested* statistic of this *GsmIwfCallServer* is incremented, but the *callsSetup* statistic of this *GsmIwfCallServer* is not, when call setup attempts are rejected. Also, at the MSC, appropriate call failure logs are generated.
Mib	GsmIwf
Values	IP address
Default	0.0.0.0

ATTRIBUTE GsmCs virtualRouterName (vr)

Access	Read: All Write: Configuration
Criticality	Component
Description	This attribute specifies the *VirtualRouter* that this *GsmIwfCallServer* uses to transmit signaling messages to and receive signaling messages from the Mobile Services-switching Center (MSC) that utilizes this *GsmIwfCallServer*.
Mib	GsmIwf
Values	The name of the component
Default	No default

ATTRIBUTE GsmCs voiceLaw (encoding)

Access	Read: All Write: Configuration
Description	This attribute specifies the voice law to be established for the IWF to Public Switched Telephone Network (PSTN) modem link for calls established by this *GsmIwfCallServer*. Valid values are: ***aLaw***, a protocol for encoding voice-band audio, Pulse Code Modulation (PCM). ***muLaw***, a protocol for encoding voice-band audio, PCM. Note that this value must match the voice law used at the Mobile Services-switching Center (MSC) connected to this *GsmIwfCallServer*.
Mib	GsmIwf
Values	aLaw muLaw
Default	aLaw

GROUP GsmCs CustomerIdentifierData (CidData)

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	GsmIwf

ATTRIBUTE GsmCs customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	GsmIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP GsmCs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	GsmIwf

ATTRIBUTE GsmCs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: GsmIwf

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE GsmCs operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: GsmIwf

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE GsmCs usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: GsmIwf

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Values	idle active (activ) busy
Default	idle

GROUP GsmCs Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of this particular *GsmIwfCallServer*.
Mib	GsmIwf

ATTRIBUTE GsmCs currentCalls (currCall)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active calls currently serviced by this particular *GsmIwfCallServer*.
Mib	GsmIwf
Values	Decimal (0..2047)
Default	0

ATTRIBUTE GsmCs callsRequested (callsReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF call setup requests received at this particular *GsmIwfCallServer* from the Mobile Services-switching Center (MSC). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs callsSetup (callsSet)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls successfully setup by this particular *GsmIwfCallServer*. A call is considered setup when the IWF-Setup-Request message is received, indicating a request for a data communications service, and the IWF has successfully allocated the necessary resources to fulfill the request. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs callsActivated (callsAct)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls successfully activated by this particular *GsmIwfCallServer*. A call is considered activated when the IWF receives an IWF-Activate-Request, indicating that the call parties are connected and that data communications must begin. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs callsReleasedNormal (callsRlsdNor)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls that have completed successfully on this particular *GsmIwfCallServer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs callsReleasedAbnormal (callsRlsdAbnor)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls that have been released due to error conditions at this particular *GsmIwfCallServer* or one if its *GsmIwfBearerChannel*s. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs channelConfigChanges (chanConfig)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of channel configuration requests from the Mobile-services Switching Center (MSC) that have been received at this *GsmIwfCallServer* and have resulted in successful responses. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs channelModeModifyRequests (cmm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of channel mode modify requests that have been generated by fax calls serviced by this particular *GsmIwfCallServer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs statusMessagesRx (statusMsgRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of status messages received from the Mobile Services-switching Center (MSC). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs erroredMipFrames (errMipFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MSC/IWF Interface Protocol (MIP) messages received from the Mobile Services-switching Center (MSC) that were in error. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

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COMPONENT GsmCs RadioLinkProtocol (Rlp)

Instance	half6kRate (half6k) full6kRate (full6k) full12kRate (full12k) full14k5Rate (full14k5)
Groups	GROUP GsmCs Rlp Provisioned (Prov)
Scope	Application
Description	*GsmCs/<trunkGrp> RadioLinkProtocol/<radio-channel-type>* This component represents a group of Radio Link Protocol (RLP) instances, indexed by radio channel type. Valid radio channel types are: ***half6kRate***, Half rate channel at 6 kbit/s. ***full6kRate***, Full rate channel at 6 kbit/s. ***full12kRate***, Full rate channel at 12 kbit/s. ***full14k5Rate***, Full rate channel at 14.5 kbit/s. Many RLP attributes are dependent on the frame rate and frame size, that is dictated by the radio channel type. When a *GsmIwfCallServer* is added, a *RadioLinkProtocol* instance is added automatically for each possible instance value. The attributes are set to default values, dependent on the radio channel type of the component instance.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmCs Rlp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the Radio Link Protocol (RLP) parameters used for the call set up by this particular *GsmIwfCallServer*. Changes to these attributes do not effect existing calls.
Mib	GsmIwf

ATTRIBUTE GsmCs Rlp highestVersion (highVer)

Access	Read: All Write: Service
Description	This attribute specifies the highest version of the Radio Link Protocol (RLP) protocol supported on this *GsmIwfCallServer*. Valid values are: ***0***, Single-link basic version. ***1***, Single-link extended version (for example, extended by data compression). During the Exchange Information (XID) negotiation at the start of the call, both RLP entities (mobile station and IWF) can agree to use a particular

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	RLP version. The IWF attempts to negotiate the value specified by this attribute. Note that if V.42bis data compression is be established between the mobile station and IWF, both entities must agree to use version 1 (or higher). The default value for *highestVersion* is 1 to enable support for V.42bis data compression. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *highestVersion*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0..1)
Default	1

ATTRIBUTE GsmCs Rlp iwfToMsWindowSize (iwfMsWs)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of sequentially numbered Information (I) frames that may be outstanding (that is, unacknowledged) at any given time from the IWF to the mobile station. GSM specification 4.22 defines the range as 0 to 61. During the Exchange Information (XID) negotiation, both Radio Link Protocol (RLP) entities (mobile station and IWF) can agree to use a specific window size. The IWF attempts to negotiate to the value specified by this attribute. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *iwfToMsWindowSize.* Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0..61)
Default	61

ATTRIBUTE GsmCs Rlp msToIwfWindowSize (msIwfWs)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of sequentially numbered Information (I) frames that may be outstanding (that is, unacknowledged) at any given time from the mobile station to IWF. GSM specification 4.22 defines the range as 0-61. During the Exchange Information (XID) negotiation, both Radio Link Protocol (RLP) entities (mobile station and IWF) can agree to use a specific window size. The IWF attempts to negotiate to the value specified by this attribute. The negotiated value can be viewed in the component GsmIwf*RlpOp* attribute *msToIwfWindowSize*. Changes to this attribute do not effect existing calls.

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Mib	GsmIwf
Values	Decimal (0..61)
Default	61

ATTRIBUTE GsmCs Rlp t1AckTimer (t1)

Access	Read: All Write: Service
Description	This attribute specifies the time in milliseconds within which an acknowledgment of a sent frame must be received. Once this timer expires, the transmitting Radio Link Protocol (RLP) entity shall assume that the frame was lost. During the Exchange Information (XID) negotiation, both RLP entities (mobile station and IWF) can agree to use specific value for this timer (T1). The IWF attempts to negotiate to the value specified by this attribute. The default value for *t1AckTimer* is 520 msec for the ***full14k5Rate*** instance of this component, 480 msec for ***full12kRate,*** 540 msec for ***full6kRate***, and 780 msec for ***half6kRate***. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *t1AckTimer.* Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (380..1020)
Units	msec
Default	No default

ATTRIBUTE GsmCs Rlp t2AckDelayTimer (t2)

Access	Read: All Write: Service
Description	This attribute specifies the maximum time in milliseconds the receiving Radio Link Protocol (RLP) entity shall wait before sending an acknowledgment for a received information frame. During the Exchange Information (XID) negotiation, both RLP entities (mobile station and IWF) can agree to use specific value for this timer (T2). The IWF attempts to negotiate to the value specified by this attribute. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *t2AckDelayTimer*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (10..79)
Units	msec
Default	50

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ATTRIBUTE GsmCs Rlp n2RetransmitCount (n2)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of times a Radio Link Protocol (RLP) entity shall retransmit an individual frame following the expiry of timer T1. During the Exchange Information (XID) negotiation, both RLP entities (mobile station and InterWorking Function (IWF)) can agree to use specific value for N2 (Retransmit Count). The IWF attempts to negotiate to the value specified by this attribute. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *n2RetransmitCount*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (1..255)
Default	6

COMPONENT GsmCs Fax

Groups	GROUP GsmCs Fax Provisioned (Prov)
Scope	Application
Description	*GsmCs/<trunkGrp> Fax* This component represents a group of fax provisioning attributes. These attributes specify various default settings for aspects of the fax protocol, which may be used for a GSM IWF call.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmCs Fax Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the fascimile protocol (T.30 and GSM 03.45) for this particular *GsmIwfCallServer*. Changes to these attributes do not effect existing calls.
Mib	GsmIwf

ATTRIBUTE GsmCs Fax t1CalledToneTimer (t1)

Access	Read: All Write: Configuration

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Description	This attribute specifies the delay to generate a Called (CED) tone at the IWF after the called station is connected to the line for mobile terminated calls. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (1.50..3.00)
Units	seconds
Default	1.80

COMPONENT GsmCs V42

Groups	GROUP GsmCs V42 Provisioned (Prov)
Scope	Application
Description	*GsmCs/<trunkGrp> V42* This component represents a group of ITU-T V.42 error correcting data link protocol provisioning attributes. These attributes specify various default settings for aspects of the V.42 protocol, that may be used for a GSM IWF call for the IWF to Public Switched Telephone Network (PSTN) modem link.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmCs V42 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the V.42 protocol for this particular *GsmIwfCallServer*. Changes to these attributes do not effect existing calls.
Mib	GsmIwf

ATTRIBUTE GsmCs V42 t400DetectTimer (t400)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF waits for an Originator Detection Pattern (ODP) or Answerer Detection Pattern (ADP). ODP/ADP is a series of special bit patterns used during the call setup procedures. If the IWF is the Originator of the call, it starts sending ODP patterns and waits for an ADP for the duration of T400 milliseconds from the answerer at call setup time. If the IWF is the Answerer of the call, it waits for an ODP for T400 seconds from the originator and if it receives during that time it sends an ADP

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	pattern to the originator at the call setup time. Since both sides operate with different values of T400 timer, a higher value increases the chance of a successful call setup. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0.75..2.54)
Units	seconds
Default	2.00

ATTRIBUTE GsmCs V42 t401AckTimer (t401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF waits for an acknowledgment before retransmitting a frame. Since information about the T401 timer is not carried in the Exchange Identification (XID) negotiations at call setup time, both sides operate with different timer values. The value for T401 depends on many factors, such as propagation delay or frame processing time. A frame is retransmitted up to N400 times if the timer T401 expires before an acknowledgment for a frame is actually received. The performance of the data link layer can be impacted by the value of this timer as retransmissions of frames occur on expiry of timer T401. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0.50..9.00)
Units	seconds
Default	4.00

ATTRIBUTE GsmCs V42 t402AckDelayTimer (t402)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF may wait following the receipt of any frame requiring a reply before it initiates transmission of an appropriate reply in order to ensure that the reply frame is received by the remote error-correcting entity prior to expiration of the T401 timer of the remote error-correcting entity. Since information about the T402 timer is not carried in the Exchange Identification (XID) negotiations at call setup, both sides operate with different timer values. If this timer expires, then the reply that would have been returned prior to its expiration is not sent. The performance of the data link layer can be impacted by the value of this timer as retransmissions of frames occur on expiry of timer T401. For better performance, a value of *t402AckDelayTimer* (T402) equal to half the value of *t401AckTimer* (T401)

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	is recommended. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0.25..4.50)
Units	seconds
Default	2.00

ATTRIBUTE GsmCs V42 t403IdleProbeTimer (t403)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF allows to elapse without frames being exchanged. The link is permitted to remain idle with no frames being exchanged on the data link. Upon expiry of this timer, the IWF polls its peer for status. Since information about the T403 timer is not carried in the Exchange Identification (XID) negotiations at call setup time, both sides operate with different timer values. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (30..90)
Units	seconds
Default	60

ATTRIBUTE GsmCs V42 txN401FrameSize (txN401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of octets that can be carried in the information field of an Information (I) frame, Exchange Identification (XID) frame, and a Unnumbered Information (UI) frame from the IWF to the remote entity. The default value is 128 octets, and no XID negotiations required for *txN401FrameSize*. If the value for *txN401FrameSize* value is set to other than 128 octets, then XID frames are exchanged to negotiate a value. The value provided for *txN401FrameSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 128 is specified, then the IWF negotiates or attempts to negotiate a value between the 128 (as a minimum) and the given value (as a maximum). If a value less than 128 is specified, then the IWF attempts to negotiate a value between the given value (as a minimum) and 128 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to 128 is recommended. The negotiated value can be viewed in the component *GsmIwfV42Op* attribute *txN401FrameSize*. Changes to this attribute do not effect existing calls.

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Mib	GsmIwf
Values	Decimal (1..255)
Units	octets
Default	128

ATTRIBUTE GsmCs V42 rxN401FrameSize (rxN401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of octets that can be carried in the information field of an Information (I) frame, Exchange Identification (XID) frame, and a Unnumbered Information (UI) frame from the remote entity to the IWF. The default value is 128 octets, and no XID negotiations are required for *rxN401FrameSize*. If the value set for *rxN401FrameSize* is other than 128, XID frames are exchanged to negotiate a value. The value provided for *rxN401FrameSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 128 is specified, then the IWF attempts to negotiate for a value between 128 (as a minimum) and the given value (as a maximum). If a value less than 128 value is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 128 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to the default is recommended. The negotiated value can be viewed in the component *GsmIwfV42Op* attribute *rxN401FrameSize*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (1..255)
Units	octets
Default	128

ATTRIBUTE GsmCs V42 txKwindowSize (txK)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the IWF to the remote entity. The default value is 15 frames, and if this value is used then no Exchange Identification (XID) negotiations are required for *txKwindowSize*. If the value set for *txKwindowSize* is other than 15, then XID frames are exchanged to negotiate a value. The value provided for *txKwindowSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 15 is specified, then the IWF attempts to negotiate a value between 15 (as a minimum) and the given value (as a

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	maximum). If a value less than 15 is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 15 (as a maximum). Any value can be specified as long at it is within the provisionable limits. However, a value equal to or close to the default is recommended. The negotiated value can be viewed in the component *GsmIwfV42Op* attribute *txKwindowSize*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (1..255)
Default	15

ATTRIBUTE GsmCs V42 rxKwindowSize (rxK)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the remote entity to the IWF. The default value is 15 frames, and if this value is used then no Exchange Identification (XID) negotiations are required for *rxKwindowSize*. If the value set for rxKwindowSize is other than 15, then XID frames are exchanged to negotiate a value. The value provided for *rxKwindowSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 15 is specified, then the IWF attempts to negotiate a value between 15 (as a minimum) and the given value (as a maximum). If a value less than 15 is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 15 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to the default is recommended. The negotiated value can be viewed in the component *GsmIwfV42Op* attribute *rxKwindowSize*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (1..255)
Default	15

ATTRIBUTE GsmCs V42 n400RetransLimit (n400)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of times the IWF retransmits a frame upon expiry of *t401AckTimer* before appropriate recovery action is taken. Information about N400 (Retransmission Limit) is not carried in the Exchange Identification (XID) negotiation at call setup time so both sides

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operate with different N400 values.
Changes to this attribute do not effect existing calls.

Mib	GsmIwf
Values	Decimal (0..255)
Default	10

COMPONENT GsmCs V42bis

Groups	GROUP GsmCs V42bis Provisioned (Prov)
Scope	Application
Description	*GsmCs/<trunkGrp> V42bis* This component represents a group of ITU-T V.42bis data compression protocol provisioning attributes. These attributes specify various default settings for aspects of the V.42bis protocol, which may be used in a GSM IWF call on the mobile station to IWF link and/or the IWF to Public Switched Telephone Network (PSTN) modem link.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmCs V42bis Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the V.42bis data compression protocol parameters used for the calls set up by this particular *GsmIwfCallServer*. Changes to these attributes do not effect existing calls.
Mib	GsmIwf

ATTRIBUTE GsmCs V42bis compressionDirection (p0)

Access	Read: All Write: Service
Description	This attribute specifies the V.42bis data compression direction to be supported. The value for compression direction is negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P0 (compression direction). During XID negotiation of parameter P0, both sides (IWF and mobile or IWF and Public Switched Telephone Network (PSTN)) agree on the compression direction. Valid values are: ***none***, No compression is present. ***encode***, The data sent by the IWF to the other entity is compressed. ***decode***, The data received by the IWF from the other entity is

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compressed.
both, The data sent and received by the IWF is compressed.
The negotiated value can be viewed in the component GsmIwf*V42bisOp* attribute *compressionDirection.* Changes to this attribute do not effect existing calls.

Mib GsmIwf

Values
none
encode
decode
both

Default both

ATTRIBUTE GsmCs V42bis maximumCodewords (p1)

Access
Read: All
Write: Service

Description This attribute specifies the maximum number of V.42bis codewords the IWF supports. A codeword is a binary number that represents a string of characters in compressed form. V.42bis keeps a dictionary of codewords for each compression direction. During Exchange Identification (XID) negotiation of parameter P1 (number of codewords), both sides (IWF and mobile or IWF and Public Switched Telephone Network (PSTN)) agree on the total number of codewords in the dictionaries. Changes to this attribute impact the compression ratio for the encoder (component *GsmV42BisOp* attribute *compRatioEncoder*). Changes also impact the amount of memory used (more memory is used when increasing the attribute). The gain in performance obtained from the selection of a larger dictionary may be offset by the larger codeword size needed, and for certain types of data, better performance may be obtained by using a smaller dictionary.
The negotiated value can be viewed in the component GsmIwf*V42bisOp* attribute *maximumCodewords* . Changes to this attribute do not effect existing calls.

Mib GsmIwf

Values Decimal (512; 1024; 2048; 4096)

Default 2048

ATTRIBUTE GsmCs V42bis maximumStringSize (p2)

Access
Read: All
Write: Service

Description This attribute specifies the maximum number of characters allowed in a string represented by a codeword that the IWF supports. Each codeword in a V.42bis dictionary represents a string of characters. During Exchange Identification (XID) negotiation of parameter P2 (maximum string size), both sides (IWF and mobile or IWF and Public Switched Telephone Network (PSTN)) agree on the maximum string length to be used in the dictionaries. Changes to this attribute impact the compression ratio for the

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encoder (component *GsmIwfV42bisOp* attribute *compRatioEncoder*). The negotiated value can be viewed in the component GsmIwf*V42bisOp* attribute *maximumStringSize*. Changes to this attribute do not effect existing calls.

Mib	GsmIwf
Values	Decimal (6..250)
Default	20

ATTRIBUTE GsmCs V42bis actionOnError (actOnErr)

Access	Read: All Write: Service
Description	This attribute specifies whether or not V.42bis takes down the call or resets the link when any of the following errors occur: 1.Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). 2. Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). 3. Receipt of a codeword representing an empty dictionary entry. 4. Receipt of a reserved command code. 5. Receipt of any other error. If the value is ***resetLink***, the error corrected connection and V.42bis dictionaries are reset. Some data is lost but the call continues. If the value is ***takeDownCall***, the call is taken down. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	resetLink takeDownCall
Default	resetLink

COMPONENT GsmCs LogicalProcessor (Lp)

Instance	Decimal (0..15)
Groups	GROUP GsmCs Lp Operational (Oper)
Scope	Application
Description	*GsmCs/<trunkGrp> LogicalProcessor/n* The *LogicalProcessor* component represents a logical processor that may be linked to this *GsmIwfCallServer*. A *GsmIwfBearerChannel* is indirectly linked to this *LogicalProcessor* by way of the *Framer component.* This

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component must be added to the *GsmIwfCallServer* (and the change activated) prior to adding the *GsmIwfBearerChannel*s.

Mib GsmIwf

Common Verbs
Help
List
Display
Add
DELete

GROUP GsmCs Lp Operational (Oper)

Properties Operational

Description This group contains operational attributes pertaining to information about *GsmIwfBearerChannels* and logical processors associated with a *GsmIwfCallServer* from a high-level view.

Mib GsmIwf

ATTRIBUTE GsmCs Lp configuredBearerChannels (configBc)

Access Read: All
Write: Illegal

Description This attribute indicates the number of *GsmIwfBearerChannel* components provisioned for the Logical Processor represented by this component.

Mib GsmIwf

Values Decimal (0..124)

Default No default

ATTRIBUTE GsmCs Lp activeCalls (actCalls)

Access Read: All
Write: Illegal

Description This attribute indicates the number of *GsmIwfBearerChannel* components currently active on this *LogicalProcessor.*

Mib GsmIwf

Values Decimal (0..124)

Default No default

ATTRIBUTE GsmCs Lp assignedCapacity (assgnCap)

Access Read: All
Write: Illegal

Description This attribute indicates what percentage (0 to 100%) of a given *LogicalProcessor* has been reserved for the data calls which are currently active. When the *assignedCapacity* reaches 100%, no new calls are

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	established on the given *LogicalProcessor*. During the life of a call, the compute requirements will vary. The compute capacity required for a given call type depends on the type of call established including such factors as connection type, data compression, user rate, error correction, flow control; therefore, at call establishment the compute capacity is added to the *assignedCapacity* for a *LogicalProcessor*. When the call is released, it's compute capacity is subtracted from the assigned capacity for the Lp.The *GsmIwfCallServer* uses this information to balance the distribution of data calls across the logical processors.
Mib	GsmIwf
Values	Decimal (0..100)
Default	No default

ATTRIBUTE GsmCs Lp modemsSupported (modemSup)

Access	Read: All Write: Illegal
Description	This attribute indicates if modems are supported with this *LogicalProcessor*.
Mib	GsmIwf
Values	yes no
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - GsmCs

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Hg

NN10600-060

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COMPONENT HuntGroup (Hg)

Instance	Decimal (1..65535)
Groups	GROUP Hg CustomerIdentifierData (CidData) GROUP Hg NsapAddress GROUP Hg Provisioned (Prov) GROUP Hg OsiState (State) GROUP Hg Operational
Scope	Application
Description	*HuntGroup/n* The *HuntGroup* component provides a hunt group capability for switched calls (SVCs). A hunt group is a single DNA used to represent a group of service DNAs. A customer calling the DNA of the hunt group receives the benefits of higher capacity and availability as calls are spread across several lines.
Mib	HuntGroup
Subcomponents	COMPONENT Hg HuntGroupMember (HgM)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Hg CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	HuntGroup

ATTRIBUTE Hg customerIdentifier (cid)

Access	Read and write

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Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	HuntGroup
Values	Decimal (0; 1..8191)
Default	0

GROUP Hg NsapAddress

Properties	Provisioned
Description	This group contains attributes common to all NSAP format addresses.
Mib	HuntGroup

ATTRIBUTE Hg address

Access	Read and write
Description	The *address* attribute specifies the numbering plan and digits which form a unique DNA identifier of the hunt group. The format of the *address* attribute is <numberingPlan>.<digits> where numbering plan is x for X.121 and e for E.164. An example X.121 address is x.12345678.
Mib	HuntGroup
Values	String (1..17, NativeAddressWith15DigitX121)
Default	No default

GROUP Hg Provisioned (Prov)

Properties	Provisioned
Description	The *Provisioned* group contains the provisioned attributes of the hunt group.
Mib	HuntGroup

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ATTRIBUTE Hg logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the hunt group process will execute. The *Lp/n Eng Hgs* component contains statistics for all hunt groups on the LP.
Mib	HuntGroup
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Hg selectionPolicy

Access	Read and write
Description	The *selectionPolicy* attribute specifies the algorithm used to select a hunt group member. A value of ***startFromZero*** means that on a new call, the first available member starting from the member with the lowest instance value is selected. Subsequent hunts for the same call select the first available member starting from the previously chosen member. This algorithm is used when it is desirable to have the first member receive the majority of the calls and subsequent members only receive calls in overflow situations. A value of ***rotary*** means that on a new call, the first available member is selected starting from the member which received the last new call. Subsequent hunts for the same call select the first available member starting from the previously chosen member. This algorithm is used when it is desirable to loadspread the calls equally across the members. A value of ***mostAvailable*** means that on a new call, the most available member is selected based on the availability information received from the member. Subsequent hunts for the same call select the most available member starting from the previously chosen member. This algorithm is used when it is desirable to send each call to the member which has the highest probability of connecting it.
Mib	HuntGroup
Values	startFromZero rotary mostAvailable
Default	mostAvailable

ATTRIBUTE Hg maxHuntAttempts

Access	Read and write

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Description	The *maxHuntAttempts* attribute specifies the maximum attempts allowed to hunt the call. Hunting ceases if either this maximum is exceeded or the member list is exhausted.
Mib	HuntGroup
Values	Decimal (1..63)
Default	63

ATTRIBUTE Hg appendSuffixDigits

Access	Read and write
Description	The *appendSuffixDigits* attribute specifies how suffix called address digits are handled. Suffix called address digits are any trailing digits, signalled in a call, beyond the provisioned hunt group *address*. If this attribute is set to ***yes***, suffix digits are appended to the member *address* before the call is forwarded to the member. If it is set to ***no***, suffix digits are not appended to the member *address*.
Mib	HuntGroup
Values	no yes
Default	yes

GROUP Hg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	HuntGroup

ATTRIBUTE Hg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — HuntGroup

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Hg operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — HuntGroup

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Hg usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — HuntGroup

Values — idle
active (activ)
busy

Default — idle

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GROUP Hg Operational

Properties	Operational
Description	The *Operational* group contains the operational attributes of the hunt group.
Mib	HuntGroup

ATTRIBUTE Hg huntAttempts

Access	Read only
Description	This attribute counts the total number of hunt attempts made by the hunt group. The count includes both initial and subsequent hunt attempts. This count is contained within the *huntAttempts* attribute of the *Lp/n Eng Hgs* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg failedCalls

Access	Read only
Description	This attribute counts the number of calls which could not be connected by any of the hunt group members. This could occur if the hunt group is locked or has exhausted its member list. If a call cannot be connected by the hunt group it is sent to call redirection. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg initialHuntAttempts

Access	Read only
Description	This attribute counts the number of new (non-hunted) calls received by the hunt group which are forwarded to a member. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg availabilityUpdates

Access	Read only

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Description	This attribute counts the number of availability update packets received by the hunt group from its members. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg maxAddrLenExceeded

Access	Read only
Description	This attribute counts the number of times a member could not be selected to receive a call with suffix address digits because its DNA length would exceed the maximum of 14 digits with the suffix digits appended. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg badPackets

Access	Read only
Description	This attribute counts the number of unrecognizable packets received by the hunt group and discarded. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

COMPONENT Hg HuntGroupMember (HgM)

Instance	Decimal (1..63)
Groups	GROUP Hg HgM Provisioned (Prov) GROUP Hg HgM OsiState (State) GROUP Hg HgM Operational
Scope	Application

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Description	*Hg/n HuntGroupMember/n* The *HuntGroupMember* component defines an instance of a hunt group member.
Mib	HuntGroup
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Hg HgM Provisioned (Prov)

Properties	Provisioned
Description	The *Provisioned* group contains the provisioned attributes of the hunt group member.
Mib	HuntGroup

ATTRIBUTE Hg HgM address

Access	Read and write
Description	The *address* attribute specifies the numbering plan and digits which form a unique DNA identifier of the hunt group member. The format of the *address* attribute is <numberingPlan>.<digits> where numbering plan is x for X.121 and e for E.164. An example X.121 address is x.12345678.
Mib	HuntGroup
Values	String (1..17, NativeAddressWith15DigitX121)
Default	No default

GROUP Hg HgM OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	HuntGroup

ATTRIBUTE Hg HgM adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	HuntGroup
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Hg HgM operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	HuntGroup
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Hg HgM usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib HuntGroup

Values
idle
active (activ)
busy

Default idle

GROUP Hg HgM Operational

Properties Operational

Description The *Operational* group defines operational attributes associated with the *HuntGroupMember* component.

Mib HuntGroup

ATTRIBUTE Hg HgM availability

Access Read and write

Description This attribute indicates the current availability of the member.
The higher the value, the more available the member is perceived to be. A value of ***0*** indicates the member is unavailable.

A member must be considered 'available' by the hunt group in order to receive a call, regardless of the selection policy in use. The hunt group members report whether or not they are available to receive calls to the hunt group. Some services base their availability on unused logical channels, others on bandwidth or memory capacity.

During initialization, the hunt group assumes all of its members are equally available and sets their *availability* value to the maximum of ***4095***. Similarly, a new hunt group member added to an existing hunt group has its *availability* value initialized to ***4095***. This ensures that members which have not reported their availability to the hunt group are tried in order to trigger the member to report its true availability.

The *availability* of a member can change in the following ways:
- Hunt group members can report their availability to the hunt group using a DPRS availability packet.
- A network operator can temporarily change the value by the *Set* command. This change remains in effect until changed again by any of these ways.
- The hunt group resets a member's *availability* to the maximum of ***4095*** if it has been ***0*** for at least 2.5 hours. This ensures that 'lost' availability information does not prevent a member from returning to service.

Mib HuntGroup

Values Decimal (0..4095)

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Default	4095

ATTRIBUTE Hg HgM availabilityUpdates

Access	Read only
Description	This attribute counts the number of availability update packets received by the hunt group member. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg HgM callsRefused

Access	Read only
Description	This attribute counts the number of call packets which were returned to the hunt group by the member because it could not connect the call. If this counter increments frequently, it could indicate a problem with the member's reporting of its availability to the hunt group or an incompatibility in the call options. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Hg

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Htds

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COMPONENT HdlcTransparentDataService (Htds)

Instance	Decimal (1..65535)
Groups	GROUP Htds CustomerIdentifierData (CidData) GROUP Htds IfEntryProv (IfEntry) GROUP Htds OperationalStatus (OperStatus) GROUP Htds OsiState (State)
Scope	Application
Description	*HTDS/<n>* The HDLC Transparent Data Service (HTDS) component defines the characteristics of an instance of the HDLC transparent data service. One instance of this component is required by each DS1, E1, V.35 or V.11 channel that is offering HDLC transparent traffic. The instance number is arbitrary.
Mib	HdlcTransparent
Subcomponents	COMPONENT Htds Framer (Framer) COMPONENT Htds PermanentLogicalConnection (Plc)
Dyn. Subcomp.	COMPONENT Htds LogicalConnection (LCo)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Htds CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

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Mib	HdlcTransparent

ATTRIBUTE Htds customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	HdlcTransparent
Values	Decimal (0; 1..8191)
Default	0

GROUP Htds IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	HdlcTransparent

ATTRIBUTE Htds ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	HdlcTransparent
Values	up down testing
Default	up

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ATTRIBUTE Htds ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	HdlcTransparent
Values	Decimal (1..65535)
Default	No default

GROUP Htds OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	HdlcTransparent

ATTRIBUTE Htds snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	HdlcTransparent
Values	up down testing
Default	up

GROUP Htds OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	HdlcTransparent

ATTRIBUTE Htds adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	HdlcTransparent
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Htds operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	HdlcTransparent
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Htds usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	HdlcTransparent
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Htds availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	HdlcTransparent
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Htds proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — HdlcTransparent

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Htds controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	HdlcTransparent
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Htds alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	HdlcTransparent
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Htds standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — HdlcTransparent

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE Htds unknownStatus (osiUnknw)

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — HdlcTransparent

Values
false
true

Default — false

COMPONENT Htds Framer (Framer)

Groups
GROUP Htds Framer Provisioned (Prov)
GROUP Htds Framer LinkOptions (Link)
GROUP Htds Framer OsiState (State)

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GROUP Htds Framer Statistics (Stats)
GROUP Htds Framer LinkUtilization (Util)

COLLECTED STATS HdlcTransparentDataService Framer

Scope	Application
Description	*Htds/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).
Mib	HdlcTransparent
Common Verbs	Help List Display

GROUP Htds Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	HdlcTransparent

ATTRIBUTE Htds Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

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Mib	HdlcTransparent
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Htds Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	HdlcTransparent

ATTRIBUTE Htds Framer dataInversion

Access	Read and write
Criticality	Process
Description	This attribute specifies whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is ***on***, the incoming data bits are also inverted when frames are received from the link before being processed. This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density. Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.
Mib	HdlcTransparent
Values	off on
Default	off

ATTRIBUTE Htds Framer nonOctetData

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the data being received has the potential to be non-octet aligned. If it is set to ***yes***, then neither CRC checking and generation or abort detection will be functional.
Mib	HdlcTransparent
Values	no yes
Default	no

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ATTRIBUTE Htds Framer frameCrcType

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of CRC used. The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. ***noCrc*** means that CRC is not used.
Mib	HdlcTransparent
Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE Htds Framer flagsBetweenFrames

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of flags that are inserted between frames sent to the link interface.
Mib	HdlcTransparent
Values	Decimal (1..16)
Default	1

ATTRIBUTE Htds Framer lineSignalTransport (lst)

Access	Read and write
Criticality	Process
Description	This attribute specifies how modem status lead information on a V.35 or V.11 port is handled. When the value of the attribute is set to ***on***, line signal changes are passed transparently through the network to the remote end of the connection, where they are passed out on that end's outgoing leads. When the value of the attribute is set to ***off***, line signal changes are not transparently passed through the network. Both ends must be provisioned to support this function for line signal transport to work. It is highly recommended that line signal interpretation is set to "don't care" on the associated *vport* component (that is, *vport* attributes *readyLineState* and *dataTransferLineState)*.

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Mib	HdlcTransparent
Values	off on
Default	off

GROUP Htds Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	HdlcTransparent

ATTRIBUTE Htds Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	HdlcTransparent
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Htds Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	HdlcTransparent
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Htds Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	HdlcTransparent
Values	idle active (activ) busy
Default	idle

GROUP Htds Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	HdlcTransparent

ATTRIBUTE Htds Framer aborts

Access	Read only
Description	This attribute counts the aborts received. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Htds Framer crcErrors

Access	Read only
Description	This attribute counts the frames with CRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer lrcErrors

Access	Read only
Description	This attribute counts the frames with LRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer nonOctetErrors

Access	Read only
Description	This attribute counts the frames that were non octet aligned. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer overruns

Access	Read only
Description	This attribute counts the frames received from the link for which overruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Htds Framer underruns

Access	Read only
Description	This attribute counts the frames transmitted to the link for which underruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer largeFrmErrors

Access	Read only
Description	This attribute counts the frames received that were too large. The frame was longer than 8 kbytes or it contained more than the 255 block hardware limit. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer frmToIf

Access	Read only
Description	This attribute counts the frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds Framer frmFromIf

Access	Read only
Description	This attribute counts the frames received from the link interface by Framer. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent

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Values	Long Integer
Default	No default

ATTRIBUTE Htds Framer octetFromIf

Access	Read only
Description	This attribute counts the bytes received from the link interface by Framer. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

GROUP Htds Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	HdlcTransparent

ATTRIBUTE Htds Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data sent to the link as a percentage of the available bandwidth allocated for the service on the link. The utilization is the average for the last minute.
Mib	HdlcTransparent
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Htds Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data received from the link as a percentage of the available bandwidth allocated for the service on the link. The utilization is the average for the last minute.
Mib	HdlcTransparent
Values	Decimal (0..100)
Units	%
Default	0

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COLLECTED STATS HdlcTransparentDataService Framer

Description — The statistics record generated by the HdlcTransparentDataService Framer component.

ATTRIBUTE Htds Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Htds Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Htds Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Htds Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Htds Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COMPONENT Htds PermanentLogicalConnection (Plc)

Groups — GROUP Htds Plc Provisioning (Prov)

Scope — Application

Description — *Htds/n PLC*
This is the description of the PLC Component for the HTDS service.

Mib — HdlcTransparent

Common Verbs — Help
List
Display

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GROUP Htds Plc Provisioning (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for a permanent logical connection. Note that all of the attributes are valid and provisionable on both ends of a connection. However with the exception of *remoteName*, all operational attributes are derived from the originating end provisioning, which may be either end unless *remoteName* is not provisioned on one end.
Mib	HdlcTransparent

ATTRIBUTE Htds Plc remoteName (rName)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *PLC*'s remote end point's address in the format of a component name. The syntax of a component is: "em/node type/instance". For an alternative representation of end point's addresses, see *addressToCall* and l*ocalAddress PLC* attributes. When using component name representation, end points are identified using a node name and a service name. As an example, the end point component for a third Htds service on node MoonBase is: "*EM/MoonBase HTDS/3*". If the *remoteName* is provisioned, it must match the name of the remote end or the connection will not be established even if the remote end is provisioned correctly. If no *remoteName* is provisioned, then this *LC* will accept connections from any other remote *LC* and it will not originate calls. Connections establish faster and are unique if both ends are provisioned with *remoteName*. *RemoteName* should be used when the remote end of the connection resides within the same topology region. If it resides in a different topology region, then *addressToCall* and *localAddress PLC* attributes should be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*. These strings are case insensitive, but the complete component name must be input.
Mib	HdlcTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Htds Plc setupPriority (spri)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the priority at which a path is established. Zero(0) is the highest priority and four(4) is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	HdlcTransparent
Values	Decimal (0..4)
Default	2

ATTRIBUTE Htds Plc holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the priority that a path holds once it is established. Zero(0) is the highest priority and four(4) is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	HdlcTransparent
Values	Decimal (0..4)
Default	2

ATTRIBUTE Htds Plc requiredTxBandwidth (tbw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth reserved by a path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that Transmit at this end represents Receive at the remote end. Note that when the values do not correspond the originating end of the connection determines the value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)

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Units	bit/s
Default	64000

ATTRIBUTE Htds Plc requiredRxBandwidth (rbw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth reserved by a path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that Transmit at this end represents Receive at the remote end. Note that when the values do not correspond the originating end of the connection determines the value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Htds Plc requiredTrafficType (rttyp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of traffic transmitted over the path. There are eight(8) possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five(5) other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType**,*** will be candidates for this connection.
Mib	HdlcTransparent
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3)

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	trafficType4 (tt4) trafficType5 (tt5)
Default	data

ATTRIBUTE Htds Plc permittedTrunkTypes (pttyp)

Access	Read and write
Criticality	Process
Description	This attribute specifies up to eight(8) types of trunk that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six(6) remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	HdlcTransparent
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Htds Plc requiredSecurity (rsec)

Access	Read and write
Criticality	Process
Description	This attribute specifies the required minimum level of security of the trunks on the route. Zero(0) represents the most secure and seven(7) represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	HdlcTransparent
Values	Decimal (0..7)
Default	4

ATTRIBUTE Htds Plc requiredCustomerParm (rcparm)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. Its value, a number from zero(0) to seven(7), is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero(0) to seven(7). The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	HdlcTransparent
Values	Decimal (0..7)
Default	4

ATTRIBUTE Htds Plc pathAttributeToMinimize (pamin)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost or delay of a route is the sum of the cost or delay metrics of all the trunks on the route. The route selection algorithm uses this attribute as the minimization criteria. If more than one route is found while using this attribute as the minimization criteria, then the route with the smallest non-minimization metric is chosen amongst the equivalent routes.
Mib	HdlcTransparent
Values	cost delay
Default	cost

ATTRIBUTE Htds Plc maximumAcceptableCost (maxCost)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the *Trunk* component. This attribute is used to accept or reject a path after the route selection algorithm has been applied, regardless of the minimization criteria. It is possible that there may not be a route with an acceptable cost.
Mib	HdlcTransparent
Values	Decimal (0..65535)
Default	1280

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ATTRIBUTE Htds Plc maximumAcceptableDelay (maxDelay)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delay of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512 byte packet. Note that the delay for a trunk can be a provisioned (with override) or measured value on the trunk. PORs does not recommend using override for the delay on a trunk since this has little added value for PORs traffic. Remember, that the trunk *measuredRoundTripDelay* (ms) discovered through the Trunk staging protocols, divided by two and truncated, to provide the one way delay, is used to populate the topological database. The value includes emission, propagation, and queuing delays. A 512 byte data packet is used to perform the measurement. This value is updated periodically by Trunks and reflects the operating delay of the trunk. PORs uses this attribute to accept or reject a path after the route selection algorithm has been applied, regardless of the minimization criteria.
Mib	HdlcTransparent
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Htds Plc emissionPriority (epri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. *EmissionPriority* of Zero(0) indicates the highest emission priority, while two (2) indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	HdlcTransparent
Values	Decimal (1..2)
Default	1

ATTRIBUTE Htds Plc discardPriority (dpri)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the importance of the packets on the path. One(1) is used for paths carrying the most important traffic, and three(3) is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically) are discarded after packets with a higher *discardPriority* (numerically).
Mib	HdlcTransparent
Values	Decimal (1..3)
Default	2

ATTRIBUTE Htds Plc pathType (pType)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the path for this PLC is determined automatically or by static provisioning. The default (***normal***) is to automatically choose a route with Route Selection. ***Normal*** *pathTypes* require less provisioning and can dynamically handle path failures. The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	HdlcTransparent
Values	normal manual forced
Default	normal

ATTRIBUTE Htds Plc pathFailureAction (pfa)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to

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reRoutePath, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.

With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.

All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.

Mib	HdlcTransparent
Values	reRoutePath disconnectConnection
Default	reRoutePath

ATTRIBUTE Htds Plc bumpPreference (bpref)

Access	Read and write
Criticality	Process
Description	This attribute specifies when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *holdingPriority* in order to acquire its bandwidth and be established. By default, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. A connection may be set to always bump in order to find the best route it may have.
Mib	HdlcTransparent
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Htds Plc optimization (opt)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.

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Mib	HdlcTransparent
Values	disabled enabled
Default	enabled

ATTRIBUTE Htds Plc addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *PLC*'s remote end point's address in the format of a NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. For an alternative representation of end point's addresses, see *remoteName* attribute. If the *addressToCall* is provisioned, it must match *localAddress* provisioned on the remote end or the connection will not be established. Connections establish faster and are unique if both ends are provisioned with *addressToCall*. *AddressToCall* must be used when the remote end of the connection resides in different topology region. If it resides in the same topology region, then *remoteName* may be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*.
Mib	HdlcTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Htds Plc localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *PLC*'s end point address in the format of an NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. *LocalAddress* must share a prefix with MOD *nodePrefix* or one of MOD *alternatePorsPrefixes* for this node, otherwise PORS will not be able to route calls to this service. *LocalAddress* is used in conjunction with *addressToCall*. That is, the end responsible for originating calls must have *addressToCall* provisioned, while the end responsible for terminating calls must have *localAddress* provisioned. In such a case, *addressToCall* on the originating end must match exactly the *localAddress* of the terminating end. Note that both ends may be originating and terminating at the same time. That is, both ends may have *addressToCall* and *localAddress* provisioned as long as *addressToCall* and *localAddress* on different ends are identical.

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Mib	HdlcTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Htds Plc maximumAcceptableGatewayCost (maxGateCost)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the gateway cost metric of a route, which is the sum of the gateway cost metrics of all gateway links on the route. It has the same semantics as the *maximumAcceptableCost* except that gateway cost metrics are used instead of trunk cost metrics. Gateway cost metrics are provisioned under *Trunk Address* component of a gateway link specifying a gateway costs of reaching an address through the link.
Mib	HdlcTransparent
Values	Decimal (0..65535)
Default	2048

ATTRIBUTE Htds Plc manualPath (mpath)

Access	Read and write
Criticality	Process
Description	This attribute specifies the sequence of trunks to be used as the route for the path, thus bypassing PORS' automatic route selection. If the path fails the validation, no other path can be selected[1]. This attribute should only be used in special cases since the route selection algorithm is able to find and maintain the best routes. A related path attribute, the *pathType*, determines if this route will be used as a manual or forced path type. As an example, the trunk component name for the third trunk on node MoonBase is "*EM/MoonBase Trk/3*". Note that only the first end of the trunk that the packet would encounter is provisioned. These strings are case insensitive but the complete component name must be input. Note 1: the trunk designation must be a 3-letter form, e.g., 'trk'. Note 2: only the outbound trunks component names are used to provision the ***manualPath***. Note 3: It is recommended to have two independent routes specified for a manual path by specifying a different ***manualPath*** (non-symmetric) for each end. In this case, there is no way to select which route will be used (first up wins) but if one path is torn down due to a failure then the other ***manualPath*** may be used to reroute the path.

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Mib	HdlcTransparent
Vector of	String (0..40, ASCII)
Index	Decimal (0..9)
Default	([10] "")

COMPONENT Htds LogicalConnection (LCo)

Groups	GROUP Htds LCo PathData GROUP Htds LCo Statistics (Stats)
Scope	Application
Description	*...Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	HdlcTransparent
Common Verbs	Help List Display

VERB RERoute Htds LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Htds LCo PathData

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.

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Mib	HdlcTransparent

ATTRIBUTE Htds LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	HdlcTransparent
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE Htds LCo overrideRemoteName (orn)

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	HdlcTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Htds LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	HdlcTransparent
Values	calling called

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Default	No default

ATTRIBUTE Htds LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	HdlcTransparent
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Htds LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	HdlcTransparent
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Htds LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	HdlcTransparent

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Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Htds LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	HdlcTransparent
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Htds LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	HdlcTransparent
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Htds LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Htds LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the

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bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value

Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Htds LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.
Mib	HdlcTransparent
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Htds LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

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Mib	HdlcTransparent
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Htds LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	HdlcTransparent
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Htds LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	HdlcTransparent
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Htds LCo emissionPriority (epri)

Access	Read only

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Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	HdlcTransparent
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Htds LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	HdlcTransparent
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Htds LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	HdlcTransparent

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Values	normal manual forced
Default	No default

ATTRIBUTE Htds LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Htds LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Htds LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	HdlcTransparent

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Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE Htds LCo lastTearDownReason

Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up. ***normalShutDown*** - This path has gone down due to normal call termination. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction. ***insufficientRxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction. ***trunkFailure***- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute. ***trunkCardFailure***- A trunk FP card has failed along the path. ***accessCardFailure***- The FP on which the peer access service was running has failed. ***operatorForced***- The path has terminated due to the operator locking a trunk along the path. ***lostLcnClash***- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC. ***networkCongestion*** - The path has failed due to control information being

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lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib — HdlcTransparent

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached

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farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default: none

ATTRIBUTE Htds LCo pathFailureAction

Access: Read only

Description: This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.

All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends

Mib: HdlcTransparent

Values:
reRoutePath
disconnectConnection

Default: No default

ATTRIBUTE Htds LCo bumpPreference (bpref)

Access: Read only

Description: This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority.* A connection may also always bump in order to obtain the best route.

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Mib	HdlcTransparent
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Htds LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	HdlcTransparent
Values	disabled enabled
Default	No default

ATTRIBUTE Htds LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	HdlcTransparent
Values	Time (DHMS)
Default	No default

ATTRIBUTE Htds LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	HdlcTransparent
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Htds LCo Statistics (Stats)

Properties	Operational

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Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	HdlcTransparent

ATTRIBUTE Htds LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Htds

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - IpDlciGr

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COMPONENT IpDlciGroup (IpDlciGrp)

Instance	Decimal (1..4294967295)
Groups	GROUP IpDlciGrp CustomerIdentifierData (CidData) GROUP IpDlciGrp IfEntryProv (IfEntry) GROUP IpDlciGrp Provisioned (Prov) GROUP IpDlciGrp MediaProv (Mp) GROUP IpDlciGrp OsiState (State) GROUP IpDlciGrp OperationalStatus (OperStatus)
Scope	Application
Description	*IpDlciGroup/n* This component represents a logical interface between a Virtual Router and a FrameRelay Interface (*FrUni*). An *IpDlciGroup* associates multiple frame relay *DataLinkConnectionIdentifer*s (*Dlci*) with a single *VirtualRouter ProtocolPort*. The *IpDlciGroup* component is associated with a *ProtocolPort* using the *linkToProtcolPort* attribute and to frame relay *Dlci*s using the *linkToFrDlci* attribute in each *FrConnection* subcomponent.
Mib	IpDlciGroup
Subcomponents	COMPONENT IpDlciGrp FrConnection (Frc)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP IpDlciGrp CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	IpDlciGroup

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ATTRIBUTE IpDlciGrp customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	IpDlciGroup
Values	Decimal (0; 1..8191)
Default	0

GROUP IpDlciGrp IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpDlciGroup
Values	up down testing
Default	up

ATTRIBUTE IpDlciGrp ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

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Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	IpDlciGroup
Values	Decimal (1..65535)
Default	No default

GROUP IpDlciGrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *IpDlciGroup* component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp maxTransmissionUnit (mtuSize)

Access	Read and write
Description	This attribute specifies the size of the largest datagram (including the frame relay header) which can be sent on the interface.
Mib	IpDlciGroup
Values	Decimal (262..9190)
Units	octets
Default	1604

GROUP IpDlciGrp MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the Media Application component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	IpDlciGroup
Values	Link (Service, linkToMedia)
Default	No default

GROUP IpDlciGrp OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpDlciGroup
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE IpDlciGrp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IpDlciGroup
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE IpDlciGrp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpDlciGroup
Values	idle active (activ) busy
Default	idle

GROUP IpDlciGrp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpDlciGroup
Values	up down testing
Default	up

COMPONENT IpDlciGrp FrConnection (Frc)

Instance	Decimal (1..255)
Groups	GROUP IpDlciGrp Frc Provisioned (Prov) GROUP IpDlciGrp Frc OsiState (State) GROUP IpDlciGrp Frc Statistics (Stats)

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Scope	Application
Description	*IpDlciGrp/n FrConnection/n* This component represents a virtual connection over which internetworking frames are relayed between IP and frame relay.
Mib	IpDlciGroup
Common Verbs	Help List Display Add DELete

GROUP IpDlciGrp Frc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *FrConnection* component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp Frc linkToFrDlci (frDlci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the frame relay *Dlci IpConn* component that this connection is associated with.
Mib	IpDlciGroup
Values	Link (Hardware, linkToIpDlciGrp)
Default	No default

ATTRIBUTE IpDlciGrp Frc ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet.

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DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component.
Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *FrConnection*.

If the *FrConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	IpDlciGroup
Values	Decimal (0..3)
Default	0

ATTRIBUTE IpDlciGrp Frc linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. When set, the value of this attribute must be consistent with the *linkToProtocolPort* attribute value of the parent *IpDlciGroup* component. That is, they must both point to the same *ProtocolPort* component.
Mib	IpDlciGroup
Values	Link (Service, linkToMediaConnection)
Default	No default

GROUP IpDlciGrp Frc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp Frc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — IpDlciGroup

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE IpDlciGrp Frc operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — IpDlciGroup

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE IpDlciGrp Frc usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	IpDlciGroup
Values	idle active (activ) busy
Default	idle

GROUP IpDlciGrp Frc Statistics (Stats)

Properties	Operational
Description	This group contains the packet based statistics maintained for the *FrConnection* component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp Frc inUnknownProtocol

Access	Read only
Description	This attribute counts the packets received on this connection which are discarded because they contain an unknown protocol. This counter wraps around to ***0*** when it exceeds its maximum value.
Mib	IpDlciGroup
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpDlciGrp Frc inUnsupportedProtocol

Access	Read only
Description	This attribute counts the packets received on this connection which are discarded because they contain an unsupported protocol. This includes packets received for protocols not currently bound to the associated *ProtocolPort* component. This counter wraps around to ***0*** when it exceeds its maximum value.
Mib	IpDlciGroup
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpDlciGrp Frc inLastDiscardedProtocolHeader

Access	Read only
Description	This attribute indicates the first eight octets of the most recent packet that was received from the interface with an unknown or unsupported protocol.
Mib	IpDlciGroup
Values	String (1..8, Hex)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - IpDlciGr

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - IpiFr

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COMPONENT IpInterfaceOverFrameRelay (IpiFr)

Groups	GROUP IpiFr Provisioned (Prov)
Scope	Application
Description	*IP Interface over Frame Relay* The *IP interface over Frame Relay* component allows external Network Management Stations using Frame Relay PVC connections to perform the network management functions on the node. Network management stations can be directly connected to a node with a Frame Relay PVC connection, or indirectly connected via an IP routing capable device which has a Frame Relay PVC connection to the node.
Mib	IpiFr
Subcomponents	COMPONENT IpiFr DataNetworkAddress (Dna)
Opt. Subcomp.	COMPONENT IpiFr LogicalChannelNumber (Lcn) COMPONENT IpiFr StaticRoute (Sr)
Dyn. Subcomp.	COMPONENT IpiFr Route (R)
Common Verbs	Help List Display Add DELete

GROUP IpiFr Provisioned (Prov)

Properties	Provisioned
Description	This group provides the provisionable attributes for the IpiFr component.
Mib	IpiFr

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ATTRIBUTE IpiFr ipAddress (ipa)

Access	Read and write
Description	This attribute specifies the unique Internet Protocol (IP) Address that represents the IP address of the IPI service.
Mib	IpiFr
Values	IP address
Default	0.0.0.0

ATTRIBUTE IpiFr maximumNumberOfLcn (maxLcn)

Access	Read only
Description	This attribute specifies the maximum number of LCNs that are supported on this service. It specifies the maximum number of connections from external network management sites to this IpiFr service.
Mib	IpiFr
Values	Decimal (24)
Default	24

ATTRIBUTE IpiFr subnetMask (sm)

Access	Read and write
Description	This attribute specifies the subnetwork mask for the IPI service.
Mib	IpiFr
Values	IP address
Default	255.0.0.0

COMPONENT IpiFr DataNetworkAddress (Dna)

Groups	GROUP IpiFr Dna Address GROUP IpiFr Dna OutgoingOptions GROUP IpiFr Dna IncomingOptions GROUP IpiFr Dna CallOptions
Scope	Application

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Description	*IpiFr Dna* This is the description of the Ipi Frame Relay *Dna* component. It is offers a subset of the generic *Dna* component attributes
Mib	IpiFr
Opt. Subcomp.	COMPONENT IpiFr Dna ClosedUserGroup (Cug)
Common Verbs	Help List Display

GROUP IpiFr Dna Address

Properties	Provisioned
Description	*Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. String of address digits is complemented by type of address and Npi. These attributes are used to interpret format of the address digits.
Mib	IpiFr

ATTRIBUTE IpiFr Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Component
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	IpiFr
Values	x121 e164
Default	x121

ATTRIBUTE IpiFr Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Component
Description	*Dna* attribute contains digits which form unique identifier of the customer interface. It can be compared (approximation only) to telephone number where phone number identifies unique telephone set. *Dna* digits are selected and assigned by network operators. *MaximumLenOfDna* is 15digits.
Mib	IpiFr
Values	BCD (1..15)

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Default	No default

GROUP IpiFr Dna OutgoingOptions

Properties	Provisioned
Description	*OutgoingOptions* group defines call options of a *Dna* for calls which are made out of the interface represented by *Dna*. All these options are not used for calls arriving to the interface represented by *Dna*.
Mib	IpiFr

ATTRIBUTE IpiFr Dna outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) can be made using this particular *D*na. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Outgoing Calls Barred' feature for *Dnas* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	IpiFr
Values	disallowed allowed
Default	disallowed

ATTRIBUTE IpiFr Dna outDefaultPriority (odf)

Access	Read only
Criticality	Component
Description	This attribute, if set to ***normal*** indicates that the default priority for outgoing calls (from the DTE to the network) using this particular *Dna* is normal priority - if the priority is not specified by the DTE. If this attribute is set to ***high*** then the default priority for outgoing calls using this particular *Dna* is high priority. It can be overridden by the *discardPriority* under *DLCI Direct Call* subcomponent.
Mib	IpiFr
Values	normal high
Default	high

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ATTRIBUTE IpiFr Dna defaultTransferPriority (dtp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the default transfer priority to network for all outgoing calls using this particular *Dna*. It is overRidden by the transferPriority provisioned in the *DLCI* Direct Call sub-component. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput. The default of *defaultTransferPriority* is ***high.***
Mib	IpiFr
Values	normal high
Default	high

ATTRIBUTE IpiFr Dna transferPriorityOverRide (tpor)

Access	Read and write
Criticality	Component
Description	When this attribute is set to ***yes***, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority. For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority*. The default of *transferPriorityOverRide* is ***yes***.
Mib	IpiFr
Values	yes no

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Default	yes

GROUP IpiFr Dna IncomingOptions

Properties	Provisioned
Description	*IncomingOptions* defines set of options for incoming calls. These options are used for calls arriving to the interface represented by *Dna*. For calls originated from the interface, *IncomingOptions* attributes are not used.
Mib	IpiFr

ATTRIBUTE IpiFr Dna incCalls (inc)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	IpiFr
Values	disallowed allowed
Default	allowed

ATTRIBUTE IpiFr Dna incAccess (ina)

Access	Read and write
Criticality	Component
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTEs that have Outgoing Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Closed User Group with Incoming Access' feature for *Dnas* in that incoming access is granted if this attribute is set to a value of ***allowed***.
Mib	IpiFr

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Values	disallowed allowed
Default	disallowed

GROUP IpiFr Dna CallOptions

Properties	Provisioned
Description	*CallOptions* group defines additional options for calls not related directly to direction of a call.
Mib	IpiFr

ATTRIBUTE IpiFr Dna serviceCategory (cat)

Access	Read only
Criticality	Component
Description	This attribute is assigned for each different type of service within which this *Dna* is configured. It is placed into the Service Category attribute in the accounting record by both ends of the VC.
Mib	IpiFr
Values	gsp x25 enhancedIti ncs mlti sm ici dsp3270 iam mlhi term3270 iti bsi hostIti x75 hdsp3270 api3201 sdlc snaMultiHost redirectionServ trSnaTpad offnetNui gasServer vapServer vapAgent frameRelay ipiVc ipiFr

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Default	ipiFr

ATTRIBUTE IpiFr Dna accountClass (acl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator and it is an arbitrary number.
Mib	IpiFr
Values	Decimal (0..255)
Default	0

ATTRIBUTE IpiFr Dna serviceExchange (sre)

Access	Read and write
Criticality	Component
Description	This attribute is an arbitrary number, entered by the network operator. It is included in the accounting record created by the VC.
Mib	IpiFr
Values	Decimal (0..255)
Default	0

COMPONENT IpiFr Dna ClosedUserGroup (Cug)

Instance	Decimal (0..255)
Groups	GROUP IpiFr Dna Cug CugOptions
Scope	Application
Description	*IpiFr Dna ClosedUserGroup* This group defines options associated with national or international *CUG* Identifier. Other *DNAs* in the network can have *CUGs* defined which groups these *DNAs* by *CUG interlockCode*. If *DNAs* are defined with *CUGs*, calls from *DNAs* which do not have the same *interlockCode* defined are refused. Attributes *incAccess* and *outAccess* can override this

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rule. *IpiFr* handles only incoming calls. Therefore, Closed User Group for this interface is defined for validation of incoming PVC calls only.

Mib IpiFr

Common Verbs
Help
List
Display
Add
DELete

GROUP IpiFr Dna Cug CugOptions

Properties Provisioned

Description

This group defines options for a CUG. Attributes in this group define *ClosedUserGroup* options associated with *interlockCode*. *DNA's* with the same *CUG* (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same *CUG* group are defined here.

Mib IpiFr

ATTRIBUTE IpiFr Dna Cug type

Access Read and write

Description This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTEs for which there is no X.75 Gateway between. (National CUGs cannot normally traverse an X.75 Gateway).
If this attribute is set to ***national***, then the *CUG* is a national *CUG*, in which case, the *dnic* should be left at its default value since it is not part of a national *CUG*. If this attribute is set to ***international***, then the *CUG* is an international *CUG*, in which case, the *dnic* should be set appropriately as part of the *CUG interlockCode*.

Mib IpiFr

Values
national
international

Default national

ATTRIBUTE IpiFr Dna Cug dnic

Access Read and write

Description This attribute specifies the *dnic* (Data Network ID Code) of the *CUG* by which packet networks are identified. This attribute is not applicable if the *CUG* is a ***national*** *CUG*, as specified by the CUG *type* attribute. There are usually 1 or 2 *dnics* assigned per country, for public networks. The U.S. is

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an exception where each BOC has a *dnic*. Also, a group of private networks can have its own *dnic*.

dnic value is not an arbitrary number. It is assigned by international agreement and controlled by CCITT.

Mib	IpiFr
Values	BCD (4)
Default	0000

ATTRIBUTE IpiFr Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the *CUG* identifier of a national or international *CUG* call. It is an arbitrary number and it also can be called CUG in some descriptions. Interfaces (*DNA's*) defined with this number can make calls to *DNA's* with the same *interlockCode*.
Mib	IpiFr
Values	Decimal (0..65535)
Default	65535

ATTRIBUTE IpiFr Dna Cug incCalls (inc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular CUG. If set to ***disallowed***, then incoming calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Incoming Calls Barred' feature for CUGs in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	IpiFr
Values	disallowed allowed
Default	allowed

COMPONENT IpiFr LogicalChannelNumber (Lcn)

Instance	Decimal (16..39)
Groups	GROUP IpiFr Lcn OsiState (State) GROUP IpiFr Lcn Operational (Oper) GROUP IpiFr Lcn Provisioned (Prov)
Scope	Application

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Description	*IpiFr Lcn/n* This component represents one *Logical Channel Number* responsible for logical connection with the PVC. There can be up to 24 instances of *Lcn* on the *IpiFr* component.
Mib	IpiFr
Subcomponents	COMPONENT IpiFr Lcn DirectCall (Dc)
Dyn. Subcomp.	COMPONENT IpiFr Lcn Vc
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP IpiFr Lcn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: IpiFr

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE IpiFr Lcn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: IpiFr

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE IpiFr Lcn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: IpiFr

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Values	idle active (activ) busy
Default	idle

ATTRIBUTE IpiFr Lcn availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

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The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	IpiFr
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE IpiFr Lcn proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	IpiFr
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE IpiFr Lcn controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	IpiFr
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE IpiFr Lcn alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	IpiFr
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE IpiFr Lcn standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	IpiFr
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE IpiFr Lcn unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	IpiFr
Values	false true
Default	false

GROUP IpiFr Lcn Operational (Oper)

Properties	Operational
Description	This group contains status of the internal IP network interface.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn ipInterfaceDevice (ipIfD)

Access	Read only
Description	The status of the internal IP network interface is *inactive* until either the remoteIpAddress attribute is provisioned, or an IP packet is exchanged between a Network Management Station and the internal IP network interface (via the LCN). At this point, the status changes to *active*.
Mib	IpiFr
Values	inactive active
Default	inactive

ATTRIBUTE IpiFr Lcn opRemoteIpAddress (opRmtIpa)

Access	Read only

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Description	This attribute indicates the IP address of the remote network device connected to this interface. The value is either 0.0.0.0 until the first data packet is received from the remote end, or is the value provisioned in *remoteIpAddress*.
Mib	IpiFr
Values	IP address
Default	0.0.0.0

ATTRIBUTE IpiFr Lcn packetsSent (pktS)

Access	Read only
Description	This attribute counts the number of IP packets sent from this interface.
Mib	IpiFr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpiFr Lcn packetsReceived (pktRx)

Access	Read only
Description	This attribute counts the number of IP packets received from the remote network device.
Mib	IpiFr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpiFr Lcn discardTxPackets (discTxPkt)

Access	Read only
Description	This attribute counts the number of IP packets destined to the remote end which were discarded by this interface.
Mib	IpiFr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpiFr Lcn discardRcvPackets (discRxPkt)

Access	Read only
Description	This attribute counts the number of IP packets received from the remote end which were discarded by this interface.
Mib	IpiFr
Values	Decimal (0..4294967295)

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Default	No default

GROUP IpiFr Lcn Provisioned (Prov)

Properties	Provisioned
Description	This group provides the provisionable attributes for the *IpiFR Lcn* component.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn remoteIpAddress (rmtIpa)

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of the remote device connected to this *Lcn* interface. This device can be a host, and / or a gateway. If the device is a gateway, and *StaticRoute*s are defined using this gateway, it is recommended that this attribute be set. It is also recommended to set this attribute, if management applications such as Software Download and SNMP, which can initiate IP traffic with Network Management Stations, are potentially using this *Lcn* interface. IP routing information within IpiFr is not known or activated for this *Lcn* interface until the remoteIpAddress is known. When the destination IpAddress is left at its default value of 0.0.0.0, the calling IP address is learnt from the first data packet received.
Mib	IpiFr
Values	IP address
Default	0.0.0.0

COMPONENT IpiFr Lcn DirectCall (Dc)

Groups	GROUP IpiFr Lcn Dc Options
Scope	Application
Description	*IPIFR Lcn/x DC* This component defines direct call options for calls issued without operator intervention. Connection is complete and can be initiated automatically.
Mib	IpiFr
Common Verbs	Help List Display

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GROUP IpiFr Lcn Dc Options

Properties	Provisioned
Description	Options group defines attributes associated with direct call. It defines complete connection in terms of path and call options. This connection can be permanent (pvc) or, in future release, switched (svc). It can have facilities. The total number of bytes of facilities including the facility codes, and all of the facility data from all of the four classes of facilities: CCITT_Facilities DTE_Facilities National_Facilities International_Facilities must not exceed 512 bytes.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn Dc remoteNpi (rnpi)

Access	Read and write
Description	RemoteNumbering Plan Indicator (Npi) indicates the numbering plan used in the *remoteDna*.
Mib	IpiFr
Values	x121 e164
Default	x121

ATTRIBUTE IpiFr Lcn Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (*Dna*) of the remote. This is the called (destination) DTE address (*Dna*) to which this direct call will be sent. Initially, the called DTE address attribute must be present, that is, there must be a valid destination address. However, it may be possible in the future to configure the direct call with a mnemonic address, in which case, this attribute will contain a zero-length *Dna*, and the mnemonic address will be carried as one of the facilities.
Mib	IpiFr
Values	BCD (1..15)
Default	No default

ATTRIBUTE IpiFr Lcn Dc remoteDlci (rdlci)

Access	Read and write
Description	This attribute provides the value of the remote DLCI (Data Link Connection Identifier)
Mib	IpiFr

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Values	Decimal (16..1007)
Default	No default

ATTRIBUTE IpiFr Lcn Dc type

Access	Read only
Description	This attribute specifies the type of *Vc* call: ***permanentSlave***, With the value set to ***permanentSlave,*** a permanent connection will be established between the two ends. The remote end must only be defined as a ***permanentMaster,*** otherwise the connection cannot establish. The end defined as the ***permanentMaster*** always initiates the call; however the ***permanentSlave*** will attempt to signal the ***permanentMaster*** once per minute to initiate a new call attempt. This is a read only attribute and can not be changed by operator.
Mib	IpiFr
Values	permanentMaster (master) permanentSlave (slave)
Default	permanentSlave

ATTRIBUTE IpiFr Lcn Dc transferPriority (tp)

Access	Read and write
Description	This attribute specifies the transfer priority to network for the outgoing calls using this particular *DLCI*. It overRides the *defaultTransferPriority* provisioned in its associated *Dna* component. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput. The default of *transferPriority* is ***useDnaDefTP***. It means using the provisioning value under *defaultTransferPriority* of its associated *Dna* for this *DLCI*.
Mib	IpiFr

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Values	normal high useDnaDefTP
Default	useDnaDefTP

ATTRIBUTE IpiFr Lcn Dc discardPriority (dp)

Access	Read and write
Description	This attribute specifies the discard priority for outgoing call using this *DLCI*. The discard priority has three provisioning values: ***normal***, ***high***, and ***useDnaDefPriority***. Traffic with normal priority are discarded first than the traffic with high priority. The *Dna* default value (provisioned by *outDefaultPriority*) is taken if this attribute is set to the value ***useDnaDefPriority***. The default of *discardPriority* is ***useDnaDefPriority***.
Mib	IpiFr
Values	normal high useDnaDefPriority
Default	useDnaDefPriority

COMPONENT IpiFr Lcn Vc

Groups	GROUP IpiFr Lcn Vc CallData (Cad) GROUP IpiFr Lcn Vc IntervalData (Intd) GROUP IpiFr Lcn Vc FrameRelayData (Frd)
Scope	Application
Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	IpiFr
Common Verbs	Help List Display

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VERB Ping **IpiFr Lcn Vc**

Impact: Passive

Description: Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/*<n>* Dlci/*<n>* Vc

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12,

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since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP IpiFr Lcn Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	IpiFr
Values	pvc svc spvc frf10spvc
Default	No default

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ATTRIBUTE IpiFr Lcn Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	IpiFr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE IpiFr Lcn Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	IpiFr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE IpiFr Lcn Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	IpiFr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE IpiFr Lcn Vc previousDiagnosticCode

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Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	IpiFr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE IpiFr Lcn Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	IpiFr
Values	x121 e164
Default	No default

ATTRIBUTE IpiFr Lcn Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	IpiFr
Values	BCD (1..15)
Default	No default

ATTRIBUTE IpiFr Lcn Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	IpiFr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE IpiFr Lcn Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.

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Mib	IpiFr
Values	x121 e164
Default	No default

ATTRIBUTE IpiFr Lcn Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	IpiFr
Values	BCD (1..15)
Default	No default

ATTRIBUTE IpiFr Lcn Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	IpiFr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE IpiFr Lcn Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	IpiFr
Values	yes no
Default	No default

ATTRIBUTE IpiFr Lcn Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	IpiFr
Values	yes no
Default	No default

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ATTRIBUTE IpiFr Lcn Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	IpiFr
Values	high normal
Default	No default

ATTRIBUTE IpiFr Lcn Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	IpiFr
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE IpiFr Lcn Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	IpiFr
Values	normal high
Default	No default

ATTRIBUTE IpiFr Lcn Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	IpiFr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE IpiFr Lcn Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	IpiFr

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Values	Decimal (0..4096)
Default	No default

ATTRIBUTE IpiFr Lcn Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	IpiFr
Values	throughput delay multimedia
Default	No default

ATTRIBUTE IpiFr Lcn Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	IpiFr
Values	throughput delay multimedia
Default	No default

ATTRIBUTE IpiFr Lcn Vc emissionPriorityToNetwork (epto)

Access	Read only
Description	This attribute displays the network internal emission priority to the network.
Mib	IpiFr
Values	normal high interrupting
Default	No default

ATTRIBUTE IpiFr Lcn Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	IpiFr

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Values	normal high interrupting
Default	No default

ATTRIBUTE IpiFr Lcn Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.
Mib	IpiFr
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE IpiFr Lcn Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	IpiFr
List of	The name of the component
Default	No default

GROUP IpiFr Lcn Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.

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Mib	IpiFr

ATTRIBUTE IpiFr Lcn Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	IpiFr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE IpiFr Lcn Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	IpiFr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE IpiFr Lcn Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	IpiFr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE IpiFr Lcn Vc startTime

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Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	IpiFr
Values	Time (DHMS)
Default	No default

ATTRIBUTE IpiFr Lcn Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	IpiFr
Values	Decimal (0..4294967295)
Default	No default

GROUP IpiFr Lcn Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	IpiFr

ATTRIBUTE IpiFr Lcn Vc frmCongestedToSubnet

Access	Read only

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Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc cannotForwardToSubnet

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	IpiFr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE IpiFr Lcn Vc combErrorsFromSubnet

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Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	IpiFr
Values	Decimal (0..5000)

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Default	No default

ATTRIBUTE IpiFr Lcn Vc ooSeqByteCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses this statistics to set a maximum size for the out-of-sequenced queue.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

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ATTRIBUTE IpiFr Lcn Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	IpiFr
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE IpiFr Lcn Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc ooSeqPktCntExceeded

Access	Read only

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Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	IpiFr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE IpiFr Lcn Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	IpiFr
Values	Decimal (0..50000)
Default	No default

COMPONENT IpiFr StaticRoute (Sr)

Instance	IP address
Groups	GROUP IpiFr Sr Provisioned (Prov)
Scope	Application
Description	*IpiFr StaticRoute/destIpAddress* This component contains information for setting up a static routes on the IpiFr service. These provisioned static IP routes allow the ability to specify IP routes to network management stations that are not directly connected to the node. The component is indexed by a destination IP Address. It represents the static IP route to a particular IP host, subnetwork, or network. The default route IP address is indexed by 0.0.0.0. Note that sub-network routes are identified using IpiFr's provisioned *subnetMask*. This *subnetMask* only applies to the IP network for which

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IpiFr's IP Address belongs. Therefore, sub-network routes are only supported for this local IP network.

Mib IpiFr

Common Verbs
Help
List
Display
Add
DELete

GROUP IpiFr Sr Provisioned (Prov)

Properties Provisioned

Description

This group provides the provisionable parameters for setting up a static route.

Mib IpiFr

ATTRIBUTE IpiFr Sr gatewayIpAddress (gtyIpa)

Access Read and write

Criticality Component

Description

The attribute specifies the IP Address of the next hop in this route to the destination IP Address. For this static route to be active, the value of this attribute must match the *opRemoteIpAddress* attribute of one of the *Lcn* components.

Mib IpiFr

Values IP address

Default 0.0.0.0

ATTRIBUTE IpiFr Sr backupGatewayIpAddress (bGtyIpa)

Access Read and write

Criticality Component

Description

The attribute specifies an ordered list of alternative gateways to use for the route to the destination IP Address. This attribute is only supported for the default route.

If the *Lcn* interface of the current gateway IP Address fails, then the *backupGatewayIpAddress*es, listed in this attribute, are searched, in order, for a gatewayIpAddress with an enabled *Lcn*. If found, the static route to this destination IP Address is updated to use the found gateway IP Address. If the primary gateway is later restored, the default route will not

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automatically return to the provisioned primary gateway. The primary gateway (if available) will be used if the backup gateway becomes unavailable.

Note that an *Lcn* interface can fail due to either the *Vc* through the network failing, or an *Lmi* indication that the far-end link is failed.

Mib	IpiFr
Values	IP address
Replication	Decimal (1..23)
Default	No default

COMPONENT IpiFr Route (R)

Instance	IP address
Groups	GROUP IpiFr R Operational (Oper)
Scope	Application
Description	*IpiFr Route/destIpAddress*

This dynamic component represents an active IP route within the IpiFr service. The component is indexed by the destination IP Address of the IP route. It represents the IP route to a particular IP host, subnetwork, or network. The default route IP address is indexed by 0.0.0.0.

Note that only an active route is shown as an *IpiFr Route/<IP_Address>*. A provisioned static route (that is, *IpiFr StaticRoute/<IP_Address>*) will be listed as an active route only if it's Lcn interface is enabled (that is, the associated VC through the network is up, and the Frame Relay *Lmi* is reporting the far-end link is up).

Mib	IpiFr
Common Verbs	Help List Display

GROUP IpiFr R Operational (Oper)

Properties	Operational
Description	This group contains operational status of the static route
Mib	IpiFr

ATTRIBUTE IpiFr R gtyIpAddr (gtyIpa)

Access	Read only
Description	The attribute specifies the IP Address of the next hop in this route to the destination IP Address.

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Mib	IpiFr
Values	IP address
Default	0.0.0.0

ATTRIBUTE IpiFr R lcnIf (lcnIf)

Access	Read only
Description	This attribute specifies the *Lcn* interface used by this IP route.
Mib	IpiFr
Values	Decimal (16..39)
Default	No default

ATTRIBUTE IpiFr R type

Access	Read only
Description	This attribute indicates whether a route is going to a host or a subnet or a network.
Mib	IpiFr
Values	host subnet network
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - IpiFr

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Ipivc

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COMPONENT IpInterfaceOverVc (Ipivc)

Groups	GROUP Ipivc Provisioned (Prov)
Scope	Application
Description	IpiVc The IP interface over VC allows access to the module for external network management.
Mib	IpiVc
Subcomponents	COMPONENT Ipivc DataNetworkAddress (Dna)
Opt. Subcomp.	COMPONENT Ipivc DefaultRoute (Dr)
Dyn. Subcomp.	COMPONENT Ipivc LogicalChannelNumber (Lcn)
Common Verbs	Help List Display Add DELete

GROUP Ipivc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the IpiVc component.
Mib	IpiVc

ATTRIBUTE Ipivc ipAddress (ipa)

Access	Read and write
Description	This IP Address represents the IP address of the IP interface.
Mib	IpiVc
Values	IP address

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Default	0.0.0.0

ATTRIBUTE Ipivc maximumNumberOfLcn (maxLcn)

Access	Read only
Description	This attribute contains the maximum number of LCNs that can be setup to the IP Interface over Vc. It defines the maximum number of calls that the external network management systems can setup to IpiVc simultaneously.
Mib	IpiVc
Values	Decimal (24)
Default	24

COMPONENT Ipivc DataNetworkAddress (Dna)

Groups	GROUP Ipivc Dna Address GROUP Ipivc Dna OutgoingOptions GROUP Ipivc Dna IncomingOptions GROUP Ipivc Dna CallOptions
Scope	Application
Description	*IpiVc Dna* This is the description of the generic *Vc Dna* component. It includes the super-set of all attributes which may apply to a VC. Particular applications will typically offer only a subset of these attributes by providing a definition of their own Dna subcomponent.
Mib	IpiVc
Subcomponents	COMPONENT Ipivc Dna ClosedUserGroup (Cug)
Common Verbs	Help List Display

GROUP Ipivc Dna Address

Properties	Provisioned
Description	DnaAddress group contains attributes common to all Dna's. Every Dna used in the network is defined with this group 0f 2 attributes. String of address digits is complemented by type of address and Npi. These attributes are used to interpret format of the address digits.
Mib	IpiVc

ATTRIBUTE Ipivc Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Component

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Description	This attribute indicates the Numbering Plan Indicator (NPI) of the Dna that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	IpiVc
Values	x121 e164
Default	x121

ATTRIBUTE Ipivc Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Component
Description	*Dna* attribute contains digits which form unique identifier of the customer. It is the equivalent of the telephone number in the telephone network. MaximumLenOfDna is 15digits.
Mib	IpiVc
Values	BCD (1..15)
Default	No default

GROUP Ipivc Dna OutgoingOptions

Properties	Provisioned
Description	DnaOutOptionsProv group defines call options of a Dna for calls which are made out of the interface represented by Dna. All these options are not used for calls arriving to the interface represented by Dna.
Mib	IpiVc

ATTRIBUTE Ipivc Dna outCalls (ouc)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) can be made using this particular DNA. If set to a value of ***disallowed***, then outgoing calls cannot be made using this DNA - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Outgoing Calls Barred' feature for DNAs in that outgoing calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this DNA to be usable.
Mib	IpiVc
Values	disallowed allowed
Default	disallowed

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ATTRIBUTE Ipivc Dna defaultTransferPriority (dtp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the default transfer priority to network for all outgoing calls using this particular *Dna*. It is overRidden by the transferPriority provisioned in the *DLCI* Direct Call sub-component. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput. The default of *defaultTransferPriority* is ***normal***.
Mib	IpiVc
Values	normal high
Default	normal

ATTRIBUTE Ipivc Dna transferPriorityOverRide (tpor)

Access	Read and write
Criticality	Component
Description	When this attribute is set to ***yes***, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority. For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority*. The default of *transferPriorityOverRide* is ***no***.
Mib	IpiVc
Values	yes no

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Default	no

GROUP Ipivc Dna IncomingOptions

Properties	Provisioned
Description	DnaIncOptions defines a set of options for incoming calls. These options are used for calls arriving to the interface represented by Dna. For calls originated from the interface, IncomingOptions attributes are not used.
Mib	IpiVc

ATTRIBUTE Ipivc Dna incCalls (inc)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then incoming calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this DNA to be usable.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incHighPriorityReverseCharge (ihp)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming high priority, reverse charged calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute, together with the *incNormalPriorityReverseChargeCalls* attribute corresponds to the CCITT 'Reverse Charging Acceptance' feature for DNAs in that reverse charged calls are accepted if both attributes are set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, incCalls is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed

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Default	allowed

ATTRIBUTE Ipivc Dna incNormalPriorityReverseCharge (inp)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming normal priority, reverse charged calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute, together with the *incHighPriorityReverseChargeCalls* attribute corresponds to the CCITT 'Reverse Charging Acceptance' feature for DNAs in that reverse charged calls are accepted if both attributes are set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incIntlNormalCharge (iin)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming international normal charged calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute also currently controls access to/from the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls (also normal charged) are allowed. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incIntlReverseCharge (iir)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming international reverse charged calls (from the network to the DTE) can be

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made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE.
This attribute also currently controls access to/from the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls (also normal charged) are ***allowed***.
This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.

Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incFastSelect (ifs)

Access	Read only
Criticality	Component
Description	This attribute specifies whether fast select calls may be received. This attribute, if set to a value of ***allowed*** indicates that incoming fast select calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Fast Select Acceptance' feature for DNAs in that incoming fast select calls are accepted if this attribute is set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Ipivc Dna incSameService (iss)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls from the same service type (for example, X.25, ITI, SNA) (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls are cleared by the local DCE. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc

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Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incChargeTransfer (ict)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***yes*** indicates that the charges for incoming normal charged calls from a DTE with the same NIC (calls from the network to the DTE) will be transferred to the called DTE. If set to a value of ***no***, then charges will not be transferred. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	no yes
Default	no

ATTRIBUTE Ipivc Dna incAccess (ina)

Access	Read only
Criticality	Component
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTEs that have Outgoing Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Closed User Group with Incoming Access' feature for DNAs in that incoming access is granted if this attribute is set to a value of ***allowed***.
Mib	IpiVc
Values	disallowed allowed
Default	disallowed

GROUP Ipivc Dna CallOptions

Properties	Provisioned
Description	DnaCallOptions group defines additional options for calls not related directly to direction of a call.

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Mib	IpiVc

ATTRIBUTE Ipivc Dna serviceCategory (cat)

Access	Read only
Criticality	Component
Description	This attribute is computed based on the type of service within which this DNA is configured. It is placed into the Service Category attributes in the accounting record by both ends of the VC.
Mib	IpiVc
Values	gsp x25 enhancedIti ncs mlti sm ici dsp3270 iam mlhi term3270 iti bsi hostIti x75 hdsp3270 api3201 sdlc snaMultiHost redirectionServ trSnaTpad offnetNui gasServer vapServer vapAgent frameRelay ipiVc
Default	ipiVc

ATTRIBUTE Ipivc Dna packetSizes (pks)

Access	Read only
Criticality	Component
Description	This attribute indicates the allowable packet sizes supported for calls setup using this DNA. To set a given packet size to be allowed on the DNA, the packet size is entered, and the corresponding bit in the structure is set to a value of 1. To set a given packet size to be disallowed on the DNA, the

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	packet size is entered preceded with the '~' character, and the corresponding bit in the structure is set to a value of 0. CCITT recommends that packet size 128 always be supported.
Mib	IpiVc
Set of	16 32 64 128 256 512 1024 2048 4096
Default	(2048)

ATTRIBUTE Ipivc Dna defaultRecvFrmNetworkPacketSize (rps)

Access	Read only
Criticality	Component
Description	This attribute indicates the default local receive packet size from network to DTE for all calls using this particular DNA.
Mib	IpiVc
Values	16 32 64 128 256 512 1024 2048 4096
Default	2048

ATTRIBUTE Ipivc Dna defaultSendToNetworkPacketSize (sps)

Access	Read only
Criticality	Component
Description	This attribute indicates the default local send packet size from DTE to network for all calls using this particular DNA.
Mib	IpiVc
Values	16 32 64 128

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256
512
1024
2048
4096

Default 2048

ATTRIBUTE Ipivc Dna defaultRecvFrmNetworkThruputClass (drt)

Access Read only

Criticality Component

Description This attribute indicates the default receive throughput class for all calls using this particular DNA.

Mib IpiVc

Values Decimal (0..15)

Default 10

ATTRIBUTE Ipivc Dna defaultSendToNetworkThruputClass (dst)

Access Read only

Criticality Component

Description This attribute indicates the default send throughput class for all calls using this particular DNA.

Mib IpiVc

Values Decimal (0..15)

Default 10

ATTRIBUTE Ipivc Dna defaultRecvFrmNetworkWindowSize (rws)

Access Read only

Criticality Component

Description This attribute indicates the default number of data packets that can be received by the DTE from the DCE before more packets can be received. This view is oriented with respect to the DTE.

Mib IpiVc

Values Decimal (1..7)

Default 2

ATTRIBUTE Ipivc Dna defaultSendToNetworkWindowSize (sws)

Access Read only

Criticality Component

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Description	This attribute indicates the number of data packets that can be transmitted from the DTE to the DCE and must be acknowledged before more packets can be transmitted.
Mib	IpiVc
Values	Decimal (1..7)
Default	2

ATTRIBUTE Ipivc Dna packetSizeNegotiation (psn)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***local*** indicates that packet sizes can be negotiated locally at the interface irrespective of the remote interface. If set to a value of ***endToEnd***, then local negotiation is not permitted and packet sizes are negotiated between both ends of the VC.
Mib	IpiVc
Values	endToEnd local
Default	local

ATTRIBUTE Ipivc Dna accountClass (acl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator. This attribute is returned by the local VC in the accounting record for all calls setup using this particular DNA.
Mib	IpiVc
Values	Decimal (0..255)
Default	0

ATTRIBUTE Ipivc Dna serviceExchange (sre)

Access	Read and write
Criticality	Component
Description	This attribute is an arbitrary number, Data Service Exchange, as entered by the network operator and reported in accounting record. It is converted into an internal 8-bit integer value for use in the accounting record as well as in various X.25 and X.75 Tariff utilities.

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Mib	IpiVc
Values	Decimal (0..255)
Default	0

ATTRIBUTE Ipivc Dna cugFormat (cft)

Access	Read only
Criticality	Component
Description	This attribute specifies which cug format is used when DTE signals CUG indices, basic or extended. This attribute, if set to a value of ***extended*** indicates that the DTE signals and receives CUG indices in extended CUG format. If set to a value of ***basic***, then the DTE signals and receives CUG indices in the basic CUG format.
Mib	IpiVc
Values	basic extended
Default	basic

ATTRIBUTE Ipivc Dna cug0AsNonCugCall (cnc)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that when a CUG index of 0 is signaled in a call request packet, the call is treated as a non-CUG call. If this attribute is set to a value of ***disallowed***, then a CUG index of 0 is treated as an index, and an attempt is made to find the particular CUG corresponding with the DNA.
Mib	IpiVc
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Ipivc Dna fastSelectCallsOnly (fso)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***yes***, indicates that the service is permitted restricted fast select calls only in both the incoming and the outgoing directions using this DNA. If set to a value of ***no***, then non fast select calls are permitted as well.
Mib	IpiVc

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Values	no yes
Default	no

COMPONENT Ipivc Dna ClosedUserGroup (Cug)

Groups	GROUP Ipivc Dna Cug CugOptions
Scope	Application
Description	*IpiVc Dna Cug* Closed User Group options defines options associated with national or international Cug Identifier. Other DNAs in the network can have CUGs defined which groups these DNAs by CUG Interlock Code. If DNAs are defined with CUGs, calls from DNAs that do not have the same interlock code are refused. Attributes *incAccess* and *outAccess* can override this rule.
Mib	IpiVc
Common Verbs	Help List Display

GROUP Ipivc Dna Cug CugOptions

Properties	Provisioned
Description	This group defines options for Dna closed user group. Attributes in this group define options associated with interlockCode. Dna's with the same Cug (interlockCode) can make calls within this group. Various combinations which permit or prevent calls in the same Cug group are defined here.
Mib	IpiVc

ATTRIBUTE Ipivc Dna Cug type

Access	Read and write
Description	This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTEs for which there is no X.75 Gateway between. (National CUGs cannot normally traverse an X.75 Gateway). If this attribute is set to ***national***, then the CUG is a national CUG, in which case, the DNIC should be left at its default value of BCD.0000 since it is not part of a national CUG. If this attribute is set to ***international***, then the CUG is an international CUG, in which case, the DNIC should be set appropriately as part of the CUG interlock code.
Mib	IpiVc

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Values	national international
Default	national

ATTRIBUTE Ipivc Dna Cug dnic

Access	Read and write
Description	This attribute specifies the DNIC (Data Network ID Code) of the Cug by which packet networks are identified if the Cug is an International Cug - it is specified as 4 BCD digits. This attribute is not applicable if the Cug is a National Cug, as specified by the Cug TYPE attribute. There are usually 1 or 2 DNICs assigned per country, for public networks. The U.S. is an exception where each BOC has a DNIC. Also, a group of private networks can have its own DNIC. DNIC value is not an arbitrary number. It is assigned by international agreement and controlled by CCITT.
Mib	IpiVc
Values	BCD (4)
Default	0000

ATTRIBUTE Ipivc Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the Cug Identifier of a national or international Cug call. It is an arbitrary number and it also can be called Cug in some descriptions. Interfaces (DNAs) defined with this number can make calls to DNAs with the same interlock code.
Mib	IpiVc
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Ipivc Dna Cug outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE into the network) can be made using this particular CUG. If set to a value of ***disallowed***, then outgoing calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Outgoing Calls Barred' feature for CUGs in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed

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Default	disallowed

ATTRIBUTE Ipivc Dna Cug incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular CUG. If set to a value of ***disallowed***, then incoming calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Incoming Calls Barred' feature for CUGs in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna Cug privileged (pri)

Access	Read and write
Description	This attribute, if set to a value of ***yes*** indicates that this CUG is a privileged CUG. In DPN, at least one side of a call setup within a CUG must have the CUG as a privileged CUG. If set to a value of ***no***, then the CUG is not privileged. If both the local DTE and the remote DTE subscribe to the CUG, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTEs in which case the other DTEs cannot call one another, but can call the host. In this example, the host would have the privileged CUG, and the other DTEs would belong to the same CUG, but it would not be privileged.
Mib	IpiVc
Values	no yes
Default	yes

COMPONENT Ipivc DefaultRoute (Dr)

Groups	GROUP Ipivc Dr Provisioned (Prov)
Scope	Application
Description	IpiVc DefaultRoute This component contains information for setting up a default route on the IpiVc service.The default route feature permits establishment of a TCP/IP

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connection to the Software Distribution (SDS).

Mib	IpiVc
Common Verbs	Help List Display Add DELete

GROUP Ipivc Dr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for setting up a default route on the IpiVc service.
Mib	IpiVc

ATTRIBUTE Ipivc Dr callingIpAddress (ipa)

Access	Read and write
Criticality	Component
Description	The field specifies the IP Address of the remote end, which issues the X.25 call.
Mib	IpiVc
Values	IP address
Default	0.0.0.0

ATTRIBUTE Ipivc Dr callingNumberingPlanIndicator (npi)

Access	Read and write
Criticality	Component
Description	This field specifies the numbering plan of the address.
Mib	IpiVc
Values	x121 e164
Default	x121

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ATTRIBUTE Ipivc Dr callingDataNetworkAddress (dna)

Access	Read and write
Criticality	Component
Description	This field specifies the address (in Binary Coded Decimal BCD format) assigned to the remote end.
Mib	IpiVc
Values	BCD (1..15)
Default	No default

COMPONENT Ipivc LogicalChannelNumber (Lcn)

Instance	Decimal (16..39)
Groups	GROUP Ipivc Lcn OsiState (State) GROUP Ipivc Lcn Operational (Oper)
Scope	Application
Description	IpiVc Lcn/<n> The Logical Channel Number responsible for the logical connection with the VC. There can be up to 24 instances of Lcn on the IpiVc component.
Mib	IpiVc
Dyn. Subcomp.	COMPONENT Ipivc Lcn Vc
Common Verbs	Help List Display LOCK Unlock

GROUP Ipivc Lcn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpiVc

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ATTRIBUTE Ipivc Lcn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	IpiVc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ipivc Lcn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	IpiVc
Values	enabled (ena) disabled (dis)
Default	disabled

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ATTRIBUTE Ipivc Lcn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	IpiVc
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Ipivc Lcn availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

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The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	IpiVc
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Ipivc Lcn proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The

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operationalState is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: IpiVc

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Ipivc Lcn controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	IpiVc
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Ipivc Lcn alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	IpiVc
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Ipivc Lcn standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: IpiVc

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Ipivc Lcn unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: IpiVc

Values:
false
true

Default: false

GROUP Ipivc Lcn Operational (Oper)

Properties: Operational

Description:
This group contains status of the internal IP network interface.

Mib: IpiVc

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ATTRIBUTE Ipivc Lcn ipInterfaceDevice (iolfD)

Access	Read only
Description	The status of the internal IP network interface is *inactive* until an IP packet is exchanged between a Network Management Station and the internal IP network interface (via the LCN). At this point, the status changes to *active*.
Mib	IpiVc
Values	inactive active
Default	inactive

ATTRIBUTE Ipivc Lcn remoteIpAddress (rmtIpa)

Access	Read only
Description	This attribute specifies the IP address of the remote network device connected to this interface. The destinationIpAddress default is 0.0.0.0, until the first data packet is received from the remote end.
Mib	IpiVc
Values	IP address
Default	0.0.0.0

ATTRIBUTE Ipivc Lcn packetsSent (pktS)

Access	Read only
Description	This attribute counts the number of IP packets sent from this interface.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ipivc Lcn packetsReceived (pktRx)

Access	Read only
Description	This attribute counts the number of IP packets received from the remote network device.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ipivc Lcn discardTxPackets (discTxPkt)

Access	Read only

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Description	This attribute counts the number of IP packets destined to the remote end which were discarded by the interface.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ipivc Lcn discardRcvPackets (discRxPkt)

Access	Read only
Description	This attribute counts number of IP packets received from the remote end which were discarded by this interface.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ipivc Lcn Vc

Groups	GROUP Ipivc Lcn Vc CallData (Cad) GROUP Ipivc Lcn Vc IntervalData (Intd) GROUP Ipivc Lcn Vc Statistics (Stats)
Scope	Application
Description	*... Vc()* This component defines display of general Vc dynamic attributes
Mib	IpiVc
Common Verbs	Help List Display

GROUP Ipivc Lcn Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to General *Vc*. It can be displayed only for General *Vc* which is created by application.
Mib	IpiVc

ATTRIBUTE Ipivc Lcn Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc*** or ***svc***. *type* is provided at provisioning time.
Mib	IpiVc

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Values	pvc svc
Default	No default

ATTRIBUTE Ipivc Lcn Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	IpiVc
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Ipivc Lcn Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	IpiVc
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Ipivc Lcn Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	IpiVc

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Values	Decimal (0..255)
Default	No default

ATTRIBUTE Ipivc Lcn Vc **previousDiagnosticCode**

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	IpiVc
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Ipivc Lcn Vc **calledNpi**

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	IpiVc
Values	x121 e164
Default	No default

ATTRIBUTE Ipivc Lcn Vc **calledDna**

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	IpiVc
Values	BCD (1..15)
Default	No default

ATTRIBUTE Ipivc Lcn Vc **calledLcn**

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	IpiVc
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Ipivc Lcn Vc **callingNpi**

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Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	IpiVc
Values	x121 e164
Default	No default

ATTRIBUTE Ipivc Lcn Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	IpiVc
Values	BCD (1..15)
Default	No default

ATTRIBUTE Ipivc Lcn Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	IpiVc
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Ipivc Lcn Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	IpiVc
Values	yes no
Default	No default

ATTRIBUTE Ipivc Lcn Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	IpiVc

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Values	yes no
Default	No default

ATTRIBUTE Ipivc Lcn Vc localRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	IpiVc
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Ipivc Lcn Vc localTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	IpiVc
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Ipivc Lcn Vc localTxWindowSize

Access	Read only
Description	This attribute displays the send window size provided on incoming call packets or the default when a call request packet does not explicitly provide the window size.
Mib	IpiVc

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Values	Decimal (0..127)
Default	No default

ATTRIBUTE Ipivc Lcn Vc localRxWindowSize

Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets or the default when a call request does not explicitly provide the window sizes.
Mib	IpiVc
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Ipivc Lcn Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	IpiVc
Values	high normal
Default	No default

ATTRIBUTE Ipivc Lcn Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	IpiVc
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Ipivc Lcn Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	IpiVc
Values	normal high
Default	No default

ATTRIBUTE Ipivc Lcn Vc segmentSize

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Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	IpiVc
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of the data packets on this *Vc*.
Mib	IpiVc
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetTxWindowSize

Access	Read only
Description	This attribute displays the current send window size of *Vc*.
Mib	IpiVc
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of receive packets.
Mib	IpiVc
Values	unknown 16 32 64 128

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256
512
1024
2048
4096

Default — No default

ATTRIBUTE Ipivc Lcn Vc subnetRxWindowSize

Access — Read only

Description — This attribute displays the receive window size provided on incoming call packets and to the default when a call request does not explicitly provide the window sizes.

Mib — IpiVc

Values — Decimal (0..4096)

Default — No default

ATTRIBUTE Ipivc Lcn Vc maxSubnetPktSize

Access — Read only

Description — This attribute displays the maximum packet size allowed on *Vc*.

Mib — IpiVc

Values — Decimal (0..4096)

Default — No default

ATTRIBUTE Ipivc Lcn Vc transferPriorityToNetwork

Access — Read only

Description — This attribute displays the priority in which data is transferred to the network.

The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority.

Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput).

When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay.

When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput.

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Mib	IpiVc
Values	normal high
Default	No default

ATTRIBUTE Ipivc Lcn Vc transferPriorityFromNetwork

Access	Read only
Description	This attribute displays the priority in which data is transferred from the network. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, and the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, and the routing metric is set to throughput.
Mib	IpiVc
Values	normal high
Default	No default

GROUP Ipivc Lcn Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	IpiVc

ATTRIBUTE Ipivc Lcn Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	IpiVc
Values	Decimal (0..16777215)

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Default	No default

ATTRIBUTE Ipivc Lcn Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	IpiVc
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Ipivc Lcn Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	IpiVc
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Ipivc Lcn Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	IpiVc
Values	Time (DHMS)
Default	No default

ATTRIBUTE Ipivc Lcn Vc callReferenceNumber

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Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

GROUP Ipivc Lcn Vc Statistics (Stats)

Properties	Operational
Description	*... Statistics(Stats)* This group defines general attributes collected by general *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods.
Mib	IpiVc

ATTRIBUTE Ipivc Lcn Vc ackStackingTimeouts

Access	Read only
Description	This attribute counts the number of ack stacking timer expiries. It is used as an indicator of the acknowledgment behavior across the subnet when ack stacking is in effect. If it expires often, usually this means end users will experience longer delay. The ack stacking timer specifies how long the *Vc* will wait before finally sending the subnet acknowledgment. if this attribute is set to a value of 0, then the *Vc* will automatically return acknowledgment packets without delay. If this attribute is set to a value other than zero, then the *Vc* will wait for this amount of time in an attempt to piggyback the acknowledgment packet on another credit or data packet. If the *Vc* cannot piggyback the acknowledgment packet within this time, then the packet is returned without piggybacking.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc outOfRangeFrmFromSubnet

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Access	Read only
Description	This attribute counts the number of subnet frames discarded due to the sequence number being out of range. Two Categories apply for the General *Vc* 1) lost Acks (previous Range) 2) unexpected Packets (next Range) *Vc* internally maintains its own sequence number of packet order and sequencing. Due to packet retransmission, *Vc* may receive duplicate packets that have the same *Vc* internal sequence number. Only 1 copy is accepted by the *Vc* and other copies of the same packets are detected through this count. This attribute can be used to record the frequency of packet retransmission due to *Vc* and other part of the subnet.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc duplicatesFromSubnet

Access	Read only
Description	This attribute counts the number of subnet packets discarded due to duplication. It is used to detect software error fault or duplication caused by retransmitting.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc frmRetryTimeouts

Access	Read only
Description	This attribute counts the number of frames which have retransmission time-out. If packets from *Vc* into the subnet are discarded by the subnet, the source *Vc* will not receive any acknowledgment. The retransmission timer then expires and packets will be retransmitted again. Note that the *Vc* idle probe may be retransmitted and is included in this count. This statistics does not show the distribution of how many times packets are retransmitted (e.g. first retransmission results in successful packet forwarding).
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc peakRetryQueueSize

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Access	Read only
Description	This attribute indicates the peak size of the retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest body of unacknowledged packets.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc peakOoSeqQueueSize

Access	Read only
Description	This attribute indicates the peak size of the out of sequence queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute indicates the peak size of the sequence packet queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets, which by the receipt of an expected packet have been transformed to expected packets. The number of times this peak is reached is not recorded as it is traffic dependent.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc peakStackedAcksRx

Access	Read only
Description	This attribute indicates the peak size of wait acks. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest collective acknowledgment.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetRecoveries

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Access	Read only
Description	This attribute counts the number of successful *Vc* recovery attempts. This attribute is used as an indicator of how many times the *Vc* path is broken but can be recovered. This attribute is useful to record the number of network path failures.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc windowClosuresToSubnet

Access	Read only
Description	This attribute counts the number of window closures to subnet. A packet may have been sent into the subnet but its acknowledgment from the remote *Vc* has not yet been received. This is a 8 bit sequence number.This number is useful in detecting whether the *Vc* is sending any packet into the subnet.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc windowClosuresFromSubnet

Access	Read only
Description	This attribute counts the number of window closures from subnet. This attribute is useful in detecting whether the *Vc* is receiving any packet from the subnet.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc wrTriggers

Access	Read only
Description	This attribute displays the number of times the *Vc* stays within the W-R region. The W-R region is a value used to determined the timing of credit transmission. Should the current window size be beneath this value, the credits will be transmitted immediately. Otherwise, they will be transmitted later with actual data. The wrTriggers statistic is therefore used to analyze the flow control and credit mechanism.
Mib	IpiVc
Values	Decimal (0..5000)

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Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Ipivc

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Nortel Multiservice Switch 7400, 15000, 20000

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COMPONENT IuPc (IuPc)

Instance	Decimal (1..1)
Groups	GROUP IuPc OsiState (State)
Scope	Application
Description	*IuPc* This component represents the interface used for terminating PCAP messaging from the SAS for A-GPS services.
Mib	IuPcRnc
Opt. Subcomp.	COMPONENT IuPc SignallingBearer (SignallingBearer)
Common Verbs	Help List Display Add DELete

GROUP IuPc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IuPcRnc

ATTRIBUTE IuPc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — IuPcRnc

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE IuPc operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — IuPcRnc

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE IuPc usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — IuPcRnc

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Values	idle active (activ) busy
Default	idle

COMPONENT IuPc SignallingBearer (SignallingBearer)

Scope	Application
Description	*IuPc SignallingBearer* This subcomponent under IuPc is the parent component for all transport types for IuPc.
Mib	IuPcRnc
Opt. Subcomp.	COMPONENT IuPc SignallingBearer Tal (Tal)
Common Verbs	Help List Display Add DELete

COMPONENT IuPc SignallingBearer Tal (Tal)

Groups	GROUP IuPc SignallingBearer Tal Provisioned (Prov) GROUP IuPc SignallingBearer Tal OsiState (State)
Scope	Application
Description	*IuPc SignallingBearer Tal* This is the subcomponent under IuPc SignallingBearer that represents the TCP adaptation Layer transport type for IuPc. Tal is the parent component for all TalIp subcomponents.
Mib	IuPcRnc
Opt. Subcomp.	COMPONENT IuPc SignallingBearer Tal TalIp (TalIp)
Common Verbs	Help List Display Add DELete

GROUP IuPc SignallingBearer Tal Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IuPc SignallingBearer Tal* component.
Mib	IuPcRnc

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ATTRIBUTE IuPc SignallingBearer Tal **txHeartbeatInterval**

Access	Read: All Write: All
Description	This attribute represents the time, in seconds, that the NI waits to send Heartbeat signals to the SAS IP's. Setting this attribute to 0.0 disables the Heartbeat on the NI.
Mib	IuPcRnc
Values	Decimal (0.0..600.0)
Default	0.5

ATTRIBUTE IuPc SignallingBearer Tal **rxHeartbeatInterval**

Access	Read: All Write: All
Description	This attribute represents the time, in seconds, that the NI waits to receive Heartbeat signals or any other transmission from the SAS IP's. If this limit is exceeded, the NI presumes the connection has been lost and attempts a reconnect.
Mib	IuPcRnc
Values	Decimal (0.0..600.0)
Default	2.0

ATTRIBUTE IuPc SignallingBearer Tal **nilp**

Access	Read: All Write: All
Description	This attribute represents a list of IP addresses for the Network Interface.
Mib	IuPcRnc
List of	IP address
List Size	2
Default	No default

GROUP IuPc SignallingBearer Tal **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IuPcRnc

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ATTRIBUTE IuPc SignallingBearer Tal adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IuPcRnc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE IuPc SignallingBearer Tal operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IuPcRnc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE IuPc SignallingBearer Tal usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	IuPcRnc
Values	idle active (activ) busy
Default	idle

COMPONENT IuPc SignallingBearer Tal TalIp (TalIp)

Instance	Decimal (1..6)
Groups	GROUP IuPc SignallingBearer Tal TalIp Provisioned (Prov) GROUP IuPc SignallingBearer Tal TalIp OsiState (State) GROUP IuPc SignallingBearer Tal TalIp Statistics (Stats)
Scope	Application
Description	*IuPc SignallingBearer Tal TalIp/n* This component represents a specific SAS IP address for the *IuPc SignallingBearer Tal* on the RNC.
Mib	IuPcRnc
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP IuPc SignallingBearer Tal TalIp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *TalIp* component.
Mib	IuPcRnc

ATTRIBUTE IuPc SignallingBearer Tal TalIp saslp

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies IP address for the SAS connection.

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Mib	IuPcRnc
Values	IP address
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal Tallp **ipPortNumber (ipPort)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies port number for the SAS IP connection.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	9521

ATTRIBUTE IuPc SignallingBearer Tal Tallp **preferenceNumber (preferenceNumber)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute represent the weight given to this SAS IP for load balancing purposes. It is the the range 1 through 5, with 1 being the highest priority and 5 being the lowest. Default value is 3.
Mib	IuPcRnc
Values	Decimal (1..5)
Default	3

GROUP IuPc SignallingBearer Tal Tallp **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IuPcRnc

ATTRIBUTE IuPc SignallingBearer Tal Tallp **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock*

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command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — IuPcRnc

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE IuPc SignallingBearer Tal TalIp **operationalState (osiOper)**

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — IuPcRnc

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE IuPc SignallingBearer Tal TalIp **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	IuPcRnc
Values	idle active (activ) busy
Default	idle

GROUP IuPc SignallingBearer Tal Tallp Statistics (Stats)

Properties	Operational
Description	This group contains the provisioned attributes for the *Tallp* component.
Mib	IuPcRnc

ATTRIBUTE IuPc SignallingBearer Tal Tallp talConnectionAttempts

Access	Read only
Description	This attribute specifies the number of Tal Connection Attempts that have been made.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal Tallp talSuccessfulConnections

Access	Read only
Description	This attribute specifies the number of Tal Connection Attempts that have succeeded.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal Tallp talMessagesSent

Access	Read only
Description	This attribute specifies the number of messages that have been sent to the SAS (not including Heartbeat messages.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal Tallp talMessagesReceived

Access	Read only

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Description	This attribute specifies the number of messages that have been received from the SAS (not including Heartbeat messages).
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal TalIp talHeartbeatsSent

Access	Read only
Description	This attribute specifies the number of heartbeat messages that have been sent to the SAS.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal TalIp talHeartbeatsReceived

Access	Read only
Description	This attribute specifies the number of heartbeat messages that have been received from the SAS.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal TalIp talHeartbeatsNotReceived

Access	Read only
Description	This attribute specifies the number of heartbeat receive intervals in which a heartbeat message was not received.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal TalIp talHeartbeatFailures

Access	Read only
Description	This attribute specifies the number of connections dropped due to not receiving a heartbeat in a number of heartbeat receive intervals.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

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ATTRIBUTE IuPc SignallingBearer Tal TalIp **talContinuousHeartbeats**

Access	Read only
Description	This attribute specifies the number of heartbeats received since this connection was established.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal TalIp **talMessagesInIntervalHistogram0**

Access	Read only
Description	This attribute specifies the number of 0 messages were received in a heartbeat interval.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal TalIp **talMessagesInIntervalHistogram1**

Access	Read only
Description	This attribute specifies the number of 1 message was received in a heartbeat interval.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal TalIp **talMessagesInIntervalHistogram2**

Access	Read only
Description	This attribute specifies the number of 2 messages were received in a heartbeat interval.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE IuPc SignallingBearer Tal TalIp **talMessagesInIntervalHistogram3**

Access	Read only
Description	This attribute specifies the number of 3 messages were received in a heartbeat interval.
Mib	IuPcRnc

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Values	Decimal (0..65535)
Default	No default

ATTRIBUTE **IuPc SignallingBearer Tal TalIp talMessagesInIntervalHistogram4**

Access	Read only
Description	This attribute specifies the number of 4 or more messages were received in a heartbeat interval.
Mib	IuPcRnc
Values	Decimal (0..65535)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - IuPc

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Components Reference - luxIf

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COMPONENT IuxInterface (IuxIf)

Instance	Decimal (1..16383)
Groups	GROUP IuxIf CustomerIdentifierData (CidData) GROUP IuxIf Provisioned (Prov) GROUP IuxIf OsiState (State)
Scope	Application
Description	*IuxInterface/n* This component represents the UTRAN Interface. A particular instance represents either an Iub interface, an Iur Interface, or an Iucs interface. On U-Plane, the *Path* subcomponents represent the individual AAL2 paths within this UTRAN interface. On C-Plane, the *SignallingBearer* components represent the bearers for AAL5 terminated traffic.
Mib	IuxIfRnc
Opt. Subcomp.	COMPONENT IuxIf Path COMPONENT IuxIf SignallingBearer (Sig)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP IuxIf CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	IuxIfRnc

ATTRIBUTE IuxIf customerIdentifier (cid)

Access	Read and write

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Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	IuxIfRnc
Values	Decimal (0; 1..8191)
Default	0

GROUP IuxIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *IuxIf* component.
Mib	IuxIfRnc

ATTRIBUTE IuxIf commentText

Access	Read and write
Description	This attribute specifies an arbitrary string whose use is left to the discretion of the system administrator. It is not used by the system. For example, this attribute could be used to specify the type of interface (for example, Iub, Iur, or Iucs) or the name of the Node B, remote RNC, or SGSN endpoint which is logically connected to this Iu interface.
Mib	IuxIfRnc
Values	String (0..60, ASCII)
Default	""

ATTRIBUTE IuxIf loadBalancingMethod (lb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the load balancing scheme to be used by the system when distributing the paths of this *IuxIf* component across the protocol converter type '*Lp Ap Rnc*' device. The value ***spread*** means the

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paths of this *IuxIf* component are assigned to the protocol converter in a round-robin fashion. The value ***weighted*** means the paths of this *IuxIf* component are assigned to the protocol converter based on the expected traffic load of this *IuxIf*. The suggested value for SGSN and remote RNC is ***spread***. The suggested value for Node B is ***weighted***.

Mib	IuxIfRnc
Values	spread weighted
Default	weighted

ATTRIBUTE IuxIf weight

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected traffic load from the far-end equipment attached to this UTRAN interface relative to other interfaces. It is used by the system for load balancing when using the ***weighted*** method. A larger value represents a larger traffic load.
Mib	IuxIfRnc
Values	Decimal (0..1000)
Default	500

GROUP IuxIf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IuxIfRnc

ATTRIBUTE IuxIf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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	was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	luxIfRnc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE luxIf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	luxIfRnc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE luxIf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	luxIfRnc
Values	idle active (activ) busy

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Default	idle

COMPONENT IuxIf Path

Instance	Decimal (1..65535)
Groups	GROUP IuxIf Path Provisioned (Prov) GROUP IuxIf Path OsiState (State) GROUP IuxIf Path Operational (Oper)
Scope	Application
Description	*IuxIf/n Path/n* This component represents an ATM AAL2 path within this UTRAN interface. Each path is associated with an ATM PVC endpoint.
Mib	IuxIfRnc
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP IuxIf Path Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Path* component.
Mib	IuxIfRnc

ATTRIBUTE IuxIf Path atmConnection

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint that this path will use. For example, *AtmIf/n Vcc/vpi.vci Nep.*
Mib	IuxIfRnc
Values	Link (Hardware, applicationName)
Default	No default

ATTRIBUTE IuxIf Path qos

Access	Read and write
Criticality	Component
Description	This attribute specifies the QoS (Quality of Service) for this path.

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Mib	luxIfRnc
Values	Decimal (0..3)
Default	0

ATTRIBUTE luxIf Path pathOwner

Access	Read and write
Criticality	Component
Description	This attribute is used to select the owner of the path according to Q.2630.1. On a path between two RNC nodes, this attribute is used to select the order of CID allocation to reduce the probability of collisions. The RNC node which is configured as the owner of this path allocates CIDs from 8 upwards. The RNC node which is not configured as the owner of this path allocates CIDs from 255 downwards. To reduce the probability of CID collision, the RNCs at each end of an Iur interface should have this attribute set to different values. This attribute is only meaningful to the Iur interface. It is not used by other Iu interfaces.
Mib	luxIfRnc
Values	yes no
Default	yes

GROUP luxIf Path OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	luxIfRnc

ATTRIBUTE luxIf Path adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting

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down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	IuxIfRnc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE IuxIf Path operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IuxIfRnc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE IuxIf Path usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IuxIfRnc
Values	idle active (activ) busy
Default	idle

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GROUP IuxIf Path Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Path* component.
Mib	IuxIfRnc

ATTRIBUTE IuxIf Path remoteBlockingStatus

Access	Read only
Description	This attribute indicates if this path is remotely blocked or not within this UTRAN interface. The path is remotely blocked if it is locked by the remote node.
Mib	IuxIfRnc
Values	blocked unblocked
Default	No default

ATTRIBUTE IuxIf Path localBlockingStatus

Access	Read only
Description	This attribute indicates whether this path is locally blocked or not within this UTRAN interface. The path is locally blocked if it is locked by the local node.
Mib	IuxIfRnc
Values	blocked unblocked
Default	No default

COMPONENT IuxIf SignallingBearer (Sig)

Instance	Decimal (0..6)
Scope	Application
Description	*IuxIf/n Sig/n* This component represents the C-Plane part of the UTRAN interface. An instance of it can be the SAAL-UNI connection used for the Iub.
Mib	IuxIfRnc
Opt. Subcomp.	COMPONENT IuxIf Sig SaalUni
Common Verbs	Help List Display Add DELete

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COMPONENT IuxIf Sig SaalUni

Groups	GROUP IuxIf Sig SaalUni OsiState (State)
Scope	Application
Description	*IuxIf/n Sig/m SaalUni* This component represents an Signalling ATM Adaptation Layer User-Netowrk Interface for a particular Signalling Bearer within this UTRAN interface.
Mib	IuxIfRnc
Opt. Subcomp.	COMPONENT IuxIf Sig SaalUni NailedupAccessPoint (Nap)
Common Verbs	Help List Display Add DELete

GROUP IuxIf Sig SaalUni OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IuxIfRnc

ATTRIBUTE IuxIf Sig SaalUni adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	luxIfRnc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE luxIf Sig SaalUni operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	luxIfRnc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE luxIf Sig SaalUni usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	luxIfRnc
Values	idle active (activ) busy
Default	idle

COMPONENT luxIf Sig SaalUni NailedupAccessPoint (Nap)

Groups	GROUP luxIf Sig SaalUni Nap Provisioned (Prov)
Scope	Application

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Description	*IuxIf/n Sig/m SaalUni Nap* This component is used to link AAL5 represents an Signalling ATM Adaptation Layer User-Netowrk Interface for a particular Signalling Bearer within this UTRAN interface.
Mib	IuxIfRnc
Common Verbs	Help List Display Add DELete

GROUP IuxIf Sig SaalUni Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *NailedupAccessPoint* component.
Mib	IuxIfRnc

ATTRIBUTE IuxIf Sig SaalUni Nap atmConnection

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint that this path will use. For example, *AtmIf/n Vcc/vpi.vci Nep.*
Mib	IuxIfRnc
Values	Link (Hardware, applicationName)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - luxlf

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Lac

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COMPONENT Layer2TunnelingProtocolAccessConcentrator (Lac)

Instance	Decimal (1..15)
Groups	GROUP Lac Provisioned (Prov) GROUP Lac Operational (Oper) GROUP Lac CustomerIdentifierData (CidData)
Scope	Application
Description	*Layer2TunnelingProtocolAccessConcentrator/n* This component represents the Layer 2 Tunneling Protocol (L2TP) functionality on a Logical Processor. This component behaves as an L2TP Access Concentrator (LAC). An instance of this component is provisioned for each Logical Processor that is to have L2TP functionality.
Mib	WirelessL2tp
Subcomponents	COMPONENT Lac L2tpNetworkServer (Lns)
Common Verbs	Help List Display Add DELete

GROUP Lac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Lac* component.
Mib	WirelessL2tp

ATTRIBUTE Lac linkToUdpPort (lToPort)

Access	Read: All Write: All

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Description	This attribute specifies a link to the *GprsIpServer IpAddress Udp Port* component. The IP address specified becomes the source IP address and the UDP port specified becomes the source port for communication with the external LNS. Changing this value causes the *Lac* to reset its communication links with the *GprsIpServer*. Transactions being processed may be affected.
Mib	WirelessL2tp
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Lac linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the link to a Logical Processor that this *Lac* is to use.
Mib	WirelessL2tp
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Lac hostName (host)

Access	Read: All Write: All
Description	This attribute specifies the host name the *Lac* component uses in communication with the external LNS. The host name will be sent in the Host Name Attribute Value Pair (AVP) and may be used by the external LNS for tunnel authentication. It is recommended that all host names be distinct.
Mib	WirelessL2tp
Values	String (0..80, ASCII)
Default	""

GROUP Lac Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the LAC.
Mib	WirelessL2tp

ATTRIBUTE Lac vendorName (vName)

Access	Read: All Write: Illegal

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Description	This attribute identifies the vendor name of the L2TP protocol stack. This information is communicated to the external LNS in the Vendor Name Attribute Value Pair (AVP).
Mib	WirelessL2tp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Lac firmwareRev (firmRev)

Access	Read: All Write: Illegal
Description	This attribute identifies defines the firmware or software revision for the L2TP protocol stack. This information is communicated to the external LNS in the Firmware Revision Attribute Value Pair (AVP).
Mib	WirelessL2tp
Values	Decimal (0..2147483646)
Default	No default

ATTRIBUTE Lac protocolVersion (protoVers)

Access	Read: All Write: Illegal
Description	This attribute indicates the supported L2TP protocol version and revision numbers. Supported versions are identified in the form of version.revision.
Mib	WirelessL2tp
List of	String (3..7, ASCII)
List Size	10
Default	No default

GROUP Lac CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	WirelessL2tp

ATTRIBUTE Lac customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the

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component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib WirelessL2tp

Values Decimal (0; 1..8191)

Default 0

COMPONENT Lac L2tpNetworkServer (Lns)

Groups
GROUP Lac Lns Provisioned (Prov)
GROUP Lac Lns TunnelProv (Tunnel)
GROUP Lac Lns Operational (Oper)
GROUP Lac Lns TunnelStatistics (TunStats)

Scope Application

Description *Lac/n L2tpNetworkServer/n*

This component represents the external L2TP Network Server (LNS) that communicates with the *Lac* component.

Mib WirelessL2tp

Common Verbs
Help
List
Display

GROUP Lac Lns Provisioned (Prov)

Properties Provisioned

Description This group contains miscellaneous provisionable attributes of the *Lac Lns* component.

Mib WirelessL2tp

ATTRIBUTE Lac Lns ipAddress (ipAddr)

Access
Read: All
Write: All

Description This attribute specifies the IP address of the external LNS. The value must not be set to 0.0.0.0.

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Mib	WirelessL2tp
Values	IP address
Default	No default

ATTRIBUTE Lac Lns udpPort (udpPort)

Access	Read: All Write: All
Description	This attribute specifies the UDP port on the external LNS used by this *Lac*. This must match the UDP port provisioned on that LNS.
Mib	WirelessL2tp
Values	Decimal (0..65535)
Default	1701

ATTRIBUTE Lac Lns useLengthField (useLen)

Access	Read: All Write: All
Description	This attribute specifies if the *Lac* should use a length field in L2TP data messages. The value of ***yes*** should be used when compatibility is needed with LNSs that may require the length field to be utilized. Proper operation of L2TP over UDP/IP does not require the length field to be used in data messages.
Mib	WirelessL2tp
Values	yes no
Default	no

ATTRIBUTE Lac Lns useHiddenAvps (hidAvps)

Access	Read: All Write: All
Description	This attribute specifies if the *Lac* should use hidden Attribute Value Pairs (AVPs) in the control messages sent to the LNS. The value of ***no*** is used if the LNS does not support hidden AVPs for all control messages. The value of ***yes*** is permitted if *secret* is not empty.
Mib	WirelessL2tp
Values	yes no
Default	no

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ATTRIBUTE Lac Lns snoopAccm (snoop)

Access	Read: All Write: All
Description	This attribute specifies if the *Lac* should snoop for Asynchronous Control Character Map (ACCM) Link Control Protocol (LCP) packets in the Point-to-Point Protocol (PPP) data stream. Setting this to ***yes*** will allow the L2TP stack to immediately detect any negotiated ACCM changes. This will prevent needlessly dropped PPP packets in the event the LNS's Set Link Info (SLI) message is delayed in transit relative to the time the ACCM negotiation takes effect. Additionally, this option allows operability with LNSs that do not support the L2TP SLI message.
Mib	WirelessL2tp
Values	yes no
Default	yes

GROUP Lac Lns TunnelProv (Tunnel)

Properties	Provisioned
Description	This group contains provisionable attributes describing the configuration requirements for both incoming and outgoing tunnel connection attempts.
Mib	WirelessL2tp

ATTRIBUTE Lac Lns hostName (host)

Access	Read: All Write: All
Description	This attribute specifies the host name of the external LNS. This is the host name expected to be sent by the external LNS in the Host Name Attribute Value Pair (AVP) and may be used to authenticate the LNS.
Mib	WirelessL2tp
Values	String (0..80, ASCII)
Default	""

ATTRIBUTE Lac Lns authentication (auth)

Access	Read: All Write: All
Description	This attribute specifies how the *Lac* authenticates the LNS. The value ***none*** indicates that no authentication is performed. The value ***simple*** indicates that peers are authenticated simply by their host name as described in the Host Name AVP. The value ***challenge*** indicates that all peers are challenged to prove their identification. This mechanism is described in the L2TP protocol specification.

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Mib	WirelessL2tp
Values	none simple challenge
Default	none

ATTRIBUTE Lac Lns secret

Access	Read: Illegal Write: All
Description	This attribute specifies the shared secret used during the tunnel authentication phase of tunnel establishment. This must match the shared secret provisioned on the LNS.
Mib	WirelessL2tp
Values	String (0..255, ASCII)
Default	""

ATTRIBUTE Lac Lns helloInterval (hello)

Access	Read: All Write: All
Description	This attribute specifies the interval in which Hello (or keep-alive) packets are sent by the *Lac* to the external LNS.
Mib	WirelessL2tp
Values	Decimal (0..3600)
Units	seconds
Default	60

ATTRIBUTE Lac Lns idleTimeout (idleTo)

Access	Read: All Write: All
Description	This attribute specifies the period of time that an established tunnel between the *Lac* and the external LNS with no active sessions waits before disconnecting the tunnel. A value of zero indicates that the tunnel disconnects immediately after the last session disconnects. A value of -1 leaves the tunnel up indefinitely.
Mib	WirelessL2tp
Values	Signed (-1..86400)
Units	seconds
Default	-1

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ATTRIBUTE Lac Lns controlRWS (ctlRWS)

Access	Read: All Write: All
Description	This attribute specifies the control channel receive window size for tunnels between the *Lac* and the external LNS. It specifies the maximum number of packets the external LNS can send without waiting for an acknowledgement from the *Lac*.
Mib	WirelessL2tp
Values	Decimal (1..24)
Default	4

ATTRIBUTE Lac Lns maxRetrans (maxReTx)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of retransmissions which the *Lac* attempts for tunnels to the external LNS before assuming that the LNS is no longer responding.
Mib	WirelessL2tp
Values	Decimal (4..32)
Default	5

ATTRIBUTE Lac Lns maxRetransTimeout (maxReTxTo)

Access	Read: All Write: All
Description	This attribute specifies the maximum retransmission timeout interval which the *Lac* waits before retransmitting a control packet that has not been acknowledged by the external LNS.
Mib	WirelessL2tp
Values	Decimal (1..32)
Units	seconds
Default	16

ATTRIBUTE Lac Lns payloadSequencing (payldSeq)

Access	Read: All Write: All
Description	This attribute specifies whether session payload packets are requested to be sent with sequence numbers from the external LNS. The value ***never*** indicates that the *Lac* never initiates sequencing but does sequencing if asked by the external LNS. The value ***always*** indicates that the *Lac* sends

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	the Sequencing Required Attribute Value Pair (AVP) during session establishment.
Mib	WirelessL2tp
Values	never always
Default	always

ATTRIBUTE Lac Lns reassemblyTimeout (reasTo)

Access	Read: All Write: All
Description	This attribute specifies the time the *Lac* waits before processing payload packets that were received out of sequence. A low value increases the chance of delayed packets to be discarded (which may cause the PPP decompression engine to reset) while a high value may cause more queueing and possibly degrade throughput if packets are truly lost. The default value is zero which will result in all delayed packets being lost.
Mib	WirelessL2tp
Values	Decimal (0..2147483646)
Units	msec
Default	0

GROUP Lac Lns Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Lac Lns* component.
Mib	WirelessL2tp

ATTRIBUTE Lac Lns lastErrors (lastErrs)

Access	Read: All Write: Illegal
Description	This attribute gives textual descriptions of the last five tunnel errors. Each description is displayed with a result code, an error code, and and may include a message describing the reason or error.
Mib	WirelessL2tp
Vector of	String (0..255, ASCII)
Index	Decimal (1..5)
Default	No default

GROUP Lac Lns TunnelStatistics (TunStats)

Properties	Operational

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Description	This group contains attributes that are used to describe the current status and statistics of tunnels.
Mib	WirelessL2tp

ATTRIBUTE Lac Lns totalTunnels (totTun)

Access	Read: All Write: Illegal
Description	This attribute counts the tunnels between the *Lac* and the external LNS that have successfully reached the established state. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns failedTunnels (failTun)

Access	Read: All Write: Illegal
Description	This attribute counts the tunnels between the *Lac* and the external LNS that failed to reach the established state. This count includes the failed tunnel authentication attempts as counted by *failedAuthentication.* The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns failedAuthentication (failAuth)

Access	Read: All Write: Illegal
Description	This attribute counts the failed tunnel connection attempts detected locally by the *Lac* and those reported as failed by the external Lns. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns activeTunnels (actTun)

Access	Read: All Write: Illegal
Description	This attribute indicates the tunnels that are currently active between the *Lac* and the external LNS.

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Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns totalSessions (totSes)

Access	Read: All Write: Illegal
Description	This attribute counts the sessions that have successfully reached the established state on the tunnels between the *Lac* and the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns failedSessions (failSes)

Access	Read: All Write: Illegal
Description	This attribute counts the sessions that failed to reach the established state on the tunnels between the *Lac* and the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns activeSessions (actSes)

Access	Read: All Write: Illegal
Description	This attribute indicates the sessions that are currently active on the tunnels between the *Lac* and the external LNS.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns controlRecvOctets (ctlRecvOct)

Access	Read: All Write: Illegal
Description	This attribute counts the control channel octets received by the *Lac* from the external LNS. The counter wraps to zero when it exceeds the maximum value.

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Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns controlRecvPackets (ctlRecvPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the control channel packets received by the *Lac* from the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns controlSendOctets (ctlSndOct)

Access	Read: All Write: Illegal
Description	This attribute counts the contol channel octets that were transmitted by the *Lac* to the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns controlSendPackets (ctlSndPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the control packets that were transmitted by the *Lac* to the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadRecvOctets (payRecvOct)

Access	Read: All Write: Illegal

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Description	This attribute counts the payload channel octets that were received by the *Lac* from the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadRecvPackets (payRecvPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the payload channel packets that were received by the *Lac* from the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadRecvDiscards (payRecvDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the received payload packets that were discarded by the *Lac*. The primary reason for payload packet discards is flow control ocurring due to the difference in the data rates between the slower mobile connection and the faster network connection. Other possible reasons for discards are that payload packets are too big, are badly formed, or are out of sequence. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadSendOctets (paySndOct)

Access	Read: All Write: Illegal
Description	This attribute counts the payload channel octets that were transmitted by the *Lac* to the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Lac Lns payloadSendPackets (paySndPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the payload packets that were transmitted by the *Lac* to the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Lac

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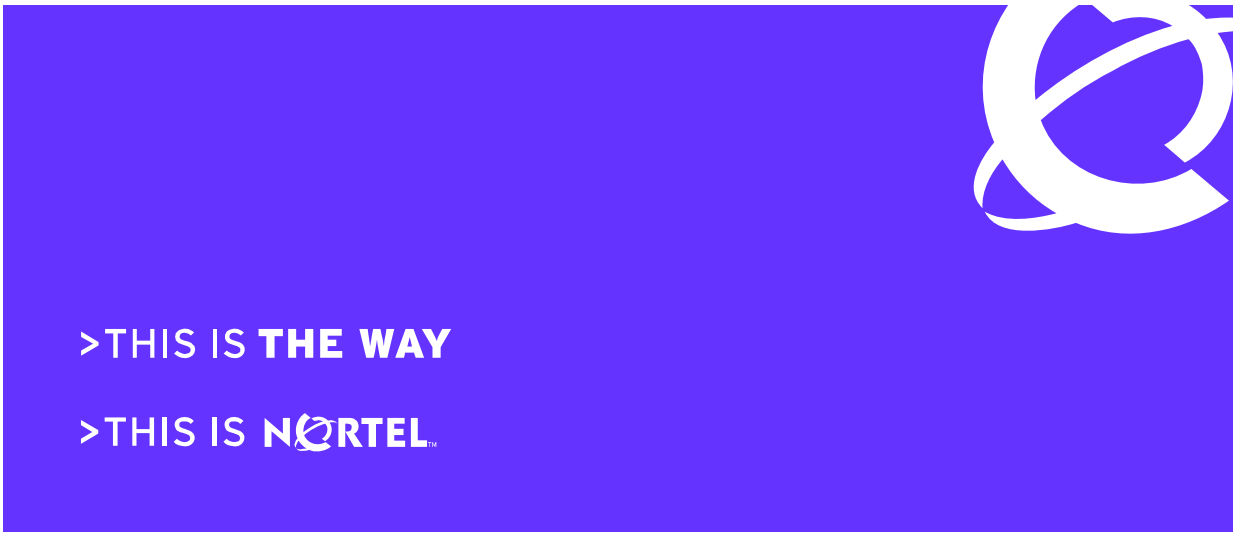

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Laps

NN10600-060

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COMPONENT LineAutomaticProtectionSwitching (Laps)

Instance	Decimal (0..15999)
Groups	GROUP Laps CustomerIdentifierData (CidData) GROUP Laps Provisioned (Prov) GROUP Laps OsiState (State) GROUP Laps Operational (Oper)
Scope	Device
Description	*AutomaticProtectionSwitching/n* This component manages the line protection of a SONET or SDH interface. Line Automatic Protection Switching (LAPS) can switch traffic from an active line onto a standby line when a failure or degradation occurs on the active line. **Note**: The *Lp/n Sonet/m Test* component *or Lp/n Sdh/m Test* component functionality is not supported when that line is provisioned as either working or protection line of the *Laps* component.
Mib	Laps
Opt. Subcomp.	COMPONENT Laps Sts COMPONENT Laps Vc4 COMPONENT Laps CrossConnect (Xc) COMPONENT Laps InverseMultiplexerAtm (Ima)
Common Verbs	Help List Display Add DELete LOCK Unlock

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VERB PROTECTIONLOCKOUT (PROTLOCK) Laps

Impact	Service
Description	*ProtectionLockout Laps/n* This command has different behaviors based on the protocol type which is provisioned. A) The *protocol* attribute is set to ***standard***: This command instructs the *Laps* component to lock out the protection line from being used as the receive active line. If the protection line is active when the *ProtectionLockout* command is entered, the working line is made active even if there is a failure or degradation present on the working line. This command is ignored when the following conditions exist: 1) The *mode* attribute value is set to ***unidirectional*** and a *nearEndRequest* attribute already has a value of ***lockoutOfProtection***. 2) The *mode* attribute value is set to ***bidirectional*** and a *nearEndRequest* attribute or *farEndRequest* attribute already has a value of ***lockoutOfProtection***. B) The *protocol* attribute is set to ***g841AnnexB***: This command instructs the *Laps* component to freeze the selector in its current position such that the receive active line cannot be changed. All requests are ignored while this command is in effect. This command is treated as a local request and is not signaled to the far end. C) The *protocol* attribute is set to ***yProtection***: This command is not applicable when the protocol attribute is set to ***yProtection***. For applicable protocol types, the command remains in effect until it is cancelled with the *Clear* command. This command can only be issued when the *Laps* component is unlocked.

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VERB SWITCH Laps

Impact	Service
Description	*Switch [-force] [-workingToProtection] [-protectionToWorking] Laps/n* This command instructs the *Laps* component to switch the *nearEndRxActiveLine* attribute from the working line to the protection line (or vice versa). While this occurring the *nearEndRequest* attribute value is ***manualSwitch***. If the *-force* option is specified, the *Laps* component is instructed to switch. The *nearEndRequest* attribute value is ***forcedSwitch.*** The *-force* option must always be used when the *Laps protocol* attribute is set to ***g841AnnexB***. The *switch* command, with various options described above, can only be issued if the *Laps* component is unlocked. It remains in effect until it is cancelled either with the *'clear laps/n"* command, or until a higher value for the *nearEndRequest* attribute (or *farEndRequest* attribute if the provisioned *mode* attribute value is set to ***bidirectional***) goes into effect. If the *-workingToProtection* option is specified, the *Laps* component switches the *nearEndRxActiveLine* attribute from the working line to the protection line. If the *-protectionToWorking* option is specified, the *Laps* component switches the *nearEndRxActiveLine* attribute from the protection line to the working line. This command is ignored when the following conditions exist: 1) An equal or higher priority value for the *nearEndRequest* attribute is already in effect 2) An equal or higher priority value for the *farEndRequest* attribute is already in effect if the provisioned *mode* attribute value is set to ***bidirectional***. For the list of request priorities refer to the description for the *Laps nearEndRequest* attribute. This command is not applicable when the protocol attribute is set to ***yProtection***. This command can only be issued when the *Laps* component is unlocked.

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VERB CLEAR Laps

Impact	Service
Description	*Clear Laps/n* This command clears the *nearEndRequest* attribute if the value is ***lockoutOfProtection***, ***forcedSwitch***, or ***manualSwitch***. This command is not applicable when the protocol attribute is set to ***yProtection***. This command can only be issued when the *Laps* component is unlocked.

GROUP Laps CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Laps* component.
Mib	Laps

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ATTRIBUTE Laps workingLine (working)

Access	Read and write
Criticality	Process
Description	This attribute is a link to the *Sonet* or *Sdh* component that provides the *Laps* component's working line (working line one in ITU-T G.841 Annex B terms). This attribute must be set. The *workingLine* attribute and *protectionLine* attribute pairs must be valid. LAPS (Line Automatic Protection Switching) protection can be configured between paired ports on the card or between corresponding ports on adjacent cards. The following semantic checks exist for the *workingLine* and *protectionLine* attributes: The *workingLine* and *protectionLine* attributes can link ports on two different LPs (Logical Processor): - the port number must match (that is, port zero on *Lp*/m must link to port 0 on *Lp*/n, and so forth). - the *Sonet* or *Sdh* components specified by the link must not have a *Sts* or *Vc4* component. - each *Lp* must link to exactly one card (that is, the *spareCard* attribute is not allowed to be set on either *Lp).* - each *Lp* must link to the same type of card (that is, the *shelf card/n cardType* attribute must be identical for both cards). - the two cards must be in adjacent slots in the shelf, with the lower-numbered slot being an even number. - each *Lp* must link to the same *LogicalProcessorType* component. - if the two lines of the protection pair are on different *Lps*, then the *connectionPoolCapacity* attribute value of the *Lp Eng Arc Ov* components for the two adjacent *Lps* must be the same. The *workingLine* and *protectionLine* attributes can link to a pair of ports under the same LP (Logical Processor) for the following cards: - for ***4pOC3SmIrAtm*** and ***4pOC3MmAtm*** cards, the port number pair must be 0-1 or 2-3. - for the ***1pOC12SmLrAtm*** card, the port number pair must be between the two ports 0-1.
Mib	Laps
Values	Link (Hardware, lineAutomaticProtectionSwitch)
Default	No default

ATTRIBUTE Laps protectionLine (protection)

Access	Read and write
Criticality	Process

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Description	This attribute is a link to the *Sonet* or *Sdh* component that provides the *Laps*' component protection line (working line two in ITU-T G.841 Annex B terms). This attribute must be set. The same rules apply as described in the *workingLine* attribute.
Mib	Laps
Values	Link (Hardware, lineAutomaticProtectionSwitch)
Default	No default

ATTRIBUTE Laps mode

Access	Read and write
Description	This attribute specifies the protection mode to use. If set to value of ***unidirectional***, the *Laps* component of the near end (NE) can decide independently of the far end (FE) which channel, either working or protection, is active for receive. For this value, the transmit and receive may be on different channels. Therefore, one end may receive from the protection line while the other end receives from the active line. If set to ***bidirectional*** value, it instructs the *Laps* component of the NE to decide jointly with the FE which channel, either working or protection, is to be active for receiving. For this value, the transmit and receive are on the same channel. Therefore both ends receive from the same line. If set to ***notApplicable*** value, it instructs the *Laps* component not to use this attribute when no k-byte information is exchanged. The ***notApplicable*** value must be used when the ***yProtection*** protocol is set. Note that if either end of the *Laps* component is set to ***unidirectional***, the *Laps* component operates in ***unidirectional*** mode. In other words, ***bidirectional*** mode takes effect if and only if both ends of the *Laps* components are in ***bidirectional*** mode.
Mib	Laps
Values	notApplicable unidirectional bidirectional
Default	unidirectional

ATTRIBUTE Laps revertive

Access	Read and write
Description	This attribute specifies whether revertive switching is to be used. When this attribute value is set to ***no***, the *Laps* component will not revert the receive active line from protection back to working when a working line

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request is cleared.

When this attribute value is set to ***yes***, the *Laps* component will revert the receive active line from protection back to working when a working line request is cleared and after the provisioned value of *waitToRestorePeriod* attribute has expired.

When this attribute is set to ***notApplicable***, it instructs the *Laps* component not to use this attribute for the specified protocol. The ***notApplicable*** value must be used when the ***yProtection*** protocol is set because the concept of line switchover does not exist.

Note that it is acceptable for the near end and far end to be provisioned with a mix of revertive and nonrevertive switching; one end can be revertive and the other nonrevertive.

Mib	Laps
Values	no yes notApplicable
Default	no

ATTRIBUTE Laps holdOffTime (hoTime)

Access	Read and write
Description	This attribute specifies the delay between the detection of a signal failure or signal degradation on the active line and the initiation of a line switchover. When this attribute is set to ***infinite***, it instructs the *Laps* component to never switch automatically. The ***infinite*** value must be used when the ***yProtection*** protocol is set.
Mib	Laps
Values	Decimal (0.0..10.0) infinite
Units	seconds
Default	0.0

ATTRIBUTE Laps waitToRestorePeriod (wtrPeriod)

Access	Read and write
Description	This attribute has a different meaning based on the protocol type provisioned. A) The *protocol* attribute is set to ***standard***: This attribute specifies the time (in minutes) during which the protection

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line remains the receive active line after the working line recovers from the fault that caused the switch. This attribute is only applicable when the *revertive* attribute value is set to ***yes***.

B) The *protocol* attribute is set to ***g841AnnexB***:

This attribute specifies the time (in minutes) after which a Signal Fail or Signal Degrade condition has cleared, but before which the line with the condition is considered in service. Once this time reaches zero, traffic continues to be received from the current receive active line by swapping the primary and secondary section labels. No line switch takes place.

C) The *protocol* attribute is set to ***yProtection***:

When this attribute is set to ***infinite***, it instructs the *Laps* component to wait an infinite time.

Mib	Laps
Values	Decimal (5..12) infinite
Units	minutes
Default	5

ATTRIBUTE Laps signalDegradeRatio (sdRatio)

Access	Read and write
Description	This attribute specifies the minimum bit error ratio (BER) for which a signal degradation failure is declared. Its value is the exponent of the BER, which corresponds to a BER range of 10e-5 through 10e-9. The switch initiation time for a signal degradation varies depending on the observed BER (***not*** the provisioned *signalDegradeRatio*), as described in the following table. **BER - Switch Initiation Time (OC-3)** 10e-5 - 1 second 10e-6 - 10 seconds 10e-7 - 100 seconds 10e-8 - 16 minutes 40 seconds 10e-9 - 2 hours 46 minutes 40 seconds The clearing threshold for a signal degradation is one-tenth the value of the *signalDegradeRatio* attribute. For example, if the provisioned *signalDegradeRatio* attribute is ***-5***, the corresponding clearing threshold is 10e-6. The clearing time varies depending on the clearing threshold (***not*** the observed BER), and can be determined from the above table. When this attribute is set to ***notApplicable***, it instructs the *Laps*

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component not to degrade *Laps* when BER is observed. The ***notApplicable*** value must be used when the ***yProtection*** protocol is set.

Mib	Laps
Values	Signed (-9..-5) notApplicable
Default	-5

ATTRIBUTE Laps mimicAps

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the Mimic APS protocol should be enabled. Mimic APS is a Nortel Networks proprietary protocol to allow for an Automatic Protection Switching variant to be used between Nortel Networks Multiservice Switch 15000 FPs and other hardware that supports the Mimic APS protocol. It currently only supports the following four-port OC3 multi-mode and single-mode FPs: ***4pOC3SmlrAtm*** and ***4pOC3MmAtm***. When the *mimicAps* attribute is set to ***enabled***, the Mimic APS protocol is used. The Mimic APS protocol supports only unidirectional non-revertive modes of APS and as such the *mode* and *revertive* attributes must be set to ***unidirectional*** and ***no*** respectively. When this attribute is set to ***notApplicable***, it instructs the *Laps* component not to use this attribute for the specified protocol. The ***notApplicable*** value must be used when the ***yProtection*** protocol is set.
Mib	Laps
Values	disabled enabled notApplicable
Default	disabled

ATTRIBUTE Laps protocol

Access	Read and write
Criticality	Process
Description	This attribute specifies the protocol used to protect the physical interfaces. The value ***standard*** indicates that 1+1 linear APS is used, as described in the standards document GR-253 published by Telcordia and G.841 published by the ITU-T.

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The value ***g841AnnexB*** indicates that optimized 1+1 bidirectional switching is used, as described in the standard G.841 Annex B published by the ITU-T. This value is only supported on the ***16pOC3SmIrAtm***, ***16pOC3PosAtm*** and ***4pMrPosAtm*** card type.

The *mode* attribute must be set to ***bidirectional***, the *revertive* attribute set to ***no***, and the *holdOffTime* attribute set to ***0*** when the *protocol* attribute is set to ***g841AnnexB***.

The value ***yProtection*** indicates that *Laps* component is used only for equipment protection and hitless software migration. This value is only supported on the ***16pOC3PosAtm*** card type.

The *mode* attribute must be set to ***notApplicable***, the *revertive* attribute set to ***notApplicable***, the *mimicAps* attribute set to ***notApplicable***, the *holdOffTime* attribute set to ***infinite,*** the *waitToRestorePeriod* attribute set to ***infinite***, the *signalDegradeRatio* attribute set to ***notApplicable***, and the *primarySectionMismatchTime* attribute set to ***infinite*** when the *protocol* attribute is set to ***yProtection***.

Mib: Laps

Values:
standard
g841AnnexB
yProtection

Default: standard

ATTRIBUTE Laps primarySectionMismatchTime

Access: Read and write

Description: This attribute specifies the time to wait after a primary section mismatch defect is detected/cleared, before raising/clearing an alarm.

A primary section mismatch occurs when the received and transmitted channels in the K2 byte do not match.

When this attribute is set to ***infinite***, it instructs the *Laps* component not to raise an alarm when the K2 byte do not match. The ***infinite*** value must be used when the ***yProtection*** protocol is set.

This attribute only applies when the *protocol* attribute is set to ***g841AnnexB***.

Mib: Laps

Values:
Decimal (50..1000)
infinite

Units: msec

Default: 50

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ATTRIBUTE Laps sendLineAisDuringMigration

Access	Read and write
Description	This attribute specifies whether *Sonet*/*Sdh* ports linked to a *Laps* component in an inter-card configuration will send the Line Alarm Indication Signal (AIS-L) during the migration active stage of a Hitless Software Migration or Hitless Software Patching. The migration active stage for a card begins when the card is first loaded on the migration active shelf and ends when the migration active shelf becomes the active shelf. *Sonet*/*Sdh* ports are not in service during the migration active stage of a software migration. Sending AIS-L during software migration is used to inform the far end equipment that the *Sonet*/*Sdh* port is not available. If this attribute is set to ***no***, the other end might try to use the *Sonet*/*Sdh* port that goes through a software migration. The recommended value for this attribute is ***yes*** when the far end equipment is another Nortel Networks Multiservice Switch. If this attribute is set to ***yes***, AIS-L is sent during software migration and this may cause an extended traffic outage when the *Sonet*/*Sdh* ports are connected to an equipment that delays clearing of Signal Degrade (SD) and Signal Fail (SF) conditions. Such delays are sometimes implemented to reduce the number of rapid protection switching oscillations. This attribute does not affect the behavior of *Sonet*/*Sdh* ports linked to a *Laps* component in an intra-card configuration or *Sonet*/*Sdh* ports that are not linked to a *Laps* component.
Mib	Laps
Values	no yes
Default	no

GROUP Laps OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions,

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the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Laps

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Laps controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

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Default	No default

ATTRIBUTE Laps alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Laps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Laps standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

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The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Laps

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Laps unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Laps

Values:
false
true

Default: false

GROUP Laps Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *Laps* component.

Mib: Laps

ATTRIBUTE Laps nearEndRxActiveLine (neRxLine)

Access: Read only

Description: This attribute indicates which near end line is active for receiving data from the far end.

Mib: Laps

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Values	protection working
Default	No default

ATTRIBUTE Laps nearEndRequest (neReq)

Access	Read only
Description	This attribute indicates the request currently being ***transmitted*** to the far end in the SONET/SDH line overhead K1 byte of the protection line. Requests are prioritized so that high priority requests preempt or block those with a lower priority. The possible requests, in order of priority from highest to lowest, are as follows. ***lockoutOfProtection*** — the working line is prevented from switching to the protection line under any circumstance due to a '*ProtectionLockout Laps/n'* command being in effect. ***forcedSwitch*** — the line indicated by the attribute *nearEndRequestChannel* has a '*Switch -force laps/n'* command in effect against it. Note that a ***signalFail*** value on the protection line has higher priority than a ***forcedSwitch*** value. ***signalFail*** — the line indicated by the attribute *nearEndRequestChannel* is experiencing a signal failure (SF). Failures include LOS, LOF, received AIS-L, a signal BER exceeding 10e-3, or a locked *Sonet/Sdh* component. Note that a ***signalFail*** value on the protection line has higher priority than a ***forceSwitch*** value. ***signalDegrade*** — the line indicated by the attribute *nearEndRequestChannel* is experiencing a signal degradation (SD). ***manualSwitch*** — the line indicated by the attribute *nearEndRequestChannel* has a *Switch* command in effect against it. ***waitToRestore*** — the protection line is active, the *revertive* attribute value is ***yes***, and the working line has recovered from a signal failure (SF) or signal degradation (SD). After the period defined by the attribute *waitToRestorePeriod,* the working line automatically reverts to being the receive active line and the *nearEndRequest* attribute value changes to ***noRequest***. ***reverseRequest*** — the line indicated by the attribute *nearEndRequestChannel* is active due to a request from the far end. This request is only applicable when the provisioned *mode* attribute value is ***bidirectional***. ***doNotRevert*** — the protection line is active, provisioned attribute *revertive* is set to ***no***, and either: (1) the working line has recovered from a *signalFail* or ***signalDegrade***; or (2) a ***forcedSwitch*** or ***manualSwitch*** request has been cleared. The receive active line does not automatically

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revert to the working line.

noRequest — the working line is active and no other requests are in effect.

This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.

Mib — Laps

Values
lockoutOfProtection
forcedSwitch
signalFail
signalDegrade
manualSwitch
waitToRestore
reverseRequest
doNotRevert
noRequest

Default — No default

ATTRIBUTE Laps nearEndRequestChannel (neReqChan)

Access — Read only

Description — This attribute indicates to which channel the *nearEndRequest* applies. The protection channel refers to working channel two in ITU-T G.841 Annex B terms.

This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.

Mib — Laps

Values
protection
working

Default — No default

ATTRIBUTE Laps farEndRequest (feReq)

Access — Read only

Description — This attribute indicates the request currently being ***received*** from the far end in the SONET/SDH line overhead K1 byte of the protection line. Requests are prioritized so that high priority requests preempt or block those with a lower priority. The possible requests, in order of priority from highest to lowest, are as follows.

lockoutOfProtection — indicates the working line is prevented from switching to the protection line under any circumstances due to a *ProtectionLockout* command being in effect in the far end.

forcedSwitch — the line indicated by the attribute *farEndRequestChannel*

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has a "*Switch -force*" command in effect against it. Note that a ***signalFail*** value on the protection line has higher priority than a ***forcedSwitch*** value.

signalFail — the line indicated by the attribute *farEndRequestChannel* is experiencing a signal failure (SF). Failures include LOS, LOF, received AIS-L, a signal BER exceeding 10e-3, or a locked *Sonet* component. Note that a ***signalFail*** value on the protection line has higher priority than a ***forceSwitch*** value.

signalDegrade — the line indicated by the attribute *farEndRequestChannel* is experiencing a signal degradation (SD).

manualSwitch — the line indicated by the attribute *farEndRequestChannel* has a *Switch* command in effect against it.

waitToRestore — the FE protection line is active, the FE *revertive* attribute value is ***yes***, and the FE working line has recovered from a signal failure (SF) or signal degradation (SD). After the period defined by the attribute *waitToRestorePeriod,* the FE working line automatically reverts to being the receive active line and the *farEndRequest* attribute value changes to ***noRequest***.

exercise — exercise the protocol for a protection switch of the specified channel, unless a request of equal or higher priority is in effect, by issuing an ***exercise*** request for that channel and checking the response on the APS channel.

reverseRequest — the line indicated by the attribute *farEndRequestChannel* is active due to a request from the far end. This request is only applicable when the provisioned *mode* attribute is set to ***bidirectional***.

doNotRevert — the FE protection line is active, the FE provisioned attribute *revertive* is ***no***, and either: (1) the FE working line has recovered from a *signalFail* or *signalDegrade*; or (2) a *forcedSwitch* or *manualSwitch* request has been cleared in the FE. The receive active line in the will not automatically revert to the working line in the far end.

noRequest — the FE working line is active and no other requests are in effect.

This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.

Mib — Laps

Values

lockoutOfProtection
forcedSwitch
signalFail
signalDegrade
manualSwitch

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	waitToRestore exercise reverseRequest doNotRevert noRequest
Default	No default

ATTRIBUTE Laps farEndRequestChannel (feReqChan)

Access	Read only
Description	This attribute indicates to which channel the *farEndRequest* applies. The protection channel refers to working channel two in ITU-T G.841 Annex B terms.
Mib	Laps
Values	protection working
Default	No default

ATTRIBUTE Laps sdOnLines

Access	Read only
Description	This attribute indicates which lines, if any, are currently experiencing a signal degradation (SD). This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.
Mib	Laps
Set of	protection working
Default	No default

ATTRIBUTE Laps switchovers

Access	Read only
Description	This attribute counts the number of times that a switchover of the active line has occurred since the *Laps* component became active. This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Laps timeUntilRestore

Access	Read only
Description	This attribute has a different meaning based on the protocol type provisioned: A) The *protocol* attribute is set to ***standard***: This attribute indicates the amount of time until the receive active line is automatically switched back from the protection line to the working line. It is only applicable for a *Laps* component that is provisioned to be revertive, currently has the protection line as the receive active line, and has a *nearEndRequest* attribute value of ***waitToRestore***. B) The *protocol* attribute is set to ***g841AnnexB***: This attribute indicates the amount of time until the line which previously had a Signal Fail or Signal Degrade condition is considered back in service. Once this time reaches zero, traffic continues to be received from the current receive active line by swapping the primary and secondary section labels. No line switch takes place. C) The *protocol* attribute is set to ***yProtection***: This attribute does not apply and is filtered out.
Mib	Laps
Values	Decimal (0..12)
Units	minutes
Default	No default

ATTRIBUTE Laps protocolFailureAlarm (pfAlarm)

Access	Read only
Description	This attribute indicates whether the *Laps* component is experiencing an APS protocol failure alarm. Protocol failure alarms include the protection switching byte mismatch alarm (code 7011 5270) and the channel mismatch failure alarm (code 7011 5271). This attribute does not apply to G.841 Annex B APS. It is filtered out when the *protocol* attribute is set to ***g841AnnexB***. It is also filtered out when the *protocol* attribute is set to ***yProtection***.
Mib	Laps
Values	on off
Default	No default

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ATTRIBUTE Laps modeMismatchAlarm (mmAlarm)

Access	Read only
Description	This attribute indicates whether the *Laps* component is experiencing a LAPS mode mismatch alarm (code 7011 5272). This alarm indicates either: (1) that the far end is operating with a 1:n switching architecture, as opposed to 1+1; or (2) that the value of the *mode* attribute on the far end is different from the value of the mode attribute on the near end. When a mode mismatch occurs: (1) if the far end is operating with a 1:n switching architecture it will operate as 1+1; and (2) if either end has a provisioned *mode* attribute value of ***unidirectional*** then both ends will operate unidirectionally. This attribute does not apply to G.841 Annex B APS. It is filtered out when the *protocol* attribute is set to ***g841AnnexB***. It is also filtered out when the *protocol* attribute is set to ***yProtection***.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps primarySectionMismatchAlarm (psmAlarm)

Access	Read only
Description	This attribute indicates whether the *Laps* component is experiencing a primary section mismatch alarm (code 7011 5276). This alarm indicates the primary section indicated in the received K2 byte of the SDH line overhead has not matched the primary section transmitted in the K2 byte for 50 milliseconds. This attribute does not apply, and will be filtered out, when the *protocol* attribute is set to ***standard*** or ***yProtection***.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps primarySection (ps)

Access	Read only

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Description	This attribute indicates which line is currently labelled as the primary section. This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***standard*** or ***yProtection***.
Mib	Laps
Values	protection working
Default	No default

COMPONENT Laps Sts

Instance	Decimal (0..11)
Groups	GROUP Laps Sts Provisioned (Prov) GROUP Laps Sts CustomerIdentifierData (CidData) GROUP Laps Sts OsiState (State) GROUP Laps Sts IfEntryProv (IfEntry) GROUP Laps Sts OperationalStatus (OperStatus) GROUP Laps Sts Operational (Oper) GROUP Laps Sts Statistics (Stats) GROUP Laps Sts Provisioned (Prov)
Scope	Device
Description	*Lp/n Sonet/n Sts/n* *Laps/n Sts/n* *Pbg/n Sts/n* This component controls a path signal that is carried within a SONET signal. The instance number of the *Sts* component must be 0 for components on cards that do not support channelization. On FPs supporting channelization. the Sts index indicates the sub-channel within the main optical payload.
Mib	Laps
Opt. Subcomp.	COMPONENT Laps Sts AtmCell (Cell) COMPONENT Laps Sts Vt1dot5
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Laps Sts Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for the component.
Mib	Laps

ATTRIBUTE Laps Sts applicationFramerName (framer)

Access	Read and write
Description	This attribute defines which application is running on the path.
Mib	Laps
Values	Link
Default	No default

GROUP Laps Sts CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Sts customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

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GROUP Laps Sts OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Sts adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Sts operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Sts usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Sts availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

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The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

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ATTRIBUTE Laps Sts procedureIStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Sts controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Laps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Laps Sts alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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Mib	Laps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Laps Sts standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Sts unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

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The value ***true*** indicates that the actual state of the component is not known for sure.

Mib	Laps
Values	false true
Default	false

GROUP Laps Sts IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Sts ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Sts ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Sts OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

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ATTRIBUTE Laps Sts snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Sts Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	Laps

ATTRIBUTE Laps Sts lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds. The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	Laps
Values	on off
Default	No default

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ATTRIBUTE Laps Sts rxAisAlarm (ais)

Access — Read only

Description

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — Laps

Values — on
off

Default — No default

ATTRIBUTE Laps Sts rxRfiAlarm (rfi)

Access — Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — Laps

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Values	on off
Default	No default

ATTRIBUTE Laps Sts signalLabelMismatch (slm)

Access	Read only
Description	This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered. A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds. A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds. The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Sts txAis

Access	Read only
Description	This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or

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when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts txRdi

Access Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib Laps

Values on
off

Default No default

GROUP Laps Sts Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib Laps

ATTRIBUTE Laps Sts pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts pathCodeViolations (pcv)

Access Read only

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Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts pathAisLopSec (pals)

Access	Read only

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Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib — Laps

Values — Decimal (0..4294967295)

Default — 0

ATTRIBUTE Laps Sts pathUnavailSec (puas)

Access — Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib — Laps

Values — Decimal (0..4294967295)

Default — 0

ATTRIBUTE Laps Sts pathFailures (pf)

Access — Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib — Laps

Values — Decimal (0..4294967295)

Default — 0

ATTRIBUTE Laps Sts farEndPathErrorFreeSec (fepefs)

Access — Read only

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Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds

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(FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathAisLopSec (fepals)

Access	Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathUnavailSec (fepuas)

Access	Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathFailures (fepf)

Access	Read only

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Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

GROUP Laps Sts Provisioned (ChProv)

Properties	Provisioned
Description	This group contains the provisioning data for *Sts* components provisioned under *Sonet* components that support channelization..
Mib	Laps

ATTRIBUTE Laps Sts txPathTrace

Access	Read and write
Description	This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. The path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SONET frames. At the remote end, the path trace is reassembled, and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued. The functionality supported by this attribute is not available.
Mib	Laps
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Laps Sts expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	Laps
Values	String (0..64, ASCII)
Default	""

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ATTRIBUTE Laps Sts concatNumber

Access	Read and write
Criticality	Process
Description	This attribute specifies the STS concatenation level for the *Sts* component on channelized cards. It must be set to a concatenation level supported by the FP upon which the *Sts* is defined, except for non-channelized cards, in which case it must be set to 0. For example, a value of 1 in this attribute would represent STS-1 concatenation, while a value of 3 would represent STS-3c, a value of 12 would represent STS-12c, and so forth. *Sts* channelization to the tributary level is supported only if this attribute is set to 1.
Mib	Laps
Values	Decimal (0; 1; 3; 12; 48)
Default	No default

COMPONENT Laps Sts AtmCell (Cell)

Groups	GROUP Laps Sts Cell Provisioned (Prov) GROUP Laps Sts Cell Operational (Oper) GROUP Laps Sts Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Sts Cell Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.
Mib	Laps

ATTRIBUTE Laps Sts Cell alarmActDelay (act)

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Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	Laps
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Laps Sts Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	Laps
Values	off on
Default	No default

ATTRIBUTE Laps Sts Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card

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types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib Laps

Values
off
on

Default off

ATTRIBUTE Laps Sts Cell clearDelay (clear)

Access Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Laps

Values Decimal (0..60)

Units minutes

Default 0

ATTRIBUTE Laps Sts Cell hecSampleInterval (hSample)

Access Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Laps

Values Decimal (0..25)

Units seconds

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Default	0

ATTRIBUTE Laps Sts Cell **hecErrorLimit (hLimit)**

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Laps Sts Cell **lcdStateDelay (delay)**

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Laps Sts Cell **hecErrorIntervalLimit (hIntLimit)**

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for

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all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	Laps
Values	Decimal (1..25)
Default	1

GROUP Laps Sts Cell **Operational (Oper)**

Properties	Operational
Description	This group contains the common operational attributes for the *AtmCell* component.
Mib	Laps

ATTRIBUTE Laps Sts Cell **lcdAlarm (lcd)**

Access	Read only
Description	This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute. In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected. For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect. If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.

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The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib Laps

Values on
off

Default off

GROUP Laps Sts Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib Laps

ATTRIBUTE Laps Sts Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

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If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib — Laps

Values — Decimal (0..4294967295)

Default — 0

ATTRIBUTE Laps Sts Cell receiveCellUtilization (rxutil)

Access — Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib — Laps

Values — Decimal (0..100)

Units — %

Default — 0

ATTRIBUTE Laps Sts Cell transmitCellUtilization (txutil)

Access — Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib — Laps

Values — Decimal (0..100)

Units — %

Default — 0

ATTRIBUTE Laps Sts Cell correctableHeaderErrors (cErr)

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Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Sts Vt1dot5

Instance	l [Decimal (1..7)] m [Decimal (1..4)]
Groups	GROUP Laps Sts Vt1dot5 CustomerIdentifierData (CidData) GROUP Laps Sts Vt1dot5 OsiState (State) GROUP Laps Sts Vt1dot5 IfEntryProv (IfEntry) GROUP Laps Sts Vt1dot5 OperationalStatus (OperStatus) GROUP Laps Sts Vt1dot5 Operational (Oper) GROUP Laps Sts Vt1dot5 Statistics (Stats)
Scope	Device
Description	*Lp/n Sonet/n Sts/k Vt1dot5/l,m* *Laps/n Sts/k Vt1dot5/l,m* This component represents the *Vt1.5* low order path signal that is carried within a SONET signal.
Mib	Laps
Opt. Subcomp.	COMPONENT Laps Sts Vt1dot5 DS1
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Laps Sts Vt1dot5 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

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Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 **customerIdentifier (cid)**

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Sts Vt1dot5 **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — Laps

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Laps Sts Vt1dot5 operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — Laps

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Laps Sts Vt1dot5 usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Sts Vt1dot5 **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which

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	represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.
Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **Laps Sts Vt1dot5** **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

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The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Laps

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Laps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the

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	backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Sts Vt1dot5 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Sts Vt1dot5 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

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ATTRIBUTE Laps Sts Vt1dot5 **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Sts Vt1dot5 **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Sts Vt1dot5 **Operational (Oper)**

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 **rxAisAlarm**

Access	Read only
Description	This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered

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when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 rxRdiAlarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 rxRfiAlarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 unequippedAlarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when

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LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts Vt1dot5 traceIdMismatchAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts Vt1dot5 lopAlarm

Access Read only

Description

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts Vt1dot5 txAis

Access Read only

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Description

This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency*.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts Vt1dot5 txRdi

Access Read only

Description

This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is *off* when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency*.

Mib Laps

Values on
off

Default No default

GROUP Laps Sts Vt1dot5 Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib Laps

ATTRIBUTE Laps Sts Vt1dot5 pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts Vt1dot5 pathCodeViolations (pcv)

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Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 **pathErroredSec (pes)**

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 **pathSevErroredSec (pses)**

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 **pathAisLopSec (pals)**

Access	Read only

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Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 pathUnavailSec (puas)

Access	Read only
Description	This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathErrorFreeSec (fepefs)

Access	Read only

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Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds

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(FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathFailures (fepf)

Access Read only

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Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Laps Sts Vt1dot5 DS1

Groups:
GROUP Laps Sts Vt1dot5 DS1 Provisioned (Prov)
GROUP Laps Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)
GROUP Laps Sts Vt1dot5 DS1 AdminInfo (AdminInfo)
GROUP Laps Sts Vt1dot5 DS1 IfEntryProv (IfEntry)
GROUP Laps Sts Vt1dot5 DS1 OperationalStatus (OperStatus)
GROUP Laps Sts Vt1dot5 DS1 OsiState (State)
GROUP Laps Sts Vt1dot5 DS1 Operational (Oper)
GROUP Laps Sts Vt1dot5 DS1 Statistics (Stats)

Scope: Application

Description

Lp/n DS3/n DS1/n
The *DS1* component controls and monitors a DS1 tributary of a channelized DS3 port on a Function Processor that supports channelization of a DS3.

Mib: Laps

Subcomponents: COMPONENT Laps Sts Vt1dot5 DS1 Channel (Chan)

Dyn. Subcomp.: COMPONENT Laps Sts Vt1dot5 DS1 Test (Test)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Laps Sts Vt1dot5 DS1 Provisioned (Prov)

Properties: Provisioned

Description

This group contains all of the provisioning data for a *DS1* component.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 lineType (lineType)

Access: Read and write

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Description

This attribute defines the framing of the DS1 tributary.
d4 defines a framing pattern of 12 frames per multiframe.
esf defines a framing pattern of 24 frames per multiframe.
d4Cas defines a framing pattern of 12 frames per multiframe with channel associated signalling.
esfCas defines a framing pattern of 24 frames per multiframe with channel associated signalling.
unframed defines an unknown framing pattern for clear channels.

For the ***4pDS3ChAtm*** card, only ***d4*** and ***esf*** framing patterns are permitted.

The ***4pDS3ChAal1*** card supports the ***d4*** and ***esf*** framing patterns, as well as ***unframed***.

Mib: Laps

Values:
d4
esf
d4Cas
esfCas
unframed

Default: esf

ATTRIBUTE Laps Sts Vt1dot5 DS1 **zeroCoding (zeroCoding)**

Access: Read and write

Criticality: Component

Description

This attribute defines the zero encoding on the DS1 tributary.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
none does no zero encoding, it does not change any value of the bits in the timeslot. The value ***none*** is compatible with any zero coding scheme which transports all 8 data bits in a timeslot (this would include both ***ami*** and ***b8zs*** values of the *DS1 zeroCoding* attribute).

Mib: Laps

Values:
bit7Stuffing
none

Default: none

ATTRIBUTE Laps Sts Vt1dot5 DS1 **clockingSource (clockingSource)**

Access: Read and write

Description

This attribute specifies the source of the transmit clock for the DS1 tributary.

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When the clocking source is ***local***, the crystal on the port generates the clocking for the DS1 tributary.
When the clocking source is ***line***, the port synchronizes to the clock from the DS1 tributary.
When the clocking source is ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP.
When the clocking source is ***sameAsDs3***, the Ds1 port's clock synchronizes to the same clock source as that of its parent Ds3 port.

On a ***1pDS3C*** card, if the *NetworkSynchronization (NS)* component is present, the default value of this attribute will be ***module***; otherwise it will be ***line***.

On a ***2pDS3cAal*** card, the only valid values are ***local*** and ***module***. If the *NS* component is present, the default value of this attribute will be ***module***; otherwise it will be ***local***.

On the ***4pDS3Ch***, ***4pDS3ChAtm***, and ***4pDS3ChAal1*** cards, the only valid value is ***sameAsDs3***. This is because a DS1 must have the same clocking source as its parent DS3.

Mib	Laps
Values	local line module sameAsDs3
Default	No default

GROUP Laps Sts Vt1dot5 DS1 **CustomerIdentifierData (CidData)**

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 **customerIdentifier (cid)**

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

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An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Sts Vt1dot5 DS1 **AdminInfo (AdminInfo)**

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 **vendor**

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Laps
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 **commentText**

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Laps
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 **includeAdminInfoInAlarm**

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	Laps

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Values	no yes
Default	no

GROUP Laps Sts Vt1dot5 DS1 **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Sts Vt1dot5 DS1 **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Sts Vt1dot5 DS1 **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates

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the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib Laps

Values
up
down
testing

Default up

GROUP Laps Sts Vt1dot5 DS1 OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Laps

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Laps Sts Vt1dot5 DS1 operationalState (osiOper)

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Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Sts Vt1dot5 DS1 **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Sts Vt1dot5 DS1 **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 **controlStatus (osiCntrl)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Laps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Laps

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 **standbyStatus (osiStby)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Sts Vt1dot5 DS1 **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Sts Vt1dot5 DS1 **Operational (Oper)**

Properties	Operational
Description	This group contains the common operational data for a component in a digital hierarchy interface.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 **rxAisAlarm (rxAisAlarm)**

Access	Read only
Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.
Mib	Laps

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Values	on off
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 **lofAlarm (lofAlarm)**

Access	Read only
Description	This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (2 out of 5 framing bits in error) have been detected for 3 seconds +/- 0.5 seconds. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.
Mib	Laps
Values	on off
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 **rxRaiAlarm (rxRaiAlarm)**

Access	Read only
Description	This attribute indicates whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds. The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.
Mib	Laps
Values	on off
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 **txAisAlarm (txAisAlarm)**

Access	Read only

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Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the tributary is in a locked state.
Mib	Laps
Values	on off
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 **txRaiAlarm (txRaiAlarm)**

Access	Read only
Description	This attribute indicates whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the tributary detects a LOF alarm condition.
Mib	Laps
Values	on off
Default	off

GROUP Laps Sts Vt1dot5 DS1 **Statistics (Stats)**

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 **runningTime (runningTime)**

Access	Read only
Description	This attribute counts the number of seconds since the tributary was activated.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 **errorFreeSec (efs)**

Access	Read only
Description	This attribute counts the number of seconds that the tributary has been in an error free state.

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Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 **erroredSec (es)**

Access	Read only
Description	This attribute counts the number of errored seconds the tributary has counted since it was activated. An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 **sevErroredSec (ses)**

Access	Read only
Description	This attribute counts the number of severely errored seconds the tributary has counted since it was activated. A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 **sevErroredFrmSec (sefs)**

Access	Read only
Description	This attribute counts the number of severely errored framing seconds the tributary has counted since it was activated A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 **unavailSec**

Access	Read only

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Description	This attribute counts the total number of seconds that the tributary has been in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 **crcErrors (crcErrors)**

Access	Read only
Description	This attribute counts the total number of CRC-6 errors. These will only be counted when the *lineType* is ***esf***.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 **frmErrors (frmErrors)**

Access	Read only
Description	This attribute counts the total number of frame errors. A frame error is an error in the framing bits.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 **slipErrors (slipErrors)**

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Sts Vt1dot5 DS1 **Channel (Chan)**

Instance	Decimal (0..23)
Groups	GROUP Laps Sts Vt1dot5 DS1 Chan Provisioned (Prov) GROUP Laps Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData)

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GROUP Laps Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry)
GROUP Laps Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus)
GROUP Laps Sts Vt1dot5 DS1 Chan OsiState (State)
GROUP Laps Sts Vt1dot5 DS1 Chan Operational (Oper)
GROUP Laps Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)

Scope: Application

Description:
Channel
The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port.
Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.

Mib: Laps

Opt. Subcomp.:
COMPONENT Laps Sts Vt1dot5 DS1 Chan AtmCell (Cell)
COMPONENT Laps Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)

Dyn. Subcomp.: COMPONENT Laps Sts Vt1dot5 DS1 Chan Test (Test)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Laps Sts Vt1dot5 DS1 Chan Provisioned (Prov)

Properties: Provisioned

Description:
This group contains all of the provisional data for a *Channel* component.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan timeslots (ts)

Access: Read and write

Criticality: Component

Description:
This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component.

For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

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Mib	Laps
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **timeslotDataRate (dataRate)**

Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

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When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib — Laps

Values — 56k
doNotOverride

Default — doNotOverride

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **applicationFramerName**

Access — Read and write

Description

This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.

Mib — Laps

Values — Link (Service, interfaceName)

Default — No default

GROUP Laps Sts Vt1dot5 DS1 Chan **CustomerIdentifierData (CidData)**

Properties — Provisioned

Description — This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib — Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **customerIdentifier (cid)**

Access — Read and write

Description — This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

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Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Sts Vt1dot5 DS1 Chan **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Sts Vt1dot5 DS1 Chan **OperationalStatus (OperStatus)**

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Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Sts Vt1dot5 DS1 Chan **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **operationalState (osiOper)**

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **usageState (osiUsage)**

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

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Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

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The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — Laps

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **proceduralStatus (osiProc)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Laps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Laps

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **standbyStatus (osiStby)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Sts Vt1dot5 DS1 Chan **Operational (Oper)**

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **actualChannelSpeed**

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	Laps
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Laps Sts Vt1dot5 DS1 Chan **AdminInfo (AdminInfo)**

Properties	Provisioned

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Description

This group contains the attributes pertaining to the vendor of the equipment.

Mib Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **vendor**

Access Read and write

Description

This is the name of the vendor supplying the facility.

Mib Laps

Values String (0..20, ASCII)

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **commentText**

Access Read and write

Description

Any miscellaneous text about the facility.

Mib Laps

Values String (0..60, ASCII)

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan **includeAdminInfoInAlarm**

Access Read and write

Description

This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.

Mib Laps

Values no
yes

Default no

COMPONENT Laps Sts Vt1dot5 DS1 Chan **Test (Test)**

Groups GROUP Laps Sts Vt1dot5 DS1 Chan Test OsiState (State)
GROUP Laps Sts Vt1dot5 DS1 Chan Test Setup (Setup)
GROUP Laps Sts Vt1dot5 DS1 Chan Test Results (Results)

Scope Application

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Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib Laps

Common Verbs
Help
List
Display

VERB START **Laps Sts Vt1dot5 DS1 Chan Test**

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP **Laps Sts Vt1dot5 DS1 Chan Test**

Impact Service

Description

This command stops a test running on the hardware component.

GROUP **Laps Sts Vt1dot5 DS1 Chan Test** **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Laps

ATTRIBUTE **Laps Sts Vt1dot5 DS1 Chan Test** **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Laps

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Laps

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Laps

Values — idle
active (activ)
busy

Default — idle

GROUP Laps Sts Vt1dot5 DS1 Chan Test Setup (Setup)

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Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Laps
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	Laps

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Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **frmSize (size)**

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Laps
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **frmPatternType (fpt)**

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Laps
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **customizedPattern (cp)**

Access	Read and write

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Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Laps
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Laps
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Laps
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In

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the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP **Laps Sts Vt1dot5 DS1 Chan Test** **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Laps

ATTRIBUTE **Laps Sts Vt1dot5 DS1 Chan Test** **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

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a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib Laps

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **bitsTx**

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **bytesTx**

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **frmTx**

Access Read only

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Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **bitsRx**

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **bytesRx**

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **frmRx**

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **erroredFrmRx**

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Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Laps
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Laps
Values	Decimal (0.00..30240.00)

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Units	minutes
Default	0.00

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test **timeRemaining**

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Laps Sts Vt1dot5 DS1 Chan **AtmCell (Cell)**

Groups	GROUP Laps Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov) GROUP Laps Sts Vt1dot5 DS1 Chan Cell Operational (Oper) GROUP Laps Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Sts Vt1dot5 DS1 Chan Cell **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **alarmActDelay (act)**

Access	Read and write

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Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib: Laps

Values: Decimal (0..2000)

Units: msec

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **scrambleCellPayload (scramble)**

Access: Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib: Laps

Values: off
on

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **correctSingleBitHeaderErrors**

Access: Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: Laps

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Values	off on
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **clearDelay (clear)**

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **hecSampleInterval (hSample)**

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **hecErrorLimit (hLimit)**

Access	Read and write

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Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **lcdStateDelay (delay)**

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **hecErrorIntervalLimit (hIntLimit)**

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row

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is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Laps

Values Decimal (1..25)

Default 1

GROUP Laps Sts Vt1dot5 DS1 Chan Cell **Operational (Oper)**

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **lcdAlarm (lcd)**

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib Laps

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Values	on off
Default	off

GROUP Laps Sts Vt1dot5 DS1 Chan Cell **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **uncorrectableHeaderErrors (ucErr)**

Access	Read only
Description	This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **sevErroredSec (ses)**

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

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Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **receiveCellUtilization (rxutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **transmitCellUtilization (txutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell **correctableHeaderErrors (cErr)**

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive

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	incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)

Groups	GROUP Laps Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov) GROUP Laps Sts Vt1dot5 DS1 Chan Tc Operational (Op)
Scope	Device
Description	*Lp/n Ds1/n Chan/n Tc* *Lp/n E1/n Chan/n Tc* *Lp/n Ds3/n Ds1/n Chan/n Tc* *Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc* *Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc* *Laps/n* Vc4/n Vc12/k,l,m E1 Chan/n T*c* *Laps/n* Sts/n Vt1dot5/l,m Ds1 Chan/n T*c* The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service. Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined. When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI) When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions: bufferUnderflow (BU) AAL1 protocol errors. This component needs to be provisioned on 2pDs3cAal and 32pE1Aal

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FPs.

Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Sts Vt1dot5 DS1 Chan Tc **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc **replacementData (data)**

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions. The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values: DS1 MUX Out Of Service Code = 0x1A E1 MUX Out Of Service Code = 0xFF On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***. On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.
Mib	Laps
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc **signalOneDuration (duration)**

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into

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	the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	Laps
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc **noServiceResponse (resp)**

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	Laps
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc **signalOne (sigOne)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

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Mib	Laps
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc **signalTwo (sigTwo)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	Laps
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Laps Sts Vt1dot5 DS1 Chan Tc **Operational (Op)**

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc **ingressConditioning (inCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***.

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Trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc **egressConditioning (egCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the PDH line under the following conditions: bufferUnderflow (BU) AAL1 protocol errors.
Mib	Laps
Values	off on
Default	off

COMPONENT Laps Sts Vt1dot5 DS1 **Test (Test)**

Groups	GROUP Laps Sts Vt1dot5 DS1 Test OsiState (State) GROUP Laps Sts Vt1dot5 DS1 Test Setup (Setup) GROUP Laps Sts Vt1dot5 DS1 Test Results (Results)
Scope	Application

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Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib Laps

Common Verbs
Help
List
Display

VERB START **Laps Sts Vt1dot5 DS1 Test**

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP **Laps Sts Vt1dot5 DS1 Test**

Impact Service

Description

This command stops a test running on the hardware component.

GROUP **Laps Sts Vt1dot5 DS1 Test** **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Laps

ATTRIBUTE **Laps Sts Vt1dot5 DS1 Test** **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Laps

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Laps

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Laps

Values — idle
active (activ)
busy

Default — idle

GROUP Laps Sts Vt1dot5 DS1 Test Setup (Setup)

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Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Laps
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	Laps

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Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **frmSize (size)**

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Laps
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **frmPatternType (fpt)**

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Laps
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **customizedPattern (cp)**

Access	Read and write

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Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib — Laps

Values — Hex (H.0..H.ffffffff)

Units — Hex

Default — H.55555555

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **dataStartDelay (dsd)**

Access — Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib — Laps

Values — Decimal (0..1814400)

Units — seconds

Default — 0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **displayInterval (di)**

Access — Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib — Laps

Values — Decimal (0..30240)

Units — minutes

Default — 5

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **duration**

Access — Read and write

Description

This attribute is the duration for which the test data will be transmitted. In

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the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP **Laps Sts Vt1dot5 DS1 Test** **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Laps

ATTRIBUTE **Laps Sts Vt1dot5 DS1 Test** **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

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a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib — Laps

Values — testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default — neverStarted

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **bitsTx**

Access — Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib — Laps

Values — Long Integer

Default — No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **bytesTx**

Access — Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib — Laps

Values — Long Integer

Default — No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **frmTx**

Access — Read only

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Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **bitsRx**

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **bytesRx**

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **frmRx**

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **erroredFrmRx**

Access Read only

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Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Laps
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes

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Default	0.00

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test **timeRemaining**

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Laps **Vc4**

Instance	Decimal (0..3)
Groups	GROUP Laps Vc4 Provisioned (Prov) GROUP Laps Vc4 CustomerIdentifierData (CidData) GROUP Laps Vc4 OsiState (State) GROUP Laps Vc4 IfEntryProv (IfEntry) GROUP Laps Vc4 OperationalStatus (OperStatus) GROUP Laps Vc4 Operational (Oper) GROUP Laps Vc4 Statistics (Stats)
Scope	Device
Description	*Lp/n Sdh/n Vc4/n* *Laps/n Vc4/n* This component controls a VC4 path signal that is carried within an SDH signal. The instance number of the *Vc4* component is 0. The *Vc4* component may only be defined on Nortel Networks Multiservice Switch FPs that support STM.
Mib	Laps
Opt. Subcomp.	COMPONENT Laps Vc4 AtmCell (Cell) COMPONENT Laps Vc4 Vc12
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Laps Vc4 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for the component.
Mib	Laps

ATTRIBUTE Laps Vc4 applicationFramerName (framer)

Access	Read and write
Description	This attribute defines which application is running on the path.
Mib	Laps
Values	Link
Default	No default

ATTRIBUTE Laps Vc4 pathTraceLength

Access	Read and write
Description	This attribute specifies the transmitted path trace message length. The *pathTraceLength* attribute at transmitting and receiving end must match.
Mib	Laps
Values	16 64
Default	16

ATTRIBUTE Laps Vc4 txPathTrace

Access	Read and write
Description	This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. If *pathTraceLength* is 16, the path identifier is prefixed with a CRC byte and padded by null characters if necessary to form a 16-octet path trace message transmitted in byte J1 of 16 outgoing SDH frames. If *pathTraceLength* is 64, the path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SDH frames. At the remote end, the path trace is reassembled, the CRC is checked if necessary and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued. Usage guidelines for path trace message are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format. The functionality supported by this attribute is not available.

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Mib	Laps
Values	String (0..64, Extended ASCII)
Default	""

ATTRIBUTE Laps Vc4 expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	Laps
Values	String (0..64, Extended ASCII)
Default	""

ATTRIBUTE Laps Vc4 concatNumber

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of contiguous Administration Unit 4 (AU-4) concatenated together. AU-4s can be concatenated together to form an AU-4-4c or AU-4-16c (4 or 16 concatenated AU-4s) which can transport payloads requiring greater capacity than one Container-4 capacity. Only *Vc4/0* can have *concatNumber* set to 16 and only *Vc4/0*, *Vc4/4*, *Vc4/8* or *Vc4/12* can have *concatNumber* set to 4. When a *Vc4* uses concatenation, the other concatenated *Vc4* instance number cannot be used. For example, if *Vc4/0 concatNumber* is 4, the next provisionable *Vc4* is *Vc4/4*. *Vc4* channelization, indicated by provisioning subcomponents such as *Vc12*, is allowed only if this attribute is set to 1. This value must be set to 0 for card types which do not support the use of this attribute.
Mib	Laps
Values	0 1 4 16
Default	No default

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GROUP Laps Vc4 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Vc4 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Vc4 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Vc4 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Vc4 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Vc4 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

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The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — Laps

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Laps Vc4 proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Laps

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Laps Vc4 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

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ATTRIBUTE Laps Vc4 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Laps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Laps Vc4 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service

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but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib Laps

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default notSet

ATTRIBUTE Laps Vc4 unknownStatus (osiUnknw)

Access Read only

Description This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib Laps

Values
false
true

Default false

GROUP Laps Vc4 IfEntryProv (IfEntry)

Properties Provisioned

Description This group contains the provisionable attributes for the ifEntry.

Mib Laps

ATTRIBUTE Laps Vc4 ifAdminStatus (ifState)

Access Read and write

Description The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib Laps

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Values	up down testing
Default	up

ATTRIBUTE Laps Vc4 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Vc4 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Vc4 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Vc4 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	Laps

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ATTRIBUTE Laps Vc4 lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds. The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Vc4 rxAisAlarm (ais)

Access	Read only
Description	This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds. The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	Laps

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Values	on off
Default	No default

ATTRIBUTE Laps Vc4 rxRfiAlarm (rfi)

Access	Read only
Description	This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds. The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Vc4 signalLabelMismatch (slm)

Access	Read only
Description	This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered. A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds. A P-UNEQ failure condition is entered when P-UNEQ defects have been

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observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — Laps

Values — on
off

Default — No default

ATTRIBUTE Laps Vc4 txAis

Access — Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — Laps

Values — on
off

Default — No default

ATTRIBUTE Laps Vc4 txRdi

Access — Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — Laps

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Values	on off
Default	No default

GROUP Laps Vc4 Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the component.
Mib	Laps

ATTRIBUTE Laps Vc4 pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is

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declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 pathSevErroredSec (pses)

Access Read only

Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 pathAisLopSec (pals)

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are

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excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 farEndPathErrorFreeSec (fepefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.

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Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 farEndPathAisLopSec (fepals)

Access	Read only
Description	This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 farEndPathUnavailSec (fepuas)

Access	Read only
Description	This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Vc4 AtmCell (Cell)

Groups	GROUP Laps Vc4 Cell Provisioned (Prov) GROUP Laps Vc4 Cell Operational (Oper) GROUP Laps Vc4 Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM

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cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib Laps

Common Verbs
Help
List
Display
Add
DELete

GROUP Laps Vc4 Cell Provisioned (Prov)

Properties Provisioned

Description
This group contains the provisioning attributes for the *AtmCell* component.

Mib Laps

ATTRIBUTE Laps Vc4 Cell alarmActDelay (act)

Access Read and write

Description
This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib Laps

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Laps Vc4 Cell scrambleCellPayload (scramble)

Access Read and write

Description
Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

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Mib	Laps
Values	off on
Default	No default

ATTRIBUTE Laps Vc4 Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Vc4 Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Laps Vc4 Cell hecSampleInterval (hSample)

Access	Read and write

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Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Laps Vc4 Cell hecErrorLimit (hLimit)

Access: Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Laps Vc4 Cell lcdStateDelay (delay)

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The

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valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	Laps
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Laps Vc4 Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	Laps
Values	Decimal (1..25)
Default	1

GROUP Laps Vc4 Cell Operational (Oper)

Properties	Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib	Laps

ATTRIBUTE Laps Vc4 Cell lcdAlarm (lcd)

Access	Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure

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alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib — Laps

Values — on
off

Default — off

GROUP Laps Vc4 Cell Statistics (Stats)

Properties — Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib — Laps

ATTRIBUTE Laps Vc4 Cell uncorrectableHeaderErrors (ucErr)

Access — Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

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Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Cell **sevErroredSec (ses)**

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Cell **receiveCellUtilization (rxutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Vc4 Cell **transmitCellUtilization (txutil)**

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Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Vc4 Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Vc4 Vc12

Instance	k [Decimal (1..3)] l [Decimal (1..7)] m [Decimal (1..3)]
Groups	GROUP Laps Vc4 Vc12 Provisioned (Prov) GROUP Laps Vc4 Vc12 CustomerIdentifierData (CidData) GROUP Laps Vc4 Vc12 OsiState (State) GROUP Laps Vc4 Vc12 IfEntryProv (IfEntry) GROUP Laps Vc4 Vc12 OperationalStatus (OperStatus) GROUP Laps Vc4 Vc12 Operational (Oper) GROUP Laps Vc4 Vc12 Statistics (Stats)
Scope	Device
Description	*Lp/n Sdh/n Vc4/n Vc12/k,l,m* *Laps/n Vc4/n Vc12/k,l,m* This component controls the VC12 low order path signal that is carried

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within an SDH signal.

The *Vc12* component may only be provisioned on Nortel Networks Multiservice Switch FPs that support STM and channelization.

Mib: Laps

Opt. Subcomp.: COMPONENT Laps Vc4 Vc12 E1

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Laps Vc4 Vc12 Provisioned (Prov)

Properties: Provisioned

Description:
This group contains all of the provisioning data for the component.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 txPathTrace

Access: Read and write

Description:
This attribute specifies the low order path identifier. The string must be constructed with 7-bit characters only. The path identifier is prefixed with a CRC byte and padded by null characters if necessary to form a 16-octet path trace message transmitted in byte J2 of 16 outgoing SDH frames. At the remote end, the path trace is reassembled, the CRC is checked and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected and the *expectedRxPathTrace* attribute is not an empty string (default value), an alarm is issued.

Usage guidelines for path trace message are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format.

The functionality supported by this attribute is available on the *4pOC3Ch* functional processor.

Mib: Laps

Values: String (0..15, Extended ASCII)

Default: ""

ATTRIBUTE Laps Vc4 Vc12 expectedRxPathTrace

Access: Read and write

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Description	This attribute specifies the expected path trace identifier which is used to identify the low order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. If an empty string (default value) is provisioned, the Low Order Path Trace Identification Mismatch (LP-TIM) defect is ignored. The functionality supported by this attribute is available on the *4pOC3Ch* functional processor.
Mib	Laps
Values	String (0..15, Extended ASCII)
Default	""

GROUP Laps Vc4 Vc12 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Vc4 Vc12 OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Vc4 Vc12 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Vc4 Vc12 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Vc4 Vc12 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

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The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps Vc4 Vc12 **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

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The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — Laps

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Laps Vc4 Vc12 **alarmStatus (osiAlarm)**

Access — Read only

Description

If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Laps

Set of
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

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Default	No default

ATTRIBUTE Laps Vc4 Vc12 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Vc4 Vc12 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

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GROUP Laps Vc4 Vc12 **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Vc4 Vc12 **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Vc4 Vc12 **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps

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Values	up down testing
Default	up

GROUP Laps Vc4 Vc12 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 rxAisAlarm

Access	Read only
Description	This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Vc4 Vc12 rxRdiAlarm

Access	Read only
Description	This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Vc4 Vc12 rxRfiAlarm

Access	Read only

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Description

This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values:
on
off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 rxReiAlarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Remote Error Indicator (LP-REI) alarm state has been entered. An LP-REI alarm state is entered when LP-REI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-REI defect occurs when a REI condition is detected. This alarm is cleared after no LP-REI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values:
on
off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 bip2Alarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Error Monitoring (BIP-2) alarm state has been entered. An BIP-2 alarm state is entered when BIP-2 defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The BIP-2 defect occurs when a mismatch between the calculated and received BIP-2 is detected. This alarm is cleared after no BIP-2 defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values:
on
off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 unequippedAlarm

Access: Read only

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Description

This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on, off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 traceIdMismatchAlarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on, off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 lopAlarm

Access: Read only

Description

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on, off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 txAis

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Access	Read only
Description	This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is ***locked*** or *operationalState* is ***disabled*** and *availabilityStatus* is *dependency*.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Vc4 Vc12 txRdi

Access	Read only
Description	This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is ***off*** when the component *adminState* is ***locked*** or *operationalState* is ***disabled*** and *availabilityStatus* is ***dependency***.
Mib	Laps
Values	on off
Default	No default

GROUP Laps Vc4 Vc12 Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Laps Vc4 Vc12 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 pathAisLopSec (pals)

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Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 pathUnavailSec (puas)

Access	Read only
Description	This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 farEndPathErrorFreeSec (fepefs)

Access	Read only

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Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds

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(FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 Vc12 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 Vc12 farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 Vc12 farEndPathFailures (fepf)

Access Read only

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Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Vc4 Vc12 E1

Groups	GROUP Laps Vc4 Vc12 E1 Provisioned (Prov) GROUP Laps Vc4 Vc12 E1 CustomerIdentifierData (CidData) GROUP Laps Vc4 Vc12 E1 AdminInfo (AdminInfo) GROUP Laps Vc4 Vc12 E1 IfEntryProv (IfEntry) GROUP Laps Vc4 Vc12 E1 OperationalStatus (OperStatus) GROUP Laps Vc4 Vc12 E1 OsiState (State) GROUP Laps Vc4 Vc12 E1 Operational (Oper) GROUP Laps Vc4 Vc12 E1 E1Operational (E1Oper) GROUP Laps Vc4 Vc12 E1 Statistics (Stats)
Scope	Device
Description	*Lp/n E1/n* *Lp/n Sdh/i Vc4/j Vc12/k,l,m E1* The *E1* component controls and monitors an E1 port or tributary on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pE1Aal1: 4 port. The lowest instance value is usually ***0***, except for the ***32pE1Aal*** card when it is ***1***. No instance value is used when the E1 is a STM tributary. Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (An E1 “ATM UNI port” is an *E1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.)

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The instance number of an *E1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.

Mib Laps

Subcomponents COMPONENT Laps Vc4 Vc12 E1 Channel (Chan)

Dyn. Subcomp. COMPONENT Laps Vc4 Vc12 E1 Test (Test)
COMPONENT Laps Vc4 Vc12 E1 Dsp
COMPONENT Laps Vc4 Vc12 E1 Audio

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Laps Vc4 Vc12 E1 Provisioned (Prov)

Properties Provisioned

Description

This group contains all of the provisioning data for an E1 component.

Mib Laps

ATTRIBUTE Laps Vc4 Vc12 E1 lineType (lineType)

Access Read and write

Description

This attribute specifies the framing of the E1 line.
When ***cas*** (channel associated signalling) is selected, timeslot 16 is reserved for multiframe signalling and only 30 timeslots are available for data. The signalling bits are not interpreted.
When ***ccs*** (common channel signalling) is selected, timeslot 16 is not reserved for multiframe signalling and 31 timeslots are available for data. The signalling bits are not interpreted.
When ***unframed*** is selected, a clear channel is defined whereby data from all timeslots including the framing data (in timeslot 0) and timeslot 16 are passed transparently. This value is valid only for AAL1 cards.

For cell-based cards the ATM Forum specifies that timeslot 16 be reserved, leaving 30 timeslots available for data.
The ***8pE1Atm*** and ***1pStm1ChSmlr*** cards support the ***ccs*** value only. The ***4pOC3ChSmlr*** card only supports the ***ccs*** and ***unframed*** values. For both these cards, the default value is ***ccs***. For all other cards, the default value is ***cas***.

Mib Laps

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Values	ccs cas unframed
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 **clockingSource (clockingSource)**

Access	Read and write
Description	This attribute defines the source of the transmit clock for the E1 line. When ***local*** is selected, the crystal on the port generates the clocking for the line. When ***line*** is selected, the port synchronizes to the clock from the facility. When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP. When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***. When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network. When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network. A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured*** If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pE1Atm*** card, which it defaults to ***local***. On a ***3pE1Atm*** card all ports must have the same value, and be either ***local*** or ***module***. ***otherPort*** is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards. On ***4E1Aal1*** cards either: all four ports' *clockingSource* values must be ***local*** OR all four ports' *clockingSource* values must be ***module*** OR one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. The ***srtsMode*** clocking source is not supported for this card type.
Mib	Laps

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Values	local line module otherPort srtsMode adaptiveMode
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 **crc4Mode**

Access	Read and write
Description	This attribute defines whether the CRC-4 checking and generation on the E1 line is enabled or disabled. The default CRC-4 mode is ***off*** except for the cell-based cards which default to ***on*** as per the ATM Forum.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 **sendRaiOnAis**

Access	Read and write
Description	This attribute defines whether the Remote Alarm Indicator (RAI) will be sent when receiving an AIS alarm. The value is ***yes*** by default; it can be changed to ***no*** only for ports on J2MV cards.
Mib	Laps
Values	no yes
Default	yes

ATTRIBUTE Laps Vc4 Vc12 E1 **raiDeclareAlarmTime**

Access	Read and write
Description	This attribute specifies the period of time that a Remote Alarm Indicator (RAI) must be present before declaring an RAI alarm. The value of ***auto*** sets the RAI declare time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiClearAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.

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Mib	Laps
Values	Decimal (1..20000) auto
Units	msec
Default	100

ATTRIBUTE Laps Vc4 Vc12 E1 raiClearAlarmTime

Access	Read and write
Description	This attribute specifies the period of time that a Remote Alarm Indicator (RAI) has been absent before clearing an RAI alarm. The value of ***auto*** sets the RAI clear time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiDeclareAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.
Mib	Laps
Values	Decimal (1..20000) auto
Units	msec
Default	100

ATTRIBUTE Laps Vc4 Vc12 E1 ssmE1SaNumber

Access	Read and write
Description	This attribute specifies which of the five available Sa bits (Sa4 to Sa8) recommended in ITU G.704 is to be used for Synchronization Status Messages (SSM). If set to ***none***, the transmission of SSM is disabled on this port.
Mib	Laps
Values	Decimal (4..8) none
Default	none

GROUP Laps Vc4 Vc12 E1 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

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ATTRIBUTE Laps Vc4 Vc12 E1 **customerIdentifier (cid)**

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Vc4 Vc12 E1 **AdminInfo (AdminInfo)**

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 **vendor**

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Laps
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 **commentText**

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Laps

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Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	Laps
Values	no yes
Default	no

GROUP Laps Vc4 Vc12 E1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Vc4 Vc12 E1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)

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Default	No default

GROUP Laps Vc4 Vc12 E1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Vc4 Vc12 E1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Vc4 Vc12 E1 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Laps Vc4 Vc12 E1 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

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Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Vc4 Vc12 E1 **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

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The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 **controlStatus (osiCntrl)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Laps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Laps

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Laps Vc4 Vc12 E1 **standbyStatus (osiStby)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Vc4 Vc12 E1 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Vc4 Vc12 E1 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for a component in a digital hierarchy interface.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 losAlarm (losAlarm)

Access	Read only
Description	This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the

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duration of the LOS alarm state.
The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default off

ATTRIBUTE Laps Vc4 Vc12 E1 **rxAisAlarm (rxAisAlarm)**

Access Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms £ T £ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default off

ATTRIBUTE Laps Vc4 Vc12 E1 **lofAlarm (lofAlarm)**

Access Read only

Description

This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the

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duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on, off

Default: off

ATTRIBUTE Laps Vc4 Vc12 E1 rxRaiAlarm (rxRaiAlarm)

Access: Read only

Description

This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time).
The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib: Laps

Values: on, off

Default: off

ATTRIBUTE Laps Vc4 Vc12 E1 txAisAlarm (txAisAlarm)

Access: Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.

Mib: Laps

Values: on, off

Default: off

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ATTRIBUTE Laps Vc4 Vc12 E1 **txRaiAlarm (txRaiAlarm)**

Access	Read only
Description	This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).
Mib	Laps
Values	on off
Default	off

GROUP Laps Vc4 Vc12 E1 **E1Operational (E1Oper)**

Properties	Operational
Description	This group contains all of the operational data for a E1 component that are not defined in the DSCommonOp group.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 **multifrmLofAlarm (multiLofAlarm)**

Access	Read only
Description	This attribute indicates whether a multiframe LOF (loss of frame) alarm state is entered. A multiframe LOF alarm state is entered when a multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe LOF defects are intermittently occurring, the multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds. When the multiframe LOF alarm is on, a multiframe RAI alarm indicator is transmitted on the line. The ***8pE1Atm*** card does not support the multiframe LOF alarm.
Mib	Laps
Values	on off
Default	off

ATTRIBUTE Laps Vc4 Vc12 E1 **rxMultifrmRaiAlarm (rxMultiRaiAlarm)**

Access	Read only

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Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm state has been entered. A multiframe RAI alarm state is entered when a multiframe RAI alarm indicator (bit 6 of timeslot 16 in frame 0 is set to a one) is observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe RAI indicator is intermittently received, the multiframe RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The multiframe RAI alarm condition is cleared when the multiframe RAI alarm indication is not received for 10 seconds +/- 0.5 seconds. The multiframe RAI alarm is usually an indication that the far end facility is unable to gain multiframe synchronization.

The ***8pE1Atm*** card does not support the multiframe RAI alarm.

Mib: Laps

Values: on, off

Default: off

ATTRIBUTE Laps Vc4 Vc12 E1 txMultifrmRaiAlarm (txMultiRaiAlarm)

Access: Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm is being sent on the E1 line. This is transmitted when the E1 port detects a multiframe LOF condition.

The ***8pE1Atm*** card does not generate the multiframe RAI alarm.

Mib: Laps

Values: on, off

Default: off

ATTRIBUTE Laps Vc4 Vc12 E1 ssmE1Tx

Access: Read only

Description

This attribute indicates the current Synchronization Status Message (SSM) transmitted on the E1 port within the Sa byte defined in ITU G.704.
This attribute is filtered when *ssmE1SaNumber* is set to ***none***.

Mib: Laps

Values: Decimal (0..15)

Default: No default

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ATTRIBUTE Laps Vc4 Vc12 E1 **multifrmCRC4LofAlarm (multiCRC4LofAlarm)**

Access	Read only
Description	This attribute indicates whether E1 CRC-4 multiframe LOF (loss of frame) alarm state is entered. A CRC-4 multiframe LOF alarm state is entered when a CRC-4 multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the CRC-4 multiframe LOF defects are intermittently occurring, the CRC-4 multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds. The *multifrmCRC4LofAlarm* is not implemented for the ***E1***, ***1pE1V***, ***1pE1Mvp***, ***1pE1Mvpe***, ***4pE1Mvpe***, ***8pE1Atm***, ***E1C*** and ***4pE1Aal1*** cards.
Mib	Laps
Values	on off
Default	off

GROUP Laps Vc4 Vc12 E1 **Statistics (Stats)**

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 **runningTime (runningTime)**

Access	Read only
Description	The number of seconds since the port component was activated.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 **errorFreeSec (efs)**

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	Laps
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 erroredSec (es)

Access	Read only
Description	An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 sevErroredSec (ses)

Access	Read only
Description	A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 sevErroredFrmSec (sefs)

Access	Read only
Description	A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 unavailSec

Access	Read only
Description	The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	Laps
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 **bpvErrors (bpvErrors)**

Access	Read only
Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 **crcErrors (crcErrors)**

Access	Read only
Description	If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 **frmErrors (frmErrors)**

Access	Read only
Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 **losStateChanges (losChanges)**

Access	Read only
Description	The total number of times that the line lost signal.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 **slipErrors (slipErrors)**

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Access	Read only
Description	The total number of times that the line experienced a controlled frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Vc4 Vc12 E1 Channel (Chan)

Instance	Decimal (0..31)
Groups	GROUP Laps Vc4 Vc12 E1 Chan Provisioned (Prov) GROUP Laps Vc4 Vc12 E1 Chan CustomerIdentifierData (CidData) GROUP Laps Vc4 Vc12 E1 Chan IfEntryProv (IfEntry) GROUP Laps Vc4 Vc12 E1 Chan OperationalStatus (OperStatus) GROUP Laps Vc4 Vc12 E1 Chan OsiState (State) GROUP Laps Vc4 Vc12 E1 Chan Operational (Oper) GROUP Laps Vc4 Vc12 E1 Chan AdminInfo (AdminInfo)
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots.
Mib	Laps
Opt. Subcomp.	COMPONENT Laps Vc4 Vc12 E1 Chan AtmCell (Cell) COMPONENT Laps Vc4 Vc12 E1 Chan TrunkConditioning (Tc) COMPONENT Laps Vc4 Vc12 E1 Chan FrameLinkMonitoring (Flm)
Dyn. Subcomp.	COMPONENT Laps Vc4 Vc12 E1 Chan Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Laps Vc4 Vc12 E1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.

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Mib	Laps

ATTRIBUTE **Laps Vc4 Vc12 E1 Chan** **timeslots (ts)**

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.
Mib	Laps
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

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ATTRIBUTE Laps Vc4 Vc12 E1 Chan **timeslotDataRate (dataRate)**

Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s. When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s. On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***. One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.
Mib	Laps
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **applicationFramerName**

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	Laps
Values	Link (Service, interfaceName)
Default	No default

GROUP Laps Vc4 Vc12 E1 Chan **CustomerIdentifierData (CidData)**

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Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Vc4 Vc12 E1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

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ATTRIBUTE Laps Vc4 Vc12 E1 Chan **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Vc4 Vc12 E1 Chan **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Vc4 Vc12 E1 Chan **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **usageState (osiUsage)**

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **Laps Vc4 Vc12 E1 Chan** **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — Laps

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **controlStatus (osiCntrl)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	Laps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Laps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Vc4 Vc12 E1 Chan **Operational (Oper)**

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan **actualChannelSpeed**

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Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	Laps
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Laps Vc4 Vc12 E1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Laps
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Laps
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.

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Mib	Laps
Values	no yes
Default	no

COMPONENT Laps Vc4 Vc12 E1 Chan **Test (Test)**

Groups	GROUP Laps Vc4 Vc12 E1 Chan Test OsiState (State) GROUP Laps Vc4 Vc12 E1 Chan Test Setup (Setup) GROUP Laps Vc4 Vc12 E1 Chan Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	Laps
Common Verbs	Help List Display

VERB START Laps Vc4 Vc12 E1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Laps Vc4 Vc12 E1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Laps Vc4 Vc12 E1 Chan Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE **Laps Vc4 Vc12 E1 Chan Test** **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE **Laps Vc4 Vc12 E1 Chan Test** **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib Laps

Values
idle
active (activ)
busy

Default idle

GROUP Laps Vc4 Vc12 E1 Chan Test Setup (Setup)

Properties Operational

Description

This group contains all of the operational data for a *Test* component.

Mib Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test purpose (purpose)

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib Laps

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.

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lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Laps

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Laps

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.

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customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib	Laps
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Laps
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Laps
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

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Mib	Laps
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Laps Vc4 Vc12 E1 Chan Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure

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indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Laps

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **bitsTx**

Access: Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Laps

Values: Long Integer

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **bytesTx**

Access: Read only

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Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **frmTx**

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **bitsRx**

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **bytesRx**

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **frmRx**

Access Read only

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Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Laps
Values	String (5, ASCII)

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Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test **timeRemaining**

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Laps Vc4 Vc12 E1 Chan **AtmCell (Cell)**

Groups	GROUP Laps Vc4 Vc12 E1 Chan Cell Provisioned (Prov) GROUP Laps Vc4 Vc12 E1 Chan Cell Operational (Oper) GROUP Laps Vc4 Vc12 E1 Chan Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM

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cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib Laps

Common Verbs
Help
List
Display
Add
DELete

GROUP Laps Vc4 Vc12 E1 Chan Cell Provisioned (Prov)

Properties Provisioned

Description
This group contains the provisioning attributes for the *AtmCell* component.

Mib Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell alarmActDelay (act)

Access Read and write

Description
This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib Laps

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell scrambleCellPayload (scramble)

Access Read and write

Description
Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

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Mib	Laps
Values	off on
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **correctSingleBitHeaderErrors**

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **clearDelay (clear)**

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **hecSampleInterval (hSample)**

Access	Read and write

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Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **hecErrorLimit (hLimit)**

Access: Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **lcdStateDelay (delay)**

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The

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valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	Laps
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **hecErrorIntervalLimit (hIntLimit)**

Access	Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	Laps
Values	Decimal (1..25)
Default	1

GROUP Laps Vc4 Vc12 E1 Chan Cell **Operational (Oper)**

Properties	Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **lcdAlarm (lcd)**

Access	Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects

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have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib — Laps

Values — on
off

Default — off

GROUP Laps Vc4 Vc12 E1 Chan Cell **Statistics (Stats)**

Properties — Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib — Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **uncorrectableHeaderErrors (ucErr)**

Access — Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib — Laps

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **sevErroredSec (ses)**

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **receiveCellUtilization (rxutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **transmitCellUtilization (txutil)**

Access	Read only

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Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib — Laps

Values — Decimal (0..100)

Units — %

Default — 0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell **correctableHeaderErrors (cErr)**

Access — Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib — Laps

Values — Decimal (0..4294967295)

Default — 0

COMPONENT Laps Vc4 Vc12 E1 Chan **TrunkConditioning (Tc)**

Groups — GROUP Laps Vc4 Vc12 E1 Chan Tc Provisioned (Prov)
GROUP Laps Vc4 Vc12 E1 Chan Tc Operational (Op)

Scope — Device

Description

Lp/n Ds1/n Chan/n Tc
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk

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conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib — Laps

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP Laps Vc4 Vc12 E1 Chan Tc Provisioned (Prov)

Properties — Provisioned

Description — This group contains all specific provisioning data for a *Tc* component.

Mib — Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc replacementData (data)

Access — Read and write

Description — This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

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On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib	Laps
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc **signalOneDuration (duration)**

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	Laps
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc **noServiceResponse (resp)**

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	Laps

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Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc **signalOne (sigOne)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	Laps
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc **signalTwo (sigTwo)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	Laps
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Laps Vc4 Vc12 E1 Chan Tc **Operational (Op)**

Properties	Operational

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Description	This group contains all specific operational data for a *Tc* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc **ingressConditioning (inCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc **egressConditioning (egCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the PDH line under the following conditions: bufferUnderflow (BU) AAL1 protocol errors.

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Mib	Laps
Values	off on
Default	off

COMPONENT Laps Vc4 Vc12 E1 Chan **FrameLinkMonitoring (Flm)**

Groups	GROUP Laps Vc4 Vc12 E1 Chan Flm Provisioned (Prov) GROUP Laps Vc4 Vc12 E1 Chan Flm Operational (Op)
Scope	Device
Description	*Lp/n E1/n Chan/n FrameLinkMonitoring* This component provides a monitoring function specific to a Frame Relay Channel on an E1 line. It combines the status of E1 channel-associated-signalling A-bits and HDLC frame defect.
Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Vc4 Vc12 E1 Chan Flm **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains all specific provisioning data for an *Flm* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Flm **aBitMonitoring (aBit)**

Access	Read and write
Description	This attribute controls the monitoring of A-bit defects.
Mib	Laps
Values	disabled enabled
Default	enabled

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Flm **hdlcMonitoring (hdlc)**

Access	Read and write
Description	This attribute controls the monitoring of HDLC defect.
Mib	Laps

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Values	disabled enabled
Default	No default

GROUP Laps Vc4 Vc12 E1 Chan Flm **Operational (Op)**

Properties	Operational
Description	This group contains all specific operational data for an *Flm* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Flm **flmStatus (status)**

Access	Read only
Description	This attribute indicates the status of a Frame Relay channel on an E1 line. By combining the E1 channel-associated-signalling (CAS) A-bits status, and HDLC defect, a single value indicates the likely cause of the failure. This mechanism assumes that the far end equipment loops back signaling A-bits for some or all of the timeslots in a channel. The A-bits in channel are transmitted as '0'. If they are all received as '0', it is assumed that the E1 link is up in both directions. The presence of HDLC frames indicates that the service is connected. When A-bits and HDLC frames are correctly received, ***frameLinkUp*** is indicated. When neither are received, ***frameLinkDown*** is indicated. When HDLC frames are not receive but A-bits are not at fault, ***lossOfHdlc*** is indicated. When HDLC frames are received, but there is a fault in any of timeslot's A-bits on a channel ***lossOfAbit*** is indicated.
Mib	Laps
Values	notMonitoring frameLinkUp frameLinkDown lossOfHdlc lossOfAbit
Default	No default

COMPONENT Laps Vc4 Vc12 E1 **Test (Test)**

Groups	GROUP Laps Vc4 Vc12 E1 Test OsiState (State) GROUP Laps Vc4 Vc12 E1 Test Setup (Setup) GROUP Laps Vc4 Vc12 E1 Test Results (Results)
Scope	Application

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Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib Laps

Common Verbs
Help
List
Display

VERB START **Laps Vc4 Vc12 E1 Test**

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP **Laps Vc4 Vc12 E1 Test**

Impact Service

Description

This command stops a test running on the hardware component.

GROUP **Laps Vc4 Vc12 E1 Test** **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Laps

ATTRIBUTE **Laps Vc4 Vc12 E1 Test** **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Laps

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Laps Vc4 Vc12 E1 Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Laps

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Laps Vc4 Vc12 E1 Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Laps

Values — idle
active (activ)
busy

Default — idle

GROUP Laps Vc4 Vc12 E1 Test Setup (Setup)

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Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Laps
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	Laps

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Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Laps Vc4 Vc12 E1 Test **frmSize (size)**

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Laps
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Laps Vc4 Vc12 E1 Test **frmPatternType (fpt)**

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Laps
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Laps Vc4 Vc12 E1 Test **customizedPattern (cp)**

Access	Read and write

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Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Laps
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Laps Vc4 Vc12 E1 Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Laps
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Laps
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Laps Vc4 Vc12 E1 Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In

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the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Laps Vc4 Vc12 E1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

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a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib — Laps

Values — testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default — neverStarted

ATTRIBUTE Laps Vc4 Vc12 E1 Test **bitsTx**

Access — Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib — Laps

Values — Long Integer

Default — No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test **bytesTx**

Access — Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib — Laps

Values — Long Integer

Default — No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test **frmTx**

Access — Read only

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Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test erroredFrmRx

Access	Read only

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Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Laps
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes

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Default	0.00

ATTRIBUTE Laps Vc4 Vc12 E1 Test **timeRemaining**

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Laps Vc4 Vc12 E1 **Dsp**

Scope	Device
Description	*LogicalProcessor/n E1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Dsp* components cannot be added or deleted.
Mib	Laps
Common Verbs	Help List Display

COMPONENT Laps Vc4 Vc12 E1 **Audio**

Scope	Device
Description	*LogicalProcessor/n E1/0 Audio* The *Audio* component presents the audio status of the channels on a voice card. A voice card's *Audio* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Audio* components cannot be added or deleted.
Mib	Laps
Common Verbs	Help List Display

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COMPONENT Laps CrossConnect (Xc)

Groups	GROUP Laps Xc OsiState (State) GROUP Laps Xc Operational (Oper)
Scope	Application
Description	*Laps/x CrossConnect* is added to the *Laps* Component to monitor the *crossConnect* for both internal and external faults that may occur with the *crossConnect*. This copmonent is currently only add to the ***2pSTM1Ch FP***.
Mib	Laps
Common Verbs	Help List Display

GROUP Laps Xc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Xc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Laps

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Xc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Xc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Laps
Values	idle active (activ) busy
Default	idle

GROUP Laps Xc Operational (Oper)

Properties	Operational
Description	The *CrossConnect* group is used to show the status of the *CrossConnect* during operational mode.

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Mib	Laps

ATTRIBUTE Laps Xc failureCause (failure)

Access	Read only
Description	This attribute describes the status of the CrossConnect component. Avalue of ***noFailure*** indicates that the crossconnect is working correctly. Avalue of ***cableMisplaced*** indicates that the crossconnect cable is attached and working, but it is attached to the incorrect cards. Avalue of ***facilityDefect*** indicates that the crossconnect cable is either broken or it has been removed.
Mib	Laps
Values	noFailure cableMisplaced facilityDefect
Default	No default

COMPONENT Laps InverseMultiplexerAtm (Ima)

Instance	Decimal (0..113)
Groups	GROUP Laps Ima Provisioned (Prov) GROUP Laps Ima Operational (Oper) GROUP Laps Ima Statistics (Stats) GROUP Laps Ima CustomerIdentifierData (CidData) GROUP Laps Ima OsiState (State)
Scope	Device
Description	*Lp/n InverseMultiplexerAtm/n* *Lp/n Ds3/n InverseMultiplexerAtm/n* This component is used to define an inverse multiplexing for ATM (IMA) group. IMA provides a data rate greater than DS1 E1 in increments of DS1 E1. To use IMA on an 8pDS1E1, MSA32, MSA8, 2pSTM1eCh or 2pSTM1Ch function processor, add an *Lp/n InverseMultiplexerAtm/n* component. To use IMA on a 4pDS3ChAtm function processor, add an *Lp/n Ds3/n InverseMultiplexerAtm/n* component. To use IMA in a protected configuration on the 2pSTM1Ch, add a *Laps/n InverseMultiplexerAtm/n* component. The instance range 0..7 applies to 8pDS1Atm, 8pE1Atm, 8pDS1Msa and 8pE1Msa cards. The instance range 0..13 applies to 4pDS3ChAtm cards. The instance range 0..29 applies to MSA32 cards. The instance range 0..113 applies to the 2pStm1eCh and 2pSTM1Ch cards. The instance number of an *IMA* group must not be the same as the

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instance number of a *DS1*/*E1* “ATM UNI port” under the same *Lp*. An “ATM UNI port” is a *DS1* or *E1* component with a single *Chan* whose *applicationFramer* attribute is linked to an *AtmIf* component. On an MSA32 card, ports that are used as IMA links have two immiscible sub-ranges: 0..15 and 16..31. The instance number of an *IMA* group must be in the same sub-range as all of its ports. IMA sub-ranges also exist on the 2pStm1eCh and 2pSTM1Ch cards, instances 0..56 are allowed on port SDH 0, and instances 57..113 are allowed on port SDH 1.

Mib	Laps
Opt. Subcomp.	COMPONENT Laps Ima Link (Lk)
Dyn. Subcomp.	COMPONENT Laps Ima Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Laps Ima Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Ima* component. The default values of *linkSelectionCriterion* and *linkRetryTimeout* depend on card type.
Mib	Laps

ATTRIBUTE Laps Ima linkSelectionCriterion (select)

Access	Read and write
Description	This attribute specifies the method to be used by the IMA group when selecting links to be activated. This comes into effect only when the configured links do not respect the maximum differential delay (otherwise all links are accepted). If ***leastDelay*** is chosen, first the link having the smallest delay is selected as the reference link. The IMA group includes all links which respect the maximum differential delay relative to the reference link. If ***maxBandwidth*** is chosen, the IMA group selects the maximum possible number of links, with each selected link respecting the maximum differential delay relative to every other selected link. When more than one possibility exists, the combination which offers the least delay is selected. The default value for Multi-Service Access cards is ***leastDelay***, and for all other cards is ***maxBandwidth***. On Multi-Service Access cards ***leastDelay***

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is the only acceptable provisionable value.

Mib	Laps
Values	leastDelay maxBandwidth
Default	No default

ATTRIBUTE Laps Ima maxDiffDelay (delay)

Access	Read and write
Description	This attribute specifies the maximum differential delay between links acceptable in the IMA group. If a link violates that maximum differential delay, it will not be active in the IMA group and an alarm will be generated. For the 4pDS3ChAtm card, the value must not exceed 70.
Mib	Laps
Values	Decimal (1..100)
Units	msec
Default	25

ATTRIBUTE Laps Ima linkRetryTimeout (retry)

Access	Read and write
Description	This attribute specifies the amount of time before reactivation of a link is attempted after it recovers from a failure condition. The default value for Multi-Service Access cards is ***1***, and for all other cards is ***10***. On Multi-Service Access cards ***1*** is the only acceptable provisionable value.
Mib	Laps
Values	Decimal (0..1000)
Units	seconds
Default	No default

ATTRIBUTE Laps Ima applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the *AtmIf* component using the *Ima*. An example is *AtmIf/31.*
Mib	Laps
Values	Link (Service, interfaceName)

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Default	No default

ATTRIBUTE Laps Ima transmitClockMode (clock)

Access	Read and write
Description	This attribute specifies the transmit clocking mode. If ***itc*** (Independent Transmit Clock) is chosen, the physical ports used by the IMA group may have different clocking sources. If ***ctc*** (Common Transmit Clock) is chosen, it is recommended that the physical ports used by the IMA group have the same clocking source. However, if the physical ports have different clocking sources, the operator should ensure that all the clocking sources have the same rate.
Mib	Laps
Values	itc ctc
Default	itc

ATTRIBUTE Laps Ima protocol (prot)

Access	Read and write
Criticality	Component
Description	This attribute specifies which IMA protocol the component should run. If ***atmForum10*** is chosen, the ATM Forum's IMA protocol (version 1.0) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA also uses the ATM Forum's IMA protocol 1.0. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If ***atmForum11*** is chosen, the ATM Forum's IMA protocol (version 1.1) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA uses the ATM Forum's IMA protocol 1.0 or 1.1. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If the far end is 1.0, then the near end downgrades to 1.0. After the downgrade, this attribute continues to specify the provisioned protocol version, while the *activeProtocol* operational attribute of the IMA component specifies the protocol version effectively running. If ***proprietary*** is chosen, Nortel's proprietary IMA protocol will be used. This protocol version is not currently supported as the IMA group will not inter-operate with IMA implementations from other vendors. Feature ***ima*** must be provisioned on the LP for this protocol to be used. The DEFAULT on the 2pStm1eCh and 2pSTM1Ch function processors is atmForum11.
Mib	Laps
Values	atmForum10 proprietary atmForum11

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Default	No default

GROUP Laps Ima Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Ima* component.
Mib	Laps

ATTRIBUTE Laps Ima failureCause (cause)

Access	Read only
Description	This attribute indicates the cause of the current local end failure experienced by the IMA group. The failure may have occurred during a start-up procedure or during normal operation. Possible values are: ***noFailure***: no local end failure. ***noGoodLinksInStartup***: no good links were available during IMA start-up. ***badGidInStartup***: during start-up, different group identifiers (GIDs) were received on the links. ***badLidInStartup***: during start-up, duplicate link identifiers (LIDs) were received on the links. ***unsupportedFrameLengthInStartup***: during start-up, an unsupported frame length was received. ***timeoutInStartup***: a time-out has occurred during start-up. ***noGoodLinks***: no good links are available in the IMA group. ***remoteFailure***: the far end is down. ***unsupportedSymmetryInStartup***: the symmetry proposed by the far end is not supported on the near-end. This value will occur when the IMA group is running the ATM Forum protocol and the far end is proposing a group symmetry other than “symmetric configuration and operation”. ***unsupportedVersionInStartup***: the ima version proposed by the far end is not supported on the near-end.
Mib	Laps
Values	noFailure noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks remoteFailure unsupportedSymmetryInStartup unsupportedVersionInStartup
Default	No default

ATTRIBUTE Laps Ima remoteDefect (remDef)

Access	Read only

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Description	This attribute indicates the cause of the current far end defect experienced by the IMA group. For the ATM Forum IMA protocol, possible values are: ***noDefect***: no defect. ***unsupportedFrameLengthInStartup***: during the far end's start-up, an unsupported frame length was received. ***unsupportedSymmetryInStartup***: during the far end's start-up, an unsupported symmetry configuration was received. ***otherAbortStartup***: the far end has aborted its start-up for another reason. This could be because different Gids were received on the links or if duplicate link identifiers (LIDs) were received. ***insufficientLinks***: the far end does not have sufficient links active. This value will be displayed if the far end IMA group is locked. ***blocked***: the far end IMA group is blocked. For the proprietary IMA protocol, possible values are: ***noDefect***: no defect. ***noGoodLinksInStartup***: no good links were available during the far end's start-up. ***badGidInStartup***: during the far end's start-up, different GIDs were received on the links. ***badLidInStartup***: during the far end's start-up, duplicate link identifiers (LIDs) were received on the links. ***unsupportedFrameLengthInStartup***: during the far end's start-up, an unsupported frame length was received. ***timeoutInStartup***: a time out has occurred during the far end's start-up. ***noGoodLinks***: no good links are available in the far end IMA group. ***blocked***: the far end IMA group is locked. ***unsupportedVersionInStartup***: the ima version proposed by the far end is not supported on the near-end.
Mib	Laps
Values	noDefect noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks locked unsupportedSymmetryInStartup otherAbortStartup insufficientLinks blocked unsupportedVersionInStartup
Default	No default

ATTRIBUTE Laps Ima remoteLidsConfig (remConf)

Access	Read only

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Description	This attribute indicates all the links which have been configured in the remote IMA group. For example, if links 1, 3 and 5 have been configured in the remote IMA group, this attribute would contain ***1 3 5***.
Mib	Laps
Set of	Decimal (0..31)
Default	No default

ATTRIBUTE Laps Ima remoteLidsActive (remAct)

Access	Read only
Description	This attribute indicates all the links which are active in the remote IMA group. For example, if links 1 and 5 are active in the remote IMA, this attribute would contain ***1 5***.
Mib	Laps
Set of	Decimal (0..31)
Default	No default

ATTRIBUTE Laps Ima cellCapacity (cap)

Access	Read only
Description	This attribute indicates the total cell capacity (in cells per second) which is provided to the ATM layer. This cell capacity takes into account the physical and IMA level overheads.
Mib	Laps
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE Laps Ima remoteGid (remGid)

Access	Read only
Description	This attribute indicates the IMA group identifier (GID) used by the remote IMA. A value of 0 will be displayed if the group is not receiving IMA Control Protocol (ICP) cells.
Mib	Laps
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Laps Ima clockingModeMismatch (mismatch)

Access	Read only

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Description	This attribute indicates whether or not both ends of the IMA group are using the same transmit clocking mode (***itc***/***ctc***). Its value will be ***yes*** if both ends are not using the same transmit clocking mode. A clocking mode mismatch does not prevent an IMA group from coming up and can be corrected by using the same clocking mode at both ends.
Mib	Laps
Values	no yes
Default	No default

ATTRIBUTE Laps Ima activeProtocol (activeProt)

Access	Read only
Description	This attribute indicates which IMA protocol the *Ima* component is effectively running. This attribute is supported on the 8pDs1Atm, 8pE1Atm, 4pDS3ChAtm, 2pStm1eCh and 2pSTM1Ch cards. This attribute is not supported on the MSA32 and MSA8 cards. The value of this attribute is the same as the provisioned *protocol* attribute if the IMA is operating at the provisioned protocol version. The value of this attribute indicates the dongraded protocol version if the IMA has gone through a protocol version downgrade upon IMA 1.1 to IMA 1.0 interworking.
Mib	Laps
Values	atmForum10 proprietary atmForum11
Default	No default

GROUP Laps Ima Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Ima* component.
Mib	Laps

ATTRIBUTE Laps Ima runningTime (running)

Access	Read only
Description	This attribute indicates the length of time (in seconds) for which the *Ima* component has been in the unlocked state or has been used for operational testing.
Mib	Laps
Values	Decimal (0..4294967295)

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Units	seconds
Default	No default

ATTRIBUTE Laps Ima unavailSec (unavail)

Access	Read only
Description	This attribute indicates the number of one second intervals during which the *Ima* component has been unlocked and out of service.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima failures (fail)

Access	Read only
Description	This attribute indicates the number of complete failures, during start-up or normal operation, that the *Ima* component has experienced since being added. It must be noted that a service degradation, such as 1 of the 3 links in an IMA group being down, is not counted as a failure. If an *Ima* component is in a failure loop and does not come up, this count will only increase by 1.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute indicates the ratio of the number of valid, assigned user cells received on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Laps Ima transmitCellUtilization (txutil)

Access	Read only
Description	This attribute indicates the ratio of the number of user cells transmitted on the IMA group to the IMA cell capacity (based on the number of active

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links). The utilization is calculated over a one minute period.

Mib	Laps
Values	Decimal (0..100)
Units	%
Default	No default

GROUP Laps Ima CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Ima customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Ima OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this

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group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Laps

ATTRIBUTE Laps Ima adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Laps

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Laps Ima operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Laps

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Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps lma usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps lma availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

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The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps lma proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Ima controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

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The value ***suspended*** indicates that the service has been administratively suspended.

Mib — Laps

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Laps lma alarmStatus (osiAlarm)

Access — Read only

Description

If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Laps

Set of
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

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ATTRIBUTE Laps Ima standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Ima unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

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COMPONENT Laps Ima Test (Test)

Groups	GROUP Laps Ima Test OsiState (State) GROUP Laps Ima Test Setup (Setup) GROUP Laps Ima Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	Laps
Common Verbs	Help List Display

VERB START Laps Ima Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Laps Ima Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Laps Ima Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Ima Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock*

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command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Ima Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Ima Test **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	Laps
Values	idle active (activ) busy
Default	idle

GROUP Laps Ima Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Laps

ATTRIBUTE Laps Ima Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Laps
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Laps Ima Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1

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byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Laps

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Laps Ima Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Laps

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Laps Ima Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

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Mib	Laps
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Laps Ima Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Laps
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Laps Ima Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Laps
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Laps Ima Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Laps

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Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Laps Ima Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Laps Ima Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Laps

ATTRIBUTE Laps Ima Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has

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failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Laps

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Laps Ima Test bitsTx

Access: Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Laps

Values: Long Integer

Default: No default

ATTRIBUTE Laps Ima Test bytesTx

Access: Read only

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Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Ima Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Ima Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Ima Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Ima Test frmRx

Access	Read only

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Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Ima Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Ima Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Laps
Values	String (5, ASCII)

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Default	No default

ATTRIBUTE Laps Ima Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Laps Ima Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Laps Ima Link (Lk)

Instance	Decimal (0..31)
Groups	GROUP Laps Ima Lk Provisioned (Prov) GROUP Laps Ima Lk Operational (Oper) GROUP Laps Ima Lk Statistics (Stats) GROUP Laps Ima Lk OsiState (State)
Scope	Device
Description	*Lp/n Ima/n Link/n* *Lp/n Ds3/n Ima/n Link/n* This component is used to define a DS1/E1 link belonging to an IMA group. The instance number of the *Link* subcomponent corresponds to the link identifier (LID) used by the link in IMA Control Protocol (ICP) cells. To

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use Ima on an 8pDS1E1 function processor, add *Lp/n Ima/n Link/n*. To use Ima on a 4pDS3ChAtm function processor, add *Lp/n Ds3/n Ima/n Link/n*.

Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Ima Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Laps

ATTRIBUTE Laps Ima Lk interfaceName

Access	Read and write
Criticality	Component
Description	This attribute associates the *Link* subcomponent with a specific interface on a function processor, for example *Lp/5 E1/3 Chan/0*. If IMA groups and independent links coexist on a card running IMA and per-VC queueing is enabled, plan the selection of DS1 or E1 ports to be used by the IMA group carefully. For a 4pDS3ChAtm function processor there is no per-VC queueing.
Mib	Laps
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Laps Ima Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Laps

ATTRIBUTE Laps Ima Lk failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause on this link. Possible values are: ***noFailure***: there is no failure on this link. ***interfaceDown***: the physical port used by the link is down. ***lif***: the link is in loss of IMA frame (LIF) state. ***lods***: the link is in loss of delay synchronization (LODS) state; that is, it

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has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group. It must be noted that hysteresis is used for the LODS condition.
protocolError: the link is down because of a time-out or because bad values are being received in IMA Control Protocol (ICP) cells.
remoteFailure: the far end link is down.
misconnected: the link is down because the IMA group has declared, after using its transmit test pattern procedure, that this link is not properly connected. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
unsupportedFrameLength: the link is down because it is receiving from the far end a frame length which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
unsupportedSymmetry: the link is down because it is receiving from the far end a group symmetry which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
noIcp: the link is down because it is not receiving IMA Control Protocol (ICP) cells. This value can occur only if the *protocol* for the IMA group is ***atmForum10***.
unsupportedVersion: the link is down because it is receiving from the far end a group version that is not supported by the local IMA group.

Mib: Laps

Values:
noFailure
interfaceDown
lif
lods
protocolError
remoteFailure
misconnected
unsupportedFrameLength
unsupportedSymmetry
unsupportedVersion
noIcp

Default: No default

ATTRIBUTE Laps Ima Lk remoteDefect (remDef)

Access: Read only

Description: This attribute indicates the IMA remote defect indicator (RDI) currently being received on this link. Possible values are:
noDefect: no defect.
physicalLayerDefect: the interface used by the remote link has a physical layer defect. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
interfaceDown: the physical interface used by the remote link is down.This value can occur only if the *protocol for the IMA group is*

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	proprietary. ***lif***: the remote link has a loss of IMA frame (LIF) defect. ***lods***: the remote link has a loss of delay synchronization (LODS) defect; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group.
Mib	Laps
Values	noDefect interfaceDown lif lods physicalLayerDefect
Default	No default

ATTRIBUTE Laps Ima Lk remoteLid (remLid)

Access	Read only
Description	This attribute indicates the link identifier (LID) used by the remote IMA group on the physical link. A value of 0 will be displayed if the link is not receiving IMA Control Protocol (ICP) cells or if the physical layer is down.
Mib	Laps
Values	Decimal (0..31)
Default	No default

ATTRIBUTE Laps Ima Lk relativeDelay (rel)

Access	Read only
Description	This attribute indicates the latest measured differential delay (rounded up in milliseconds) between this link and the link, in the same IMA group, having the least delay. A value of 4294967295 indicates that the relative delay could not be measured. This can be due to physical layer problems or to no IMA Control Protocol (ICP) cells being received on the link.
Mib	Laps
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Laps Ima Lk lastOifCause (oif)

Access	Read only
Description	This attribute indicates the cause of the last out of IMA frame (OIF) anomaly on the link. Possible values are: ***noOif***: no OIF was detected. ***badFrameLength***: an IMA Control Protocol (ICP) cell with an unexpected frame length was received.

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badGid: an ICP cell with an unexpected group identifier (GID) was received.
badLid: an ICP cell with an unexpected link identifier (LID) was received.
badOffset: an ICP cell with an unexpected cell offset was received.
badSequenceNumber: an ICP cell with an unexpected frame sequence number was received.
stuffError: an illegal stuffing sequence was received.
missingIcp: an expected ICP cell was not received.
unexpectedIcp: an unexpected ICP cell was received.
erroredIcp: two consecutive errored ICP cells were received.
noCells: no cells are being received on the link.
idleCell: an idle cell was received on the link.
badOamLabel: an ICP cell with an unexpected oam label was received.

Mib	Laps
Values	noOif badFrameLength badGid badLid badOffset badSequenceNumber stuffError missingIcp unexpectedIcp erroredIcp noCells idleCell badOamLabel
Default	No default

GROUP Laps Ima Lk Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Link* subcomponent.
Mib	Laps

ATTRIBUTE Laps Ima Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time (in seconds) for which the *Link* component has been running.
Mib	Laps
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Laps Ima Lk unavailSec (unavail)

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Access	Read only
Description	For an IMA group whose *protocol* is ***atmForum10***, this attribute counts the number of unavailable seconds. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) and ends at the start of 10 contiguous seconds with no SES.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk failures (fail)

Access	Read only
Description	This attribute counts the number of failures, during link addition or normal operation, that the link has experienced.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk unusableSec (uus)

Access	Read only
Description	This attribute counts the number of one second intervals during which the near end has been in an unusable state.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk sevErroredSec (ses)

Access	Read only
Description	This attribute counts the number of one second intervals in which at least 30 percent of the IMA Control Protocol (ICP) cells were counted as ICP violations or at least one link defect (physical layer, LIF and LODS defects) was detected. This attribute will not increment during UAS (Unavailable Second) conditions.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk farEndUnusableSec (feUus)

Access	Read only

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Description	This attribute counts the number of one second intervals during which the “Tx/Rx Unusable” condition has been received from the far end.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk farEndSevErroredSec (feSes)

Access	Read only
Description	This attribute counts the number of one second intervals containing one or more RDI defects. This attribute will not increment during FEUAS (Far-End Unavailable Second) conditions.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk farEndUnavailSec (feUnavail)

Access	Read only
Description	This attribute counts the number of unavailable seconds at the far end. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) at the far end and ends at the start of 10 contiguous seconds at the far end with no SES.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk icpViolations (iv)

Access	Read only
Description	This attribute counts the number of errored, invalid or missing IMA Control Protocol (ICP) cells during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk txStuffEvents (txStuff)

Access	Read only
Description	This attribute counts the number of Stuff events transmitted during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.

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Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk rxStuffEvents (rxStuff)

Access	Read only
Description	This attribute counts the number of Stuff events received during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps Ima Lk idleCellSec (idle)

Access	Read only
Description	This attributes counts the number of one second intervals during which one or more idle cells was received. The reception of idle cells is an abnormal condition which could be caused by the remote IMA using the Common Transmit Clock mode with ports whose clock sources are not synchronized.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

GROUP Laps Ima Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Ima Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Ima Lk operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Laps Ima Lk usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare

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capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps lma Lk availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is

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degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — Laps

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Laps Ima Lk **proceduralStatus (osiProc)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Laps

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Laps Ima Lk controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Laps Ima Lk alarmStatus (osiAlarm)

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Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Laps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Laps Ima Lk standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same

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information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Ima Lk unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Laps

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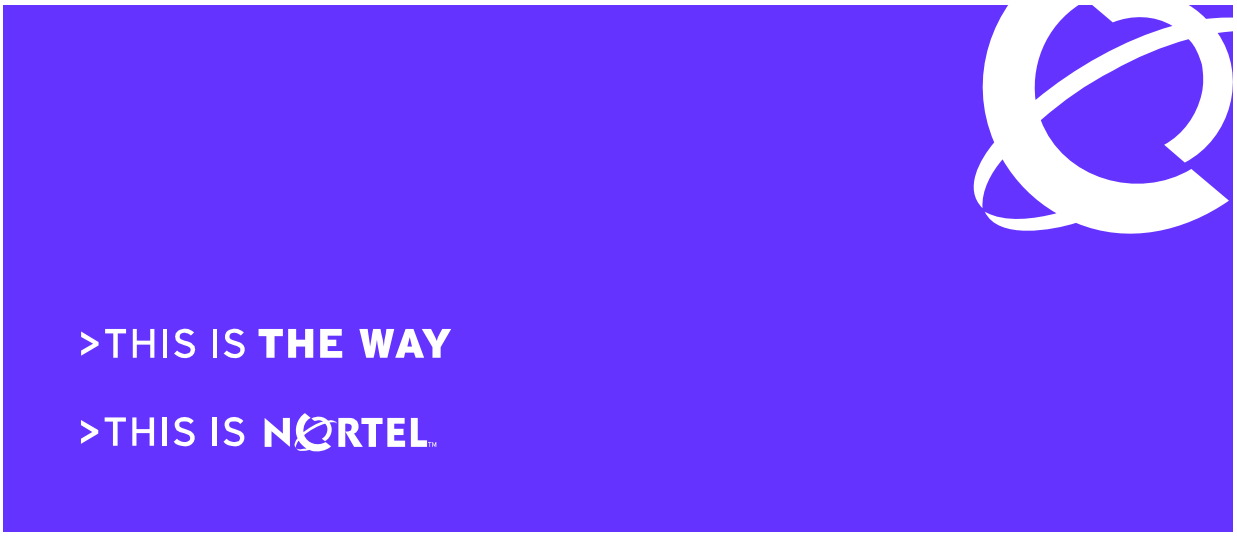

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - La

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COMPONENT LanApplication (La)

Instance	Decimal (0..255)
Groups	GROUP La CustomerIdentifierData (CidData) GROUP La MediaProvisioned (MediaProv) GROUP La IfEntryProv (IfEntry) GROUP La OsiState (State) GROUP La OperationalStatus (OperStatus) GROUP La Operational (Oper)
Scope	Application
Description	*LanApplication/n* The *LanApplication* component, using the *Framer* subcomponent, is used to provide the interface either between the *VirtualRouter ProtocolPort* and a LAN component such as *Ethernet*, or to an *EthernetVirtualLineService* component.
Mib	LanDrivers
Subcomponents	COMPONENT La Framer
Opt. Subcomp.	COMPONENT La EthernetVirtualLineService (Evls) COMPONENT La EthernetVirtualConnection (Evc) COMPONENT La Vlan COMPONENT La EthernetPolicy (Policy)
Dyn. Subcomp.	COMPONENT La EthernetStatistics (Stats)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP La CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

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Mib	LanDrivers

ATTRIBUTE La customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LanDrivers
Values	Decimal (0; 1..8191)
Default	0

GROUP La MediaProvisioned (MediaProv)

Properties	Provisioned
Description	This group contains the base provisioning data for the *LanApplication/n* component.
Mib	LanDrivers

ATTRIBUTE La linkToProtocolPort

Access	Read and write
Description	This attribute specifies the *ProtocolPort* component to which the application is associated. This attribute must not be set if there is an *EthernetVirtualLineService* subcomponent under this *LanApplication* component or the *enetConnection* attribute is set.
Mib	LanDrivers
Values	Link (Service, linkToMedia)
Default	No default

ATTRIBUTE La enetConnection

Access	Read and write

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Description	This attribute specifies the Enet component to which the application is associated. This attribute must not be set if there is an *EthernetVirtualLineService* subcomponent under this *LanApplication* component or the *linkToProtocolPort* attribute is set.
Mib	LanDrivers
Values	Link (Service, linkToEnetIf)
Default	No default

GROUP La IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE La ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE La ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP La OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — LanDrivers

ATTRIBUTE La adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — LanDrivers

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE La operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — LanDrivers

Values — enabled (ena)
disabled (dis)

Default — disabled

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ATTRIBUTE La usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

GROUP La OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE La snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP La Operational (Oper)

Properties	Operational
Description	This group contains operational attributes specific to the *LanApplication* component.
Mib	LanDrivers

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ATTRIBUTE La macAddress

Access	Read only
Description	This attribute indicates the media access controller (MAC) address which was assigned to this component by the system. The value is displayed in canonical format. No two stations in a network may have the same MAC address.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

COMPONENT La EthernetVirtualLineService (Evls)

Groups	GROUP La Evls Provisioned (Prov)
Scope	Application
Description	*La/n EthernetVirtualLineService* This component represents the Ethernet Virtual Line Service. It can be configured on an Ethernet interface that is operating in either port-mode or VLAN-mode. It enables the provisioning of both end-to-end and single-ended EVCs. The end-to-end configuration originates and terminates the EVC on an Ethernet interface. The single-ended configuration originates the EVC on an Ethernet interface and terminates it on an ATM interface. When the Ethernet interface is operating in port-mode, this component cannot co-exist with the *linkToProtocolPort* or *enetConnection* attributes being set.
Mib	LanDrivers
Subcomponents	COMPONENT La Evls EthernetLocalAddress (LocalAddr)
Common Verbs	Help List Display Add DELete

GROUP La Evls Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetVirtualLineService* component.
Mib	LanDrivers

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ATTRIBUTE La Evls softPvcRetryPeriod (sRetryPeriod)

Access	Read and write
Description	This attribute specifies the interval at which an SPVC connection attempts re-establishment after the calling end of the SPVC initiates the setup request and receives a release message.
Mib	LanDrivers
Values	Decimal (10..3600)
Units	seconds
Default	20

ATTRIBUTE La Evls softPvcHoldOffTime (sHoldOffTime)

Access	Read and write
Description	This attribute specifies how long to hold off retries following the release of a connection.
Mib	LanDrivers
Values	Decimal (0; 50..20000)
Units	msec
Default	0

COMPONENT La Evls EthernetLocalAddress (LocalAddr)

Groups	GROUP La Evls LocalAddr Provisioned (Prov) GROUP La Evls LocalAddr Operational (Oper)
Scope	Application
Description	*La/x Evls EthernetLocalAddress* This component represents the local address of the Ethernet interface for the Ethernet Virtual Line Service in the network.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Evls LocalAddr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetLocalAddress* component.
Mib	LanDrivers

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ATTRIBUTE La Evls LocalAddr nsapAddress (nsapAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies a 40-digit ATM address in standard ISO NSAP format. This is the local address of the Ethernet interface for the Ethernet Virtual Line Service within the ATM routing database. If the default value is used, an internal NSAP address is generated using the value of the *ModuleData nodePrefix* attribute and the value of the End System Identifier (ESI) that is the assigned number for EVLS. This internal NSAP address can be displayed using the *EthernetLocalAddress activeNsapAddress* operational attribute.
Mib	LanDrivers
Values	String (40, AESANsapAddress)
Default	470000000000000000000000000000000000000000

GROUP La Evls LocalAddr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the *EthernetLocalAddress* component.
Mib	LanDrivers

ATTRIBUTE La Evls LocalAddr activeNsapAddress (actNsapAddr)

Access	Read only
Description	This attribute indicates the operational local NSAP address of the Ethernet interface for the Ethernet Virtual Line Service in the ATM Network.
Mib	LanDrivers
Values	String (0..40, ASCII)
Default	No default

COMPONENT La EthernetVirtualConnection (Evc)

Groups	GROUP La Evc Provisioned (Prov) GROUP La Evc OsiState (State) GROUP La Evc OperationalStatus (OperStatus) GROUP La Evc Operational (Oper) GROUP La Evc Statistics (Stats)
Scope	Application
Description	*La/x EthernetVirtualConnection* *La/x Vlan/y EthernetVirtualConnection*

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When this component is added to a *LanApplication* component, it represents a VC that is established between this Ethernet interface and either another Ethernet interface or an ATM UNI VCC.

When this component is added to a *Vlan* component, it represents a VC that is established between this Ethernet VLAN and either another Ethernet VLAN or an ATM UNI VCC.

The EVC is established over an ATM PNNI network using an ATM SPVC VCC. It can be configured to use a dedicated ATM transport VC, or to aggregate with other EVCs over a shared ATM transport VC established by the *EthernetTransportSystem* component. This latter option is only available when this component exists under the *LanApplication* component in VLAN-mode, or under a *Vlan* component.

This EVC is used to transparently transport Ethernet v2.0 and IEEE 802.3 frames. These frames are stripped of the Ethernet FCS and encapsulated using RFC2684 bridged mode encapsulation before being transported.

When this component is under the *LanApplication* component in port-mode, and the *EthernetPolicy* component does not exist, the default behavior of EVLS is to accept all frames received from the Ethernet interface. If the *EthernetPolicy* component exists, and the and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, only untagged and priority-tagged frames are accepted, all other frames are discarded and counted by the *EthernetStatistics unknownVlanId* statistic. With this same configuration, and the *unknownVlanIdTreatment* attribute set to ***accept***, all frames are accepted.

When this component is under the *LanApplication* component in VLAN-mode, and the port-VLAN is configured with an EVC, and the *EthernetPolicy* component does not exist, the default behavior of EVLS is to discard all unknown VLAN-tagged frames received from the Ethernet interface. If the *EthernetPolicy* component exists, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, only untagged, priority-tagged and port-VLAN ID (VID=1) frames are accepted, all other frames are either accepted by a configured *Vlan* component instance, or discarded and counted by the *EthernetStatistics unknownVlanId* statistic. With this same configuration, and the *unknownVlanIdTreatment* attribute set to ***accept***, all untagged, priority-tagged, port-VLAN ID frames and unknown VLAN-tagged frames received from the Ethernet interface are classified as port-VLAN traffic.

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When this component is under the *Vlan* component, only frames with their VID set to this *Vlan* component instance are accepted by this EVC.

Mib LanDrivers

Opt. Subcomp. COMPONENT La Evc EthernetVirtualConnectionPolicer (EvcPolicer)
COMPONENT La Evc EthernetSourceEvc (SrcEvc)
COMPONENT La Evc EthernetQualityOfService (EQoS)

Opt. Subcomp. COMPONENT La Evc EvcSpvc (Spvc)

Common Verbs
Help
List
Display
Add
DELete

GROUP La Evc Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes for the *EthernetVirtualConnection* component.

Mib LanDrivers

ATTRIBUTE La Evc aggregation (aggr)

Access Read and write

Description This attribute specifies whether to use a dedicated ATM VC to establish the connection, or to aggregate with other EVCs over a shared ATM VC established by the *EthernetTransportSystem* component.

The possible values are:

disabled: this value indicates that this EVC should use a dedicated transport VC established by this component.

enabled: this value indicates that this EVC should be aggregated over a shared transport VC established by the *EthernetTransportSystem* component.

Mib LanDrivers

Values
disabled
enabled

Default disabled

ATTRIBUTE La Evc preserveVlanTag (presVlanTag)

Access Read and write

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Description	This attribute specifies whether the VLAN tag is preserved or removed for frames received from the Ethernet interface by this Evc, when the *remoteVlanId* is set to ***0***. This attribute is ignored if the *removeVlanId* attribute for this Evc is set to any other value. When this attribute is set to ***disabled***, the VLAN tag is removed from priority and VLAN-tagged frames received from the Ethernet interface, for this EVC, before being transported across the network as untagged. When this attribute is set to ***enabled***, the VLAN tag is preserved for priority and VLAN-tagged frames received from the Ethernet interface, for this EVC, and transparently transported across the network. If present, the original VID of the frame is preserved. The default is ***enabled***.
Mib	LanDrivers
Values	disabled enabled
Default	enabled

GROUP La Evc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE La Evc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE La Evc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE La Evc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

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GROUP La Evc OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE La Evc snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP La Evc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Evc remoteAddress (rAddr)

Access	Read only
Description	This attribute indicates the 40-digit NSAP address of the far end Ethernet interface to which this EVC is established.
Mib	LanDrivers
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE La Evc remoteVlanId (rVlanId)

Access	Read only
Description	This attribute indicates the identifier of the VLAN on the far end Ethernet interface to which this EVC is established.
Mib	LanDrivers
Values	Decimal (0..4094)

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Default	No default

GROUP La Evc Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Evc vcDownDiscards (vcDownDisc)

Access	Read only
Description	This attribute counts the frames received from the Ethernet interface for this EVC that have been discarded because the ATM transport VC was inactive. The value wraps to zero when it exceeds the maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La Evc EthernetVirtualConnectionPolicer (EvcPolicer)

Groups	GROUP La Evc EvcPolicer Provisioned (Prov) GROUP La Evc EvcPolicer Operational (Oper) GROUP La Evc EvcPolicer Operational (Oper)
Scope	Application
Description	*La/x Evc EthernetVirtualConnectionPolicer* *La/x Vlan/y Evc EthernetVirtualConnectionPolicer* This component provides the Ethernet policing parameters for traffic received by the LAN or by the port-VLAN EVC at the ingress access point.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Evc EvcPolicer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *EthernetVirtualConnectionPolicer* component.

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Mib	LanDrivers

ATTRIBUTE La Evc EvcPolicer policing (policing)

Access	Read and write
Description	This attribute is used to enable or disable policing for the *EVC*.
Mib	LanDrivers
Values	disabled enabled
Default	disabled

ATTRIBUTE La Evc EvcPolicer committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate in kilobits per second(k bits/s). It is the rate at which the EVC agrees to transport Ethernet frames under normal conditions, and meets the performance objectives. An exception to this occurs when this attribute is provisioned to be ***0***, the *committedBurstSize* attribute is ignored, in which case all traffic for this EVC is treated as excess traffic. This attribute can be set to ***sameAsEvc***, in order to use the same value as the *EQoS commitedInformationRate* attribute for the policer. It can be also be used to override the provisioned *EQoS committedInformationRate* attribute for the policer. On the 4pGe FP, this value can be configured in increments of 1,000 kbits/s. An increment of less than 1,000 kbits/s is rounded up to the nearest 1,000 kbits/s. On the 4p/8pEth100BaseT FP, this value can be configured in increments of 1 kbit/s.
Mib	LanDrivers
Values	Decimal (0..1000000) sameAsEvc
Units	kbit/s
Default	sameAsEvc

ATTRIBUTE La Evc EvcPolicer excessInformationRate (eir)

Access	Read and write
Description	This attribute specifies the excess information rate in kilobits per second (kbits/s). It is the rate at which EVC may transport Ethernet frames in excess of the *committedInformationRate*, without any performance objectives. An exception to this occurs when this attribute is provisioned to

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be ***0***, in which case the *excessBurstSize* attribute is ignored, and all traffic for this EVC in excess of the *committedInformationRate* is discarded.

This attribute can be set to ***sameAsEvc***, in order to use the same value as the *EQoS excessInformationRate* attribute for the policer. It can also be used to override the provisioned *EQoS excessInformationRate* attribute for the policer.

On the 4pGe FP, this value can be configured in increments of 1,000 kbits/s. An increment of less than 1,000 kbits/s is rounded up to the nearest 1,000 kbits/s.

On the 4p/8pEth100BaseT FP, this value can be configured in increments of 1 kbit/s.

Mib	LanDrivers
Values	Decimal (0..1000000) sameAsEvc
Units	kbit/s
Default	sameAsEvc

ATTRIBUTE La Evc EvcPolicer committedBurstSize (cbs)

Access	Read and write
Description	This attribute specifies the committed burst size in bits. It is the maximum amount of data this EVC makes available for a burst of ingress Ethernet frames sent at the ethernet access rate to remain CIR-conformant. An exception to this occurs when this attribute is provisioned to be ***0***, the *committedInformationRate* attribute is ignored, in which case all traffic for this EVC is treated as excess traffic. The attribute can be set as ***sameAsEvc***, in order to use the same value as the *EQoS committedBurstSize* attribute for the policer. It can also be used to override the provisioned *EQoS committedBurstSize* attribute for the policer.
Mib	LanDrivers
Values	Decimal (0..100000000) sameAsEvc
Units	bits
Default	sameAsEvc

ATTRIBUTE La Evc EvcPolicer excessBurstSize (ebs)

Access	Read and write
Description	This attribute specifies the excess burst size in bits. It is the maximum amount of data this *EVC* makes available for a burst of ingress Ethernet

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	frames sent at the Ethernet access rate in excess of the *committedBurstSize*. An exception to this occurs when this attribute is provisioned to be ***0***, the *excessInformationRate* attribute is ignored, in which case all traffic in excess of the *committedBurstSize* for this EVC is discarded.
Mib	LanDrivers
Values	Decimal (0..100000000)
Units	bits
Default	800000

GROUP La Evc EvcPolicer Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *EthernetVirtualConnectionPolicer* component.
Mib	LanDrivers

ATTRIBUTE La Evc EvcPolicer effectiveCommittedInformationRate (ecir)

Access	Read only
Description	This attribute indicates the committed information rate in kilobits per second (kbits/s). It is the rate at which the *EVC* agrees to transport Ethernet frames under normal conditions. An exception to this occurs when this attribute is provisioned to be ***0***, the *committedBurstSize* attribute is ignored, in which case all traffic for this EVC is treated as excess traffic.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	kbit/s
Default	No default

ATTRIBUTE La Evc EvcPolicer effectiveExcessInformationRate (eeir)

Access	Read only
Description	This attribute indicates the excess information rate in kilobits per second (kbits/s). It is the rate at which the EVC makes an effort to transport the Ethernet frames in excess of the *committedInformationRate* . Traffic received for this EVC that is above the *committedInformationRate* and within this *excessInformationRate* is accepted as non-conformant traffic. Traffic received for this EVC that is in excess of this *excessInformationRate* is discarded.
Mib	LanDrivers
Values	Decimal (0..1000000)

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Units	kbit/s
Default	No default

ATTRIBUTE La Evc EvcPolicer effectiveCommittedBurstSize (ecbs)

Access	Read only
Description	This attribute indicates the committed burst size in bits. It is the amount of Ethernet frame data that the EVC agrees to transport under normal conditions. Traffic received for this EVC that is within the *cbs* is treated as CIR-conformant traffic.
Mib	LanDrivers
Values	Decimal (0..1000000000)
Units	bits
Default	No default

ATTRIBUTE La Evc EvcPolicer effectiveExcessBurstSize (eebs)

Access	Read only
Description	This attribute indicates the excess burst size in bits. It is the amount of the Ethernet frame data that the EVC agrees to transport under normal conditions. Traffic received for this EVC that is above the *committedBurstSize* and within this *excessBurstSize* is accepted as non-conformant traffic. Traffic received for this EVC that is in excess of this *excessBurstSize* is discarded.
Mib	LanDrivers
Values	Decimal (0..1000000000)
Units	bits
Default	No default

GROUP La Evc EvcPolicer Operational (Oper)

Properties	Operational
Description	This group contains the stattistics attributes for the EthernetVirtualConnectionPolicer component.
Mib	LanDrivers

ATTRIBUTE La Evc EvcPolicer cirConformantFrames (circf)

Access	Read only
Description	This attribute counts the number of frames received and accepted as CIR-conformant for this EVC. These frames arrive within the *committedInformationRate* and *committedBurstSize*.

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This counter wraps to zero when it reaches the maximum value.

Mib LanDrivers

Values Long Integer

Default No default

ATTRIBUTE La Evc EvcPolicer eirConformantFrames (eircf)

Access Read only

Description This attribute counts the number of frames received and accepted as non-conformant for this EVC. These frames arrive in excess of the *committedInformationRate* and *committedBurstSize,* and within the *excessInformationRate* and *excessBurstSize*.

This counter wraps to zero when it reaches the maximum value.

Mib LanDrivers

Values Long Integer

Default No default

ATTRIBUTE La Evc EvcPolicer discardedNonConformantFrames (dncf)

Access Read only

Description This attribute counts the number of frames received and discarded as non-conformant for this EVC. These frames arrive in excess of the *excessInformationRate* and *excessBurstSize*.

This counter wraps to zero when it reaches the maximum value.

Mib LanDrivers

Values Long Integer

Default No default

COMPONENT La Evc EthernetSourceEvc (SrcEvc)

Groups GROUP La Evc SrcEvc Provisioned (Prov)

Scope Application

Description *La/x Evc EthernetSourceEvc*
La/x Vlan/y Evc EthernetSourceEvc

This component represents the connection setup information used by the calling end of this EVC to establish connectivity to either a far end Ethernet interface, or in the case that the *EthernetSourceVcc* is also configured to a far end ATM UNI.

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This component must exist if the *EvcSpvc* component is provisioned.

Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Evc SrcEvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetSourceEvc* component.
Mib	LanDrivers

ATTRIBUTE La Evc SrcEvc remoteAddress (rAddr)

Access	Read and write
Criticality	Component
Description	For an end-to-end EVC configuration, this attribute specifies the 40-digit NSAP address of the far end Ethernet interface to which this EVC is to be established. For a single-ended EVC configuration, this attribute specifies the 40-digit NSAP address of the far end ATM UNI to which this EVC is to be established.
Mib	LanDrivers
Values	String (40, AESANsapAddress)
Default	No default

ATTRIBUTE La Evc SrcEvc remoteVlanId (rVlanId)

Access	Read and write
Criticality	Component
Description	This attribute specifies the identifier of the VLAN on the far end Ethernet interface to which this EVC is to be established.
Mib	LanDrivers
Values	Decimal (0..4094)
Default	No default

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COMPONENT La Evc EthernetQualityOfService (EQoS)

Instance	Decimal (0..0)
Groups	GROUP La Evc EQoS Provisioned (Prov) GROUP La Evc EQoS QoSAtmProv (AtmProv)
Scope	Network
Description	*La/n Evc EthernetQualityOfService/m* *La/n vlan/x Evc EthernetQualityOfService/m* This component represents the Ethernet traffic management parameters for the traffic received from and transmitted to the ATM VCC.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Evc EQoS Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetQualityOfService* component.
Mib	LanDrivers

ATTRIBUTE La Evc EQoS committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR), in kbit per second, for this connection. It is the average rate up to which the network delivers service frames and meets the performance objectives defined by the Ethernet per-hop behavior of this connection. This value is used to derive the sustained cell rate (SCR) traffic management parameter for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	kbit/s
Default	10000

ATTRIBUTE La Evc EQoS excessInformationRate (eir)

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Access	Read and write
Description	This attribute specifies the maximum bandwidth, in kbit per second, for this connection. It is the average rate up to which the network may deliver service frames without any performance objectives. This value is used in conjunction with the *EQoS cir* attribute to derive the peak cell rate (PCR) traffic management parameter for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	kbit/s
Default	10000

ATTRIBUTE La Evc EQoS committedBurstSize (cbs)

Access	Read and write
Description	This attribute specifies the maximum number of bits available for use by sequential service frames sent at the Ethernet interface speed to remain CIR-conformant. This value must be divisible by a value of 8. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (80000..100000000)
Units	bits
Default	800000

ATTRIBUTE La Evc EQoS ethernetPerHopBehavior (ePhb)

Access	Read and write
Description	This attribute specifies the Ethernet per-hop behavior for this connection. It is used to derive the traffic management parameters for the ATM VC. Consistent with the Multiservice Switch Differentiated Services Domain type for IP services, the following mapping is defined for EVLS: The value of ***df*** specifies that the traffic class is standard, the connection class is equal to 0, and the ATM service category is ubr. The value of ***af11*** specifies that the traffic class is bronze, the connection class is equal to 0, and the ATM service category is ubr. The value of ***af21*** specifies that the traffic class is silver, the connection class is equal to 1, and the ATM service category is nrt-vbr.

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The value of ***af31*** specifies that the traffic class is gold, the connection class is equal to 2, and the ATM service category is rt-vbr.

The value of ***ef*** specifies that the traffic class is premium, the connection class is equal to 3, and the ATM service category is cbr.

Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.

Mib	LanDrivers
Values	Decimal (0..63) df af11 af21 af31 ef
Default	df

ATTRIBUTE La Evc EQoS averageFrameSize (afs)

Access	Read and write
Description	This attribute specifies the expected average frame size, in bytes, for this connection. This average frame size is used to determine the average overhead factor to be used in deriving the SCR and PCR traffic management parameters for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (64..9182)
Units	bytes
Default	512

GROUP La Evc EQoS QoSAtmProv (AtmProv)

Properties	Provisioned
Description	This group contains the provisioned attributes related to ATM traffic management parameters for the *EthernetQualityOfService* component.
Mib	LanDrivers

ATTRIBUTE La Evc EQoS packetWiseDiscard (pd)

Access	Read and write
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the received and transmitted directions for this

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connection. Packet-wise discard functions apply to AAL5 frame traffic.

Packet-wise functions increase the “goodput” of the link. The packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD).

EPD allows the connection to discard an entire frame once the transmitted or the received queue has reached the EPD threshold. EPD increases the "goodput" of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell.

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic and transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic and transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward and the backward direction. When this attribute is set to ***disabled***, forward frame discard and backward frame discard are not requested in the SPVC call setup.

The packet-wise discard functions that are active are visible in the *Spvc packetWiseDiscard* operational attribute.

Mib — LanDrivers

Values — disabled
enabled

Default — enabled

COMPONENT La Evc EvcSpvc (Spvc)

Instance — Decimal (0..0)

Groups — GROUP La Evc Spvc Operational (Oper)
GROUP La Evc Spvc EvcSpvcCon (SpvcCon)
GROUP La Evc Spvc VcAggregation (VcAgg)

Scope — Network

Description — *La/x Evc EvcSpvc/m*
La/x Vlan/y Evc EvcSpvc/m

This component represents one of the SPVC endpoints of the ATM

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transport connection.

This component can be dynamically created or provisioned.

When this component is dynamically created, it implicitly indicates that a connection has been established and this SPVC is the called endpoint of the VCC. The *EvcSpvc endPoint* operational attribute is used to indicate the called end. This dynamically created component does not exist when there is no connection.

When this component is provisioned, it implies that this is the calling endpoint of the VCC. It does not imply that a connection is established. A provisioned *EvcSpvc* component allows initiation of the setup request to the called end of the ATM transport connection.

Mib	LanDrivers
Opt. Subcomp.	COMPONENT La Evc Spvc EthernetSourceVcc (SrcVcc)
Dyn. Subcomp.	COMPONENT La Evc Spvc AtmConnection (AtmCon) COMPONENT La Evc Spvc EtsTrspCon (TrspCon)
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) **La Evc Spvc**

Impact	Service
Description	*Clear La/n Evc Spvc/m* *Clear La/n Vlan/x Evc Spvc/m*

This command can be issued on the calling or called SPVC endpoint. At the calling end, this command tears down the active SPVC connection and tries to re-establish the connection immediately. At the called end, this command tears down the active SPVC connection and waits for a new incoming call request.

If there is no active SPVC, the *clear* command has no effect.

GROUP **La Evc Spvc** **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes for the *EvcSpvc* component.

Only the *retryFailures* attribute is displayed when the *Evc aggregation* attribute has a value of ***enabled***. When the *Evc aggregation* attribute has

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a value of ***disabled***, this group is displayed in calling end, and only *spvcStatus* and *endPoint* attributes are displayed in called end.

Mib — LanDrivers

ATTRIBUTE La Evc Spvc spvcStatus (status)

Access — Read only

Description — This attribute indicates the status of the incoming and outgoing connection.

serviceNotReady indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests are processed.

serviceReady indicates that a connection has not yet been established and that setup requests are sent in calling end of the SPVC or that the setup request is expected in the called end of the SPVC.

waitingForConnect indicates that a connection has not been established and the component is waiting to restart.

connected indicates that a connection has been established.

setupFailed indicates that the ATM Networking resources are not available to setup the connection at the calling end of the SPVC

connectFailed indicates that the ATM Networking resources are not avaialble to setup the connection at the called end of the SPVC.

releaseFailed indicates that the connection release attempts have failed.

Mib — LanDrivers

Values —
serviceNotReady
serviceReady
waitingForConnect
connected
setupFailed
connectFailed
releaseFailed

Default — No default

ATTRIBUTE La Evc Spvc endPoint (endPt)

Access — Read only

Description — This attribute indicates whether this SPVC is the called or calling endpoint of the VCC. If the value is ***called***, this is the endpoint that receives the setup request from the remote end of the ATM transport connection. If the value is ***calling,*** this is the endpoint that initiates the setup request to the remote end of the ATM transport connection.

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Mib	LanDrivers
Values	called calling
Default	No default

ATTRIBUTE La Evc Spvc retryFailures (failures)

Access	Read only
Description	This attribute indicates the consecutive failed connection attempts prior to the current attempt. It is reset to ***0*** whenever a connection is successfully established. The value wraps to ***0*** when it exceeds the maximum value. If this attribute increments, please refer to the *EvcSpvc lastSetupFailureCause* and *EvcSpvc lastSetupFailureDiagnostic* attributes for diagnostics.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE La Evc Spvc lastFailureCause (cause)

Access	Read only
Description	This attribute indicates the cause of the last ATM transport connection failure. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	Decimal (0..255)
Default	No default

ATTRIBUTE La Evc Spvc lastFailureDiagnostic (diag)

Access	Read only
Description	This attribute indicates a diagnostic to supplement the *EvcSpvc lastFailureCause* attribute. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	String (0..8, ASCII)
Default	No default

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GROUP La Evc Spvc EvcSpvcCon (SpvcCon)

Properties	Operational
Description	This group contains operational data associated with ATM SPVC for the *EvcSpvc* component. This group is not displayed when the *Evc aggregation* attribute has a value of ***enabled.***
Mib	LanDrivers

ATTRIBUTE La Evc Spvc serviceCategory (sc)

Access	Read only
Description	This attribute indicates the ATM service category of the SPVC connection. For the called end of the SPVC, if the value of the *spvcStatus* attribute is ***connected***, this attribute can have a value of ***ubr***, ***rtvbr***, ***nrtvbr,*** or ***cbr***. For the calling end of the SPVC, this attribute reflects the mapping value of the *EQoS ethernetPerHopBehavior* attribute.
Mib	LanDrivers
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr) notAvailable (notAvail)
Default	No default

ATTRIBUTE La Evc Spvc peakCellRate01 (pcr01)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *pcr01* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Evc Spvc sustainedCellRate0 (scr0)

Access	Read only

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Description	This attribute indicates the Sustained Cell Rate (SCR) of the ATM VCC to which this interworking function is linked for cells (with CLP=0). The *scr0* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Evc Spvc maximumBurstSize0 (mbs0)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the ATM VCC to which this interworking function is linked for cells (with CLP=0). The *mbs0* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE La Evc Spvc minimumDesiredCellRate (mdcr)

Access	Read only
Description	This attribute indicates the minimum desired cell rate (MDCR) which is allocated for each UBR connection. UBR connections normally are serviced on a best effort basis, but this attribute indicates allocation of a default minimum bandwidth for each connection. The *mdcr* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Evc Spvc trafficDescType (tdt)

Access	Read only

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Description	This attribute indicates the type of traffic management which is applied to the received and transmitted directions of this connection as defined in the ATM Forum.
Mib	LanDrivers
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE La Evc Spvc qosClass (qos)

Access	Read only
Description	This attribute indicates the quality of service for this connection. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	LanDrivers
Values	0 1 2 3 4
Default	No default

ATTRIBUTE La Evc Spvc bearerClassBbc (bcBbc)

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Access	Read only
Description	This attribute indicates the bearer capability for this connection. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, trafficType (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.
Mib	LanDrivers
Values	a c x
Default	No default

ATTRIBUTE La Evc Spvc bestEffort

Access	Read only
Description	This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.
Mib	LanDrivers
Values	notIndicated indicated
Default	No default

ATTRIBUTE La Evc Spvc packetWiseDiscard (pd)

Access	Read only

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Description	This attribute indicates the current set of packet-wise discard functions in effect in the received and transmitted data directions at this connection point. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning the SPVC, and by call setup parameters in the AAL and Traffic Descriptor Information Elements. A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.
Mib	LanDrivers
Set of	ppd epd
Default	No default

ATTRIBUTE La Evc Spvc qosParameters (qp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward and forward directions for this connection. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	LanDrivers
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

GROUP La Evc Spvc VcAggregation (VcAgg)

Properties	Operational
Description	This group contains the operational attributes for the *EvcSpvc* component when this EVC is connected using a shared VC established by the ETS component.

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This group is displayed when the *Evc aggregation* attribute has a value of ***enabled***.

Mib LanDrivers

ATTRIBUTE La Evc Spvc aggregationStatus (aggStatus)

Access Read only

Description This attribute indicates the aggregation status of this EVC.

The possible values are:

notApplicable indicates the initial state of this EVC.

aggregationReleased indicates that this EVC has been released. Refer to *aggregationLastFailureCause* attribute for the diagnostic.

aggregationRejected indicates that this EVC's attempt to use aggregation has been rejected by ETS. Refer to *aggregationLastFailureCause* attribute for the diagnostic.

aggregationConnected indicates that this EVC has been successfully aggregated over a shared transport VC.

Mib LanDrivers

Values notApplicable
aggregationReleased
aggregationRejected
aggregationConnected

Default No default

ATTRIBUTE La Evc Spvc aggregationLastFailureCause (aggFailCause)

Access Read only

Description This attribute indicates the cause of the last connection aggregation failure.

notApplicable indicates that this EVC is successfully established over a shared transport VC.

spvcNotAvail indicates that the shared transport VC matching this *lanApplication* instance and this EVC's *remoteAddress* and that satisfies its *ethernetPerHopBehavior*, was disabled at the time of the last EVC setup attempt.

noNsapPrefixMatch indicates that all shared transport VC's matching this *lanApplication* instance do not match this EVC's *remoteAddress*, at the time of the last EVC setup attempt.

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etsNotReady indicates the Ethernet Transport System is not yet available to process connection requests.

Mib	LanDrivers
Values	notApplicable spvcNotAvail noNsapPrefixMatch etsNotReady
Default	No default

COMPONENT La Evc Spvc EthernetSourceVcc (SrcVcc)

Groups	GROUP La Evc Spvc SrcVcc Provisioned (Prov)
Scope	Device
Description	*La/x Evc Spvc/m EthernetSourceVcc* *La/x Vlan/y Evc Spvc/m EthernetSourceVcc* This component specifies the far end ATM UNI information for a single-ended EVC configuration. If the *Evc aggregation* attribute has a value of ***enabled***, this component cannot be provisioned under the *Spvc* component. This component takes precedence over the *EthernetSourceEvc* component if both exist, forcing a single-ended EVC configuration.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Evc Spvc SrcVcc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetSourceVcc* component.
Mib	LanDrivers

ATTRIBUTE La Evc Spvc SrcVcc calledVpiVci (cdVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the far end ATM UNI VCC that is the called end of this EVC.

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Mib	LanDrivers
Values	Integer Sequence (0..255; 32..65536)
Default	No default

COMPONENT La Evc Spvc AtmConnection (AtmCon)

Groups	GROUP La Evc Spvc AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Evc Spvc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	LanDrivers

ATTRIBUTE La Evc Spvc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	LanDrivers
Values	The name of the component
Default	No default

COMPONENT La Evc Spvc EtsTrspCon (TrspCon)

Groups	GROUP La Evc Spvc TrspCon Operational (Oper)
Scope	Device
Description	*La/x Evc Spvc/m EtsTrspCon* *La/x Vlan/y Evc Spvc/m EtsTrspCon* This component represents each connection established by the *EthernetTransportSystem* component. It indicates the next hop *Ets*

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EvlsAtmTransport Spvc, where the traffic flow for this EVC is transmitted to and from where it is received.

Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Evc Spvc TrspCon Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *EtsTrspCon* component.
Mib	LanDrivers

ATTRIBUTE La Evc Spvc TrspCon transportEndPoint (trspEP)

Access	Read only
Description	This attribute indicates the component name of the *Ets EAtmTrsp/m* component to which this EVC is established.
Mib	LanDrivers
Values	The name of the component
Default	No default

COMPONENT La Vlan

Instance	Decimal (2..4094)
Groups	GROUP La Vlan VlanProvisioned (VlanProv) GROUP La Vlan IfEntryProv (IfEntry) GROUP La Vlan OsiState (State) GROUP La Vlan OperationalStatus (OperStatus)
Scope	Application
Description	*La/n Vlan/m* This component represents an Ethernet Virtual Local Area Network (VLAN). It is responsible for the Ethernet U-plane (user-plane) protocol for the specified *LanApplication* instance. The instance values of 0 and 1 are reserved VLAN IDs. The value of 0 is reserved for priority tagged traffic, and 1 is for port-VLAN tagged traffic. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which an Ethernet frame is associated. All frames carried within a particular physical channel and carrying the same VLAN identifier value are associated with the same logical connection. Each *Vlan* component instance can be either linked to a *VirtualRouter* or a *VpnRouteForwarder* component, or configured to establish an

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	EthernetVirtualConnection component. Semantic checks enforce that either the *EthernetVirtualConnection* subcomponent is provisioned under the *Vlan* component, or the *linkToProtocolPort* or *enetConnection* attribute is set.
Mib	LanDrivers
Subcomponents	COMPONENT La Vlan EthernetStatistics (Stats)
Opt. Subcomp.	COMPONENT La Vlan EthernetVirtualConnection (Evc)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP La Vlan VlanProvisioned (VlanProv)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Vlan* component.
Mib	LanDrivers

ATTRIBUTE La Vlan linkToProtocolPort

Access	Read and write
Description	This attribute specifies the *ProtocolPort* component to which the application is associated. This attribute must not be set if the *Vlan enetConnection* attribute is set or there is the *EthernetVirtualConnection* subcomponent under this *Vlan* component.
Mib	LanDrivers
Values	Link (Service, linkToMedia)
Default	No default

ATTRIBUTE La Vlan enetConnection

Access	Read and write
Description	This attribute specifies the *Enet* component to which the application is associated. This attribute must not be set if the *Vlan linkToProtocolPort* attribute is set or there is the *EthernetVirtualConnection* subcomponent under this *Vlan* component.
Mib	LanDrivers
Values	Link (Service, linkToEnetIf)
Default	No default

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GROUP La Vlan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE La Vlan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE La Vlan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP La Vlan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE La Vlan adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE La Vlan operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE La Vlan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — LanDrivers

Values — idle
active (activ)
busy

Default — idle

GROUP La Vlan OperationalStatus (OperStatus)

Properties — Operational

Description — This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib — LanDrivers

ATTRIBUTE La Vlan snmpOperStatus

Access — Read only

Description — The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib — LanDrivers

Values — up
down
testing

Default — up

COMPONENT La Vlan EthernetVirtualConnection (Evc)

Groups — GROUP La Vlan Evc Provisioned (Prov)
GROUP La Vlan Evc OsiState (State)
GROUP La Vlan Evc OperationalStatus (OperStatus)
GROUP La Vlan Evc Operational (Oper)
GROUP La Vlan Evc Statistics (Stats)

Scope — Application

Description — *La/x EthernetVirtualConnection*
La/x Vlan/y EthernetVirtualConnection

When this component is added to a *LanApplication* component, it represents a VC that is established between this Ethernet interface and either another Ethernet interface or an ATM UNI VCC.

When this component is added to a *Vlan* component, it represents a VC

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that is established between this Ethernet VLAN and either another Ethernet VLAN or an ATM UNI VCC.

The EVC is established over an ATM PNNI network using an ATM SPVC VCC. It can be configured to use a dedicated ATM transport VC, or to aggregate with other EVCs over a shared ATM transport VC established by the *EthernetTransportSystem* component. This latter option is only available when this component exists under the *LanApplication* component in VLAN-mode, or under a *Vlan* component.

This EVC is used to transparently transport Ethernet v2.0 and IEEE 802.3 frames. These frames are stripped of the Ethernet FCS and encapsulated using RFC2684 bridged mode encapsulation before being transported.

When this component is under the *LanApplication* component in port-mode, and the *EthernetPolicy* component does not exist, the default behavior of EVLS is to accept all frames received from the Ethernet interface. If the *EthernetPolicy* component exists, and the and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, only untagged and priority-tagged frames are accepted, all other frames are discarded and counted by the *EthernetStatistics unknownVlanId* statistic. With this same configuration, and the *unknownVlanIdTreatment* attribute set to ***accept***, all frames are accepted.

When this component is under the *LanApplication* component in VLAN-mode, and the port-VLAN is configured with an EVC, and the *EthernetPolicy* component does not exist, the default behavior of EVLS is to discard all unknown VLAN-tagged frames received from the Ethernet interface. If the *EthernetPolicy* component exists, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, only untagged, priority-tagged and port-VLAN ID (VID=1) frames are accepted, all other frames are either accepted by a configured *Vlan* component instance, or discarded and counted by the *EthernetStatistics unknownVlanId* statistic. With this same configuration, and the *unknownVlanIdTreatment* attribute set to ***accept***, all untagged, priority-tagged, port-VLAN ID frames and unknown VLAN-tagged frames received from the Ethernet interface are classified as port-VLAN traffic.

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When this component is under the *Vlan* component, only frames with their VID set to this *Vlan* component instance are accepted by this EVC.

Mib LanDrivers

Opt. Subcomp. COMPONENT La Vlan Evc EthernetVirtualConnectionPolicer (EvcPolicer)
COMPONENT La Vlan Evc EthernetSourceEvc (SrcEvc)
COMPONENT La Vlan Evc EthernetQualityOfService (EQoS)

Opt. Subcomp. COMPONENT La Vlan Evc EvcSpvc (Spvc)

Common Verbs
Help
List
Display
Add
DELete

GROUP La Vlan Evc Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes for the *EthernetVirtualConnection* component.

Mib LanDrivers

ATTRIBUTE La Vlan Evc aggregation (aggr)

Access Read and write

Description This attribute specifies whether to use a dedicated ATM VC to establish the connection, or to aggregate with other EVCs over a shared ATM VC established by the *EthernetTransportSystem* component.

The possible values are:

disabled: this value indicates that this EVC should use a dedicated transport VC established by this component.

enabled: this value indicates that this EVC should be aggregated over a shared transport VC established by the *EthernetTransportSystem* component.

Mib LanDrivers

Values disabled
enabled

Default disabled

ATTRIBUTE La Vlan Evc preserveVlanTag (presVlanTag)

Access Read and write

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Description	This attribute specifies whether the VLAN tag is preserved or removed for frames received from the Ethernet interface by this Evc, when the *remoteVlanId* is set to ***0***. This attribute is ignored if the *removeVlanId* attribute for this Evc is set to any other value. When this attribute is set to ***disabled***, the VLAN tag is removed from priority and VLAN-tagged frames received from the Ethernet interface, for this EVC, before being transported across the network as untagged. When this attribute is set to ***enabled***, the VLAN tag is preserved for priority and VLAN-tagged frames received from the Ethernet interface, for this EVC, and transparently transported across the network. If present, the original VID of the frame is preserved. The default is ***enabled***.
Mib	LanDrivers
Values	disabled enabled
Default	enabled

GROUP La Vlan Evc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE La Vlan Evc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE La Vlan Evc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

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GROUP La Vlan Evc OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP La Vlan Evc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc remoteAddress (rAddr)

Access	Read only
Description	This attribute indicates the 40-digit NSAP address of the far end Ethernet interface to which this EVC is established.
Mib	LanDrivers
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE La Vlan Evc remoteVlanId (rVlanId)

Access	Read only
Description	This attribute indicates the identifier of the VLAN on the far end Ethernet interface to which this EVC is established.
Mib	LanDrivers
Values	Decimal (0..4094)

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Default	No default

GROUP La Vlan Evc Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc vcDownDiscards (vcDownDisc)

Access	Read only
Description	This attribute counts the frames received from the Ethernet interface for this EVC that have been discarded because the ATM transport VC was inactive. The value wraps to zero when it exceeds the maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La Vlan Evc EthernetVirtualConnectionPolicer (EvcPolicer)

Groups	GROUP La Vlan Evc EvcPolicer Provisioned (Prov) GROUP La Vlan Evc EvcPolicer Operational (Oper) GROUP La Vlan Evc EvcPolicer Operational (Oper)
Scope	Application
Description	*La/x Evc EthernetVirtualConnectionPolicer* *La/x Vlan/y Evc EthernetVirtualConnectionPolicer* This component provides the Ethernet policing parameters for traffic received by the LAN or by the port-VLAN EVC at the ingress access point.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Vlan Evc EvcPolicer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *EthernetVirtualConnectionPolicer* component.

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Mib	LanDrivers

ATTRIBUTE La Vlan Evc EvcPolicer policing (policing)

Access	Read and write
Description	This attribute is used to enable or disable policing for the *EVC*.
Mib	LanDrivers
Values	disabled enabled
Default	disabled

ATTRIBUTE La Vlan Evc EvcPolicer committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate in kilobits per second(k bits/s). It is the rate at which the EVC agrees to transport Ethernet frames under normal conditions, and meets the performance objectives. An exception to this occurs when this attribute is provisioned to be ***0***, the *committedBurstSize* attribute is ignored, in which case all traffic for this EVC is treated as excess traffic. This attribute can be set to ***sameAsEvc***, in order to use the same value as the *EQoS commitedInformationRate* attribute for the policer. It can be also be used to override the provisioned *EQoS committedInformationRate* attribute for the policer. On the 4pGe FP, this value can be configured in increments of 1,000 kbits/s. An increment of less than 1,000 kbits/s is rounded up to the nearest 1,000 kbits/s. On the 4p/8pEth100BaseT FP, this value can be configured in increments of 1 kbit/s.
Mib	LanDrivers
Values	Decimal (0..1000000) sameAsEvc
Units	kbit/s
Default	sameAsEvc

ATTRIBUTE La Vlan Evc EvcPolicer excessInformationRate (eir)

Access	Read and write
Description	This attribute specifies the excess information rate in kilobits per second (kbits/s). It is the rate at which EVC may transport Ethernet frames in excess of the *committedInformationRate*, without any performance objectives. An exception to this occurs when this attribute is provisioned to be ***0***, in which case the *excessBurstSize* attribute is ignored, and all traffic

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for this EVC in excess of the *committedInformationRate* is discarded.

This attribute can be set to ***sameAsEvc***, in order to use the same value as the *EQoS excessInformationRate* attribute for the policer. It can also be used to override the provisioned *EQoS excessInformationRate* attribute for the policer.

On the 4pGe FP, this value can be configured in increments of 1,000 kbits/s. An increment of less than 1,000 kbits/s is rounded up to the nearest 1,000 kbits/s.

On the 4p/8pEth100BaseT FP, this value can be configured in increments of 1 kbit/s.

Mib	LanDrivers
Values	Decimal (0..1000000) sameAsEvc
Units	kbit/s
Default	sameAsEvc

ATTRIBUTE La Vlan Evc EvcPolicer committedBurstSize (cbs)

Access	Read and write
Description	This attribute specifies the committed burst size in bits. It is the maximum amount of data this EVC makes available for a burst of ingress Ethernet frames sent at the ethernet access rate to remain CIR-conformant. An exception to this occurs when this attribute is provisioned to be ***0***, the *committedInformationRate* attribute is ignored, in which case all traffic for this EVC is treated as excess traffic. The attribute can be set as ***sameAsEvc***, in order to use the same value as the *EQoS committedBurstSize* attribute for the policer. It can also be used to override the provisioned *EQoS committedBurstSize* attribute for the policer.
Mib	LanDrivers
Values	Decimal (0..100000000) sameAsEvc
Units	bits
Default	sameAsEvc

ATTRIBUTE La Vlan Evc EvcPolicer excessBurstSize (ebs)

Access	Read and write
Description	This attribute specifies the excess burst size in bits. It is the maximum amount of data this *EVC* makes available for a burst of ingress Ethernet frames sent at the Ethernet access rate in excess of the *committedBurstSize*. An exception to this occurs when this attribute is

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provisioned to be ***0***, the *excessInformationRate* attribute is ignored, in which case all traffic in excess of the *committedBurstSize* for this EVC is discarded.

Mib	LanDrivers
Values	Decimal (0..100000000)
Units	bits
Default	800000

GROUP La Vlan Evc EvcPolicer Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *EthernetVirtualConnectionPolicer* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc EvcPolicer effectiveCommittedInformationRate (ecir)

Access	Read only
Description	This attribute indicates the committed information rate in kilobits per second (kbits/s). It is the rate at which the *EVC* agrees to transport Ethernet frames under normal conditions. An exception to this occurs when this attribute is provisioned to be ***0***, the *committedBurstSize* attribute is ignored, in which case all traffic for this EVC is treated as excess traffic.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	kbit/s
Default	No default

ATTRIBUTE La Vlan Evc EvcPolicer effectiveExcessInformationRate (eeir)

Access	Read only
Description	This attribute indicates the excess information rate in kilobits per second (kbits/s). It is the rate at which the EVC makes an effort to transport the Ethernet frames in excess of the *committedInformationRate* . Traffic received for this EVC that is above the *committedInformationRate* and within this *excessInformationRate* is accepted as non-conformant traffic. Traffic received for this EVC that is in excess of this *excessInformationRate* is discarded.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	kbit/s

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Default	No default

ATTRIBUTE La Vlan Evc EvcPolicer effectiveCommittedBurstSize (ecbs)

Access	Read only
Description	This attribute indicates the committed burst size in bits. It is the amount of Ethernet frame data that the EVC agrees to transport under normal conditions. Traffic received for this EVC that is within the *cbs* is treated as CIR-conformant traffic.
Mib	LanDrivers
Values	Decimal (0..1000000000)
Units	bits
Default	No default

ATTRIBUTE La Vlan Evc EvcPolicer effectiveExcessBurstSize (eebs)

Access	Read only
Description	This attribute indicates the excess burst size in bits. It is the amount of the Ethernet frame data that the EVC agrees to transport under normal conditions. Traffic received for this EVC that is above the *committedBurstSize* and within this *excessBurstSize* is accepted as non-conformant traffic. Traffic received for this EVC that is in excess of this *excessBurstSize* is discarded.
Mib	LanDrivers
Values	Decimal (0..1000000000)
Units	bits
Default	No default

GROUP La Vlan Evc EvcPolicer Operational (Oper)

Properties	Operational
Description	This group contains the stattistics attributes for the EthernetVirtualConnectionPolicer component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc EvcPolicer cirConformantFrames (circf)

Access	Read only
Description	This attribute counts the number of frames received and accepted as CIR-conformant for this EVC. These frames arrive within the *committedInformationRate* and *committedBurstSize*. This counter wraps to zero when it reaches the maximum value.
Mib	LanDrivers

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Values	Long Integer
Default	No default

ATTRIBUTE La Vlan Evc EvcPolicer eirConformantFrames (eircf)

Access	Read only
Description	This attribute counts the number of frames received and accepted as non-conformant for this EVC. These frames arrive in excess of the *committedInformationRate* and *committedBurstSize,* and within the *excessInformationRate* and *excessBurstSize*. This counter wraps to zero when it reaches the maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Vlan Evc EvcPolicer discardedNonConformantFrames (dncf)

Access	Read only
Description	This attribute counts the number of frames received and discarded as non-conformant for this EVC. These frames arrive in excess of the *excessInformationRate* and *excessBurstSize*. This counter wraps to zero when it reaches the maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La Vlan Evc EthernetSourceEvc (SrcEvc)

Groups	GROUP La Vlan Evc SrcEvc Provisioned (Prov)
Scope	Application
Description	*La/x Evc EthernetSourceEvc* *La/x Vlan/y Evc EthernetSourceEvc* This component represents the connection setup information used by the calling end of this EVC to establish connectivity to either a far end Ethernet interface, or in the case that the *EthernetSourceVcc* is also configured to a far end ATM UNI.

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This component must exist if the *EvcSpvc* component is provisioned.

Mib LanDrivers

Common Verbs
Help
List
Display
Add
DELete

GROUP La Vlan Evc SrcEvc Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes for the *EthernetSourceEvc* component.

Mib LanDrivers

ATTRIBUTE La Vlan Evc SrcEvc remoteAddress (rAddr)

Access Read and write

Criticality Component

Description For an end-to-end EVC configuration, this attribute specifies the 40-digit NSAP address of the far end Ethernet interface to which this EVC is to be established.

For a single-ended EVC configuration, this attribute specifies the 40-digit NSAP address of the far end ATM UNI to which this EVC is to be established.

Mib LanDrivers

Values String (40, AESANsapAddress)

Default No default

ATTRIBUTE La Vlan Evc SrcEvc remoteVlanId (rVlanId)

Access Read and write

Criticality Component

Description This attribute specifies the identifier of the VLAN on the far end Ethernet interface to which this EVC is to be established.

Mib LanDrivers

Values Decimal (0..4094)

Default No default

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COMPONENT La Vlan Evc EthernetQualityOfService (EQoS)

Instance	Decimal (0..0)
Groups	GROUP La Vlan Evc EQoS Provisioned (Prov) GROUP La Vlan Evc EQoS QoSAtmProv (AtmProv)
Scope	Network
Description	*La/n Evc EthernetQualityOfService/m* *La/n vlan/x Evc EthernetQualityOfService/m* This component represents the Ethernet traffic management parameters for the traffic received from and transmitted to the ATM VCC.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Vlan Evc EQoS Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetQualityOfService* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc EQoS committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR), in kbit per second, for this connection. It is the average rate up to which the network delivers service frames and meets the performance objectives defined by the Ethernet per-hop behavior of this connection. This value is used to derive the sustained cell rate (SCR) traffic management parameter for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	kbit/s
Default	10000

ATTRIBUTE La Vlan Evc EQoS excessInformationRate (eir)

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Access	Read and write
Description	This attribute specifies the maximum bandwidth, in kbit per second, for this connection. It is the average rate up to which the network may deliver service frames without any performance objectives. This value is used in conjunction with the *EQoS cir* attribute to derive the peak cell rate (PCR) traffic management parameter for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	kbit/s
Default	10000

ATTRIBUTE La Vlan Evc EQoS committedBurstSize (cbs)

Access	Read and write
Description	This attribute specifies the maximum number of bits available for use by sequential service frames sent at the Ethernet interface speed to remain CIR-conformant. This value must be divisible by a value of 8. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (80000..100000000)
Units	bits
Default	800000

ATTRIBUTE La Vlan Evc EQoS ethernetPerHopBehavior (ePhb)

Access	Read and write
Description	This attribute specifies the Ethernet per-hop behavior for this connection. It is used to derive the traffic management parameters for the ATM VC. Consistent with the Multiservice Switch Differentiated Services Domain type for IP services, the following mapping is defined for EVLS: The value of ***df*** specifies that the traffic class is standard, the connection class is equal to 0, and the ATM service category is ubr. The value of ***af11*** specifies that the traffic class is bronze, the connection class is equal to 0, and the ATM service category is ubr. The value of ***af21*** specifies that the traffic class is silver, the connection class is equal to 1, and the ATM service category is nrt-vbr.

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The value of ***af31*** specifies that the traffic class is gold, the connection class is equal to 2, and the ATM service category is rt-vbr.

The value of ***ef*** specifies that the traffic class is premium, the connection class is equal to 3, and the ATM service category is cbr.

Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.

Mib	LanDrivers
Values	Decimal (0..63) df af11 af21 af31 ef
Default	df

ATTRIBUTE La Vlan Evc EQoS averageFrameSize (afs)

Access	Read and write
Description	This attribute specifies the expected average frame size, in bytes, for this connection. This average frame size is used to determine the average overhead factor to be used in deriving the SCR and PCR traffic management parameters for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (64..9182)
Units	bytes
Default	512

GROUP La Vlan Evc EQoS QoSAtmProv (AtmProv)

Properties	Provisioned
Description	This group contains the provisioned attributes related to ATM traffic management parameters for the *EthernetQualityOfService* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc EQoS packetWiseDiscard (pd)

Access	Read and write
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the received and transmitted directions for this connection. Packet-wise discard functions apply to AAL5 frame traffic.

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Packet-wise functions increase the “goodput” of the link. The packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD).

EPD allows the connection to discard an entire frame once the transmitted or the received queue has reached the EPD threshold. EPD increases the "goodput" of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell.

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic and transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic and transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward and the backward direction. When this attribute is set to ***disabled***, forward frame discard and backward frame discard are not requested in the SPVC call setup.

The packet-wise discard functions that are active are visible in the *Spvc packetWiseDiscard* operational attribute.

Mib	LanDrivers
Values	disabled enabled
Default	enabled

COMPONENT La Vlan Evc **EvcSpvc (Spvc)**

Instance	Decimal (0..0)
Groups	GROUP La Vlan Evc Spvc Operational (Oper) GROUP La Vlan Evc Spvc EvcSpvcCon (SpvcCon) GROUP La Vlan Evc Spvc VcAggregation (VcAgg)
Scope	Network
Description	*La/x Evc EvcSpvc/m* *La/x Vlan/y Evc EvcSpvc/m*

This component represents one of the SPVC endpoints of the ATM transport connection.

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This component can be dynamically created or provisioned.

When this component is dynamically created, it implicitly indicates that a connection has been established and this SPVC is the called endpoint of the VCC. The *EvcSpvc endPoint* operational attribute is used to indicate the called end. This dynamically created component does not exist when there is no connection.

When this component is provisioned, it implies that this is the calling endpoint of the VCC. It does not imply that a connection is established. A provisioned *EvcSpvc* component allows initiation of the setup request to the called end of the ATM transport connection.

Mib: LanDrivers

Opt. Subcomp.: COMPONENT La Vlan Evc Spvc EthernetSourceVcc (SrcVcc)

Dyn. Subcomp.: COMPONENT La Vlan Evc Spvc AtmConnection (AtmCon)
COMPONENT La Vlan Evc Spvc EtsTrspCon (TrspCon)

Common Verbs:
Help
List
Display
Add
DELete

VERB Clear (Clr) **La Vlan Evc Spvc**

Impact: Service

Description:
Clear La/n Evc Spvc/m
Clear La/n Vlan/x Evc Spvc/m

This command can be issued on the calling or called SPVC endpoint. At the calling end, this command tears down the active SPVC connection and tries to re-establish the connection immediately. At the called end, this command tears down the active SPVC connection and waits for a new incoming call request.

If there is no active SPVC, the *clear* command has no effect.

GROUP **La Vlan Evc Spvc** **Operational (Oper)**

Properties: Operational

Description: This attribute group contains the operational attributes for the *EvcSpvc* component.

Only the *retryFailures* attribute is displayed when the *Evc aggregation* attribute has a value of ***enabled***. When the *Evc aggregation* attribute has a value of ***disabled***, this group is displayed in calling end, and only *spvcStatus* and *endPoint* attributes are displayed in called end.

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Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc spvcStatus (status)

Access	Read only
Description	This attribute indicates the status of the incoming and outgoing connection. ***serviceNotReady*** indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests are processed. ***serviceReady*** indicates that a connection has not yet been established and that setup requests are sent in calling end of the SPVC or that the setup request is expected in the called end of the SPVC. ***waitingForConnect*** indicates that a connection has not been established and the component is waiting to restart. ***connected*** indicates that a connection has been established. ***setupFailed*** indicates that the ATM Networking resources are not available to setup the connection at the calling end of the SPVC ***connectFailed*** indicates that the ATM Networking resources are not avaialble to setup the connection at the called end of the SPVC. ***releaseFailed*** indicates that the connection release attempts have failed.
Mib	LanDrivers
Values	serviceNotReady serviceReady waitingForConnect connected setupFailed connectFailed releaseFailed
Default	No default

ATTRIBUTE La Vlan Evc Spvc endPoint (endPt)

Access	Read only
Description	This attribute indicates whether this SPVC is the called or calling endpoint of the VCC. If the value is ***called***, this is the endpoint that receives the setup request from the remote end of the ATM transport connection. If the value is ***calling,*** this is the endpoint that initiates the setup request to the remote end of the ATM transport connection.
Mib	LanDrivers

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Values	called calling
Default	No default

ATTRIBUTE La Vlan Evc Spvc retryFailures (failures)

Access	Read only
Description	This attribute indicates the consecutive failed connection attempts prior to the current attempt. It is reset to ***0*** whenever a connection is successfully established. The value wraps to ***0*** when it exceeds the maximum value. If this attribute increments, please refer to the *EvcSpvc lastSetupFailureCause* and *EvcSpvc lastSetupFailureDiagnostic* attributes for diagnostics.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE La Vlan Evc Spvc lastFailureCause (cause)

Access	Read only
Description	This attribute indicates the cause of the last ATM transport connection failure. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	Decimal (0..255)
Default	No default

ATTRIBUTE La Vlan Evc Spvc lastFailureDiagnostic (diag)

Access	Read only
Description	This attribute indicates a diagnostic to supplement the *EvcSpvc lastFailureCause* attribute. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	String (0..8, ASCII)
Default	No default

GROUP La Vlan Evc Spvc EvcSpvcCon (SpvcCon)

Properties	Operational

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Description	This group contains operational data associated with ATM SPVC for the *EvcSpvc* component. This group is not displayed when the *Evc aggregation* attribute has a value of ***enabled.***
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc serviceCategory (sc)

Access	Read only
Description	This attribute indicates the ATM service category of the SPVC connection. For the called end of the SPVC, if the value of the *spvcStatus* attribute is ***connected***, this attribute can have a value of ***ubr***, ***rtvbr***, ***nrtvbr,*** or ***cbr***. For the calling end of the SPVC, this attribute reflects the mapping value of the *EQoS ethernetPerHopBehavior* attribute.
Mib	LanDrivers
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr) notAvailable (notAvail)
Default	No default

ATTRIBUTE La Vlan Evc Spvc peakCellRate01 (pcr01)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *pcr01* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Vlan Evc Spvc sustainedCellRate0 (scr0)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the ATM VCC to which this interworking function is linked for cells (with CLP=0). The *scr0* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.

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Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Vlan Evc Spvc maximumBurstSize0 (mbs0)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the ATM VCC to which this interworking function is linked for cells (with CLP=0). The *mbs0* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE La Vlan Evc Spvc minimumDesiredCellRate (mdcr)

Access	Read only
Description	This attribute indicates the minimum desired cell rate (MDCR) which is allocated for each UBR connection. UBR connections normally are serviced on a best effort basis, but this attribute indicates allocation of a default minimum bandwidth for each connection. The *mdcr* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Vlan Evc Spvc trafficDescType (tdt)

Access	Read only
Description	This attribute indicates the type of traffic management which is applied to the received and transmitted directions of this connection as defined in the ATM Forum.
Mib	LanDrivers
Values	1 2 3

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4
5
6
7
8
9

Default — No default

ATTRIBUTE La Vlan Evc Spvc qosClass (qos)

Access — Read only

Description — This attribute indicates the quality of service for this connection.

Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video).

Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video).

Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib — LanDrivers

Values
0
1
2
3
4

Default — No default

ATTRIBUTE La Vlan Evc Spvc bearerClassBbc (bcBbc)

Access — Read only

Description — This attribute indicates the bearer capability for this connection.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide

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interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, trafficType (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Mib — LanDrivers

Values
a
c
x

Default — No default

ATTRIBUTE La Vlan Evc Spvc **bestEffort**

Access — Read only

Description — This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

Mib — LanDrivers

Values
notIndicated
indicated

Default — No default

ATTRIBUTE La Vlan Evc Spvc **packetWiseDiscard (pd)**

Access — Read only

Description — This attribute indicates the current set of packet-wise discard functions in effect in the received and transmitted data directions at this connection point.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning the SPVC, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

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A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

Mib	LanDrivers
Set of	ppd epd
Default	No default

ATTRIBUTE La Vlan Evc Spvc qosParameters (qp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward and forward directions for this connection. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	LanDrivers
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

GROUP La Vlan Evc Spvc VcAggregation (VcAgg)

Properties	Operational
Description	This group contains the operational attributes for the *EvcSpvc* component when this EVC is connected using a shared VC established by the ETS component. This group is displayed when the *Evc aggregation* attribute has a value of ***enabled***.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc aggregationStatus (aggStatus)

Access	Read only

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Description	This attribute indicates the aggregation status of this EVC. The possible values are: ***notApplicable*** indicates the initial state of this EVC. ***aggregationReleased*** indicates that this EVC has been released. Refer to *aggregationLastFailureCause* attribute for the diagnostic. ***aggregationRejected*** indicates that this EVC's attempt to use aggregation has been rejected by ETS. Refer to *aggregationLastFailureCause* attribute for the diagnostic. ***aggregationConnected*** indicates that this EVC has been successfully aggregated over a shared transport VC.
Mib	LanDrivers
Values	notApplicable aggregationReleased aggregationRejected aggregationConnected
Default	No default

ATTRIBUTE La Vlan Evc Spvc aggregationLastFailureCause (aggFailCause)

Access	Read only
Description	This attribute indicates the cause of the last connection aggregation failure. ***notApplicable*** indicates that this EVC is successfully established over a shared transport VC. ***spvcNotAvail*** indicates that the shared transport VC matching this *lanApplication* instance and this EVC's *remoteAddress* and that satisfies its *ethernetPerHopBehavior*, was disabled at the time of the last EVC setup attempt. ***noNsapPrefixMatch*** indicates that all shared transport VC's matching this *lanApplication* instance do not match this EVC's *remoteAddress*, at the time of the last EVC setup attempt. ***etsNotReady*** indicates the Ethernet Transport System is not yet available to process connection requests.
Mib	LanDrivers
Values	notApplicable spvcNotAvail noNsapPrefixMatch etsNotReady

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Default	No default

COMPONENT La Vlan Evc Spvc **EthernetSourceVcc (SrcVcc)**

Groups	GROUP La Vlan Evc Spvc SrcVcc Provisioned (Prov)
Scope	Device
Description	*La/x Evc Spvc/m EthernetSourceVcc* *La/x Vlan/y Evc Spvc/m EthernetSourceVcc* This component specifies the far end ATM UNI information for a single-ended EVC configuration. If the *Evc aggregation* attribute has a value of ***enabled***, this component cannot be provisioned under the *Spvc* component. This component takes precedence over the *EthernetSourceEvc* component if both exist, forcing a single-ended EVC configuration.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Vlan Evc Spvc SrcVcc **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetSourceVcc* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc SrcVcc **calledVpiVci (cdVpiVci)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the far end ATM UNI VCC that is the called end of this EVC.
Mib	LanDrivers
Values	Integer Sequence (0..255; 32..65536)
Default	No default

COMPONENT La Vlan Evc Spvc **AtmConnection (AtmCon)**

Groups	GROUP La Vlan Evc Spvc AtmCon Operational (Oper)
Scope	Device

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Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Vlan Evc Spvc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	LanDrivers
Values	The name of the component
Default	No default

COMPONENT La Vlan Evc Spvc EtsTrspCon (TrspCon)

Groups	GROUP La Vlan Evc Spvc TrspCon Operational (Oper)
Scope	Device
Description	*La/x Evc Spvc/m EtsTrspCon* *La/x Vlan/y Evc Spvc/m EtsTrspCon* This component represents each connection established by the *EthernetTransportSystem* component. It indicates the next hop *Ets EvIsAtmTransport Spvc*, where the traffic flow for this EVC is transmitted to and from where it is received.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Vlan Evc Spvc TrspCon Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for the *EtsTrspCon* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc TrspCon transportEndPoint (trspEP)

Access	Read only
Description	This attribute indicates the component name of the *Ets EAtmTrsp/m* component to which this EVC is established.
Mib	LanDrivers
Values	The name of the component
Default	No default

COMPONENT La Vlan EthernetStatistics (Stats)

Groups	GROUP La Vlan Stats EthIfStatsOper (EthIfStats) GROUP La Vlan Stats EthStatsOper (EthStats)
Scope	Application
Description	*La/n EthernetStatistics* *La/n Vlan/m EthernetStatistics* This component represents the statistics on this Ethernet Interface. This component only exists under the *La* component for ***4pEth100BaseT***, ***8pEth100BaseT*** and ***4pGe*** FPs and always exists under the *Vlan* component. When this Ethernet interface is configured on the ***4pEth100BaseT***, ***8pEth100BaseT*** and ***4pGe*** FPs, the system automatically creates this component under the *LanApplication* component. When this component is under the *LanApplication* component in port-mode, it identifies the statistics for all frames received and transmitted on this Ethernet interface. When this component is under the *LanApplication* component in VLAN-mode, this component identifies the statistics for all frames received and transmitted on this Ethernet interface that are classified as port-VLAN traffic. In addition, this component identifies all frames that are received on this Ethernet interface that are discarded to a VID mismatch. When this component exists under the *Vlan* component, it identifies the statistics for this *Vlan* component for all VLAN-tagged frames that are

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received and transmitted on this Ethernet interface with their VID set to this *Vlan* component instance.

Mib LanDrivers

Common Verbs Help
List
Display

GROUP La Vlan Stats EthIfStatsOper (EthIfStats)

Properties Operational

Description This group contains statistics for the *EthernetStatistics* component. This group is not displayed when the parent of *EthernetStatistics* is the *Vlan* component.

Mib LanDrivers

ATTRIBUTE La Vlan Stats unknownVlanId (unknownVlan)

Access Read only

Description This attribute counts the total number of frames received from this Ethernet interface for a VLAN that is not configured on the interface, and as a result discarded.

When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* value is ***discard***, it counts discarded IEEE 802.1Q VLAN-tagged frames with a non-zero VID.

When this interface is operating in VLAN-mode, it counts discarded IEEE 802.1Q VLAN-tagged frames that have no corresponding *Vlan* component instance configured, and additionally untagged, priority-tagged, and port-VLAN ID tagged (VID=1) frames when the port-VLAN is not configured on this interface.

When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, and the port-VLAN is configured, this counter does not increment.

This counter wraps to zero when it exceeds its maximum value.

Mib LanDrivers

Values Long Integer

Default No default

ATTRIBUTE La Vlan Stats lastUnknownVlanId

Access Read only

Description This attribute indicates the IEEE 802.1Q VLAN identifier of the most recent frame that is discarded due to a mismatch in the *Vlan* component instance on this Ethernet interface.

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When the Ethernet interface is operating in VLAN-mode, this attribute indicates the port-VLAN ID (VID=1) for untagged, priority-tagged and port-VLAN ID tagged frames.

The value of ***notApplicable*** means no traffic with an unknown VLAN Id has been received and the *unknownVlanId* counter is zero.

When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept,*** this attribute should be ignored.

Mib — LanDrivers

Values — Decimal (1..4095)
notApplicable

Default — notApplicable

GROUP La Vlan Stats EthStatsOper (EthStats)

Properties — Operational

Description — This group contains operational attributes for the *EthernetStatistics* component.

Mib — LanDrivers

ATTRIBUTE La Vlan Stats rxFrames

Access — Read only

Description — If the parent of *EthernetStatistics* is the *LanApplication* component, this attribute counts the number of IEEE 802.3 or Ethernet v2.0 untagged, priority-tagged, port-VLAN tagged and VLAN-tagged frames received from this Ethernet interface for this *LanApplication* component.

When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes IEEE 802.3 and Ethernet v2.0 untagged frames, and IEEE 802.1Q priority-tagged frames only. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count includes all frames received from this Ethernet interface for this *LanApplication* component.

When this interface is operating in VLAN-mode, the port-VLAN is configured, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard,*** this count includes, in addition to the port-mode frames, the IEEE 802.1Q port-VLAN tagged frames. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count additionally includes all IEEE 802.1Q VLAN-tagged frames received, that do not have a corresponding *Vlan* component instance configured.

When this interface is operating in VLAN-mode, and the port-VLAN is not configured, this count does not increment.

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If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of frames in IEEE 802.1Q VLAN-tagged frames that are received from this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib LanDrivers

Values Long Integer

Default No default

ATTRIBUTE La Vlan Stats txFrames

Access Read only

Description If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of Ethernet v2.0 untagged or port-VLAN tagged frames transmitted to this Ethernet interface for this *LanApplication* component.

When this interface is operating in port-mode, this count includes only Ethernet v2.0 untagged frames.

When this interface is operating in VLAN-mode, this count includes either Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames that are transmitted to this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib LanDrivers

Values Long Integer

Default No default

ATTRIBUTE La Vlan Stats rxBytes

Access Read only

Description If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of bytes of IEEE 802.3 or Ethernet v2.0 untagged, priority-tagged, port-VLAN tagged and VLAN-tagged frames received from this Ethernet interface for this *LanApplication* component.

When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes the number of bytes of IEEE 802.3 and Ethernet v2.0 untagged frames,

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and IEEE 802.1Q priority-tagged frames only. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count includes the number of bytes of all frames received from this Ethernet interface for this *LanApplication* component.

When this interface is operating in VLAN-mode, and the port-VLAN is configured, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes, in addition to the port-mode frames, the number of bytes of the IEEE 802.1Q port-VLAN tagged frames. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count additionally includes the number of bytes of all IEEE 802.1Q VLAN-tagged frames received, that do not have a corresponding *Vlan* component instance configured

The number of bytes of a frame includes the MAC header up to, but not including the Ethernet FCS, and if present includes the IEEE 802.1Q tag header.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of bytes in IEEE 802.1Q VLAN-tagged frames that are received from this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib — LanDrivers

Values — Long Integer

Default — No default

ATTRIBUTE La Vlan Stats txBytes

Access — Read only

Description

If the parent of the *EthernetStatistics* component is the *LanApplication* component, the attribute counts the number of bytes in Ethernet v2.0 untagged or port-VLAN tagged frames transmitted to this Ethernet interface for this *LanApplication* component.

When this interface is operating in port-mode, this count includes only the number of bytes in Ethernet v2.0 untagged frames.

When this interface is operating in VLAN-mode, this count includes the number of bytes in either Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute.

The number of bytes of a frame includes the MAC header up to, but not including, the Ethernet FCS, and if present includes the IEEE 802.1Q tag header.

If the parent of the *EthernetStatistics* component is the *Vlan* component,

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this attribute counts the number of bytes in IEEE 802.1Q VLAN-tagged frames that are transmitted to this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Vlan Stats rxDiscFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of frames received from this Ethernet interface that are discarded because a network is congested or the connection is disabled. When this interface is operating in port-mode, this count includes IEEE 802.3 or Ethernet v2.0 untagged, IEEE 802.1Q priority-tagged and VLAN ID with no zero frames. When this interface is in VLAN-mode, this count includes IEEE 802.3 or Ethernet v2.0 untagged, IEEE 802.1Q priority-tagged and VLAN tagged frames. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames with their VID set to this *Vlan* component instance that are received from this Ethernet interface and discarded because a network is congested or the connection is disabled. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid congestion conditions. A typical cause of the congestion condition may be that the offerred load from all ingress FPs onto the egress FP is greater than the capacity of that FP. Check the egress FP congestion level to determine remedial action. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Vlan Stats txDiscFrames

Access	Read only

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Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames transmitted to this Ethernet interface and discarded because a link is congested or the connection is disabled. When this interface is operating in port-mode, this count includes Ethernet v2.0 untagged frames only. When this interface is in VLAN-mode, this count includes either Ethernet v2.0 untagged, or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames with their VID set to this *Vlan* component instance that are transmitted to this Ethernet interface and discarded because a link is congested or the connection is disabled. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid congestion conditions. A typical cause of the congestion condition may be that the offerred load from all ingress FPs onto this egress FP is greater than the capacity of this FP. Check this FP congestion level to determine remedial action. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La EthernetStatistics (Stats)

Groups	GROUP La Stats EthIfStatsOper (EthIfStats) GROUP La Stats EthStatsOper (EthStats)
Scope	Application
Description	*La/n EthernetStatistics* *La/n Vlan/m EthernetStatistics* This component represents the statistics on this Ethernet Interface. This component only exists under the *La* component for ***4pEth100BaseT***, ***8pEth100BaseT*** and ***4pGe*** FPs and always exists under the *Vlan* component. When this Ethernet interface is configured on the ***4pEth100BaseT***, ***8pEth100BaseT*** and ***4pGe*** FPs, the system automatically creates this

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component under the *LanApplication* component.

When this component is under the *LanApplication* component in port-mode, it identifies the statistics for all frames received and transmitted on this Ethernet interface. When this component is under the *LanApplication* component in VLAN-mode, this component identifies the statistics for all frames received and transmitted on this Ethernet interface that are classified as port-VLAN traffic. In addition, this component identifies all frames that are received on this Ethernet interface that are discarded to a VID mismatch.

When this component exists under the *Vlan* component, it identifies the statistics for this *Vlan* component for all VLAN-tagged frames that are received and transmitted on this Ethernet interface with their VID set to this *Vlan* component instance.

Mib LanDrivers

Common Verbs
Help
List
Display

GROUP La Stats EthIfStatsOper (EthIfStats)

Properties Operational

Description This group contains statistics for the *EthernetStatistics* component. This group is not displayed when the parent of *EthernetStatistics* is the *Vlan* component.

Mib LanDrivers

ATTRIBUTE La Stats unknownVlanId (unknownVlan)

Access Read only

Description This attribute counts the total number of frames received from this Ethernet interface for a VLAN that is not configured on the interface, and as a result discarded.

When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* value is ***discard***, it counts discarded IEEE 802.1Q VLAN-tagged frames with a non-zero VID.

When this interface is operating in VLAN-mode, it counts discarded IEEE 802.1Q VLAN-tagged frames that have no corresponding *Vlan* component instance configured, and additionally untagged, priority-tagged, and port-VLAN ID tagged (VID=1) frames when the port-VLAN is not configured on this interface.

When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, and the port-VLAN is configured, this counter does not increment.

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This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats lastUnknownVlanId

Access	Read only
Description	This attribute indicates the IEEE 802.1Q VLAN identifier of the most recent frame that is discarded due to a mismatch in the *Vlan* component instance on this Ethernet interface. When the Ethernet interface is operating in VLAN-mode, this attribute indicates the port-VLAN ID (VID=1) for untagged, priority-tagged and port-VLAN ID tagged frames. The value of ***notApplicable*** means no traffic with an unknown VLAN Id has been received and the *unknownVlanId* counter is zero. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept,*** this attribute should be ignored.
Mib	LanDrivers
Values	Decimal (1..4095) notApplicable
Default	notApplicable

GROUP La Stats EthStatsOper (EthStats)

Properties	Operational
Description	This group contains operational attributes for the *EthernetStatistics* component.
Mib	LanDrivers

ATTRIBUTE La Stats rxFrames

Access	Read only
Description	If the parent of *EthernetStatistics* is the *LanApplication* component, this attribute counts the number of IEEE 802.3 or Ethernet v2.0 untagged, priority-tagged, port-VLAN tagged and VLAN-tagged frames received from this Ethernet interface for this *LanApplication* component. When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes IEEE 802.3 and Ethernet v2.0 untagged frames, and IEEE 802.1Q priority-tagged frames only. When the *EthernetPolicy unknownVlanIdTreatment*

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attribute is set to ***accept***, this count includes all frames received from this Ethernet interface for this *LanApplication* component.

When this interface is operating in VLAN-mode, the port-VLAN is configured, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard,*** this count includes, in addition to the port-mode frames, the IEEE 802.1Q port-VLAN tagged frames. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count additionally includes all IEEE 802.1Q VLAN-tagged frames received, that do not have a corresponding *Vlan* component instance configured.

When this interface is operating in VLAN-mode, and the port-VLAN is not configured, this count does not increment.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of frames in IEEE 802.1Q VLAN-tagged frames that are received from this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib — LanDrivers

Values — Long Integer

Default — No default

ATTRIBUTE La Stats txFrames

Access — Read only

Description — If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of Ethernet v2.0 untagged or port-VLAN tagged frames transmitted to this Ethernet interface for this *LanApplication* component.

When this interface is operating in port-mode, this count includes only Ethernet v2.0 untagged frames.

When this interface is operating in VLAN-mode, this count includes either Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames that are transmitted to this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib — LanDrivers

Values — Long Integer

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Default	No default

ATTRIBUTE La Stats rxBytes

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of bytes of IEEE 802.3 or Ethernet v2.0 untagged, priority-tagged, port-VLAN tagged and VLAN-tagged frames received from this Ethernet interface for this *LanApplication* component. When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes the number of bytes of IEEE 802.3 and Ethernet v2.0 untagged frames, and IEEE 802.1Q priority-tagged frames only. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count includes the number of bytes of all frames received from this Ethernet interface for this *LanApplication* component. When this interface is operating in VLAN-mode, and the port-VLAN is configured, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes, in addition to the port-mode frames, the number of bytes of the IEEE 802.1Q port-VLAN tagged frames. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count additionally includes the number of bytes of all IEEE 802.1Q VLAN-tagged frames received, that do not have a corresponding *Vlan* component instance configured The number of bytes of a frame includes the MAC header up to, but not including the Ethernet FCS, and if present includes the IEEE 802.1Q tag header. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of bytes in IEEE 802.1Q VLAN-tagged frames that are received from this Ethernet interface with their VID set to this *Vlan* component instance. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats txBytes

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, the attribute counts the number of bytes in Ethernet v2.0 untagged or port-VLAN tagged frames transmitted to this Ethernet interface for this *LanApplication* component.

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When this interface is operating in port-mode, this count includes only the number of bytes in Ethernet v2.0 untagged frames.

When this interface is operating in VLAN-mode, this count includes the number of bytes in either Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute.

The number of bytes of a frame includes the MAC header up to, but not including, the Ethernet FCS, and if present includes the IEEE 802.1Q tag header.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of bytes in IEEE 802.1Q VLAN-tagged frames that are transmitted to this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats rxDiscFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of frames received from this Ethernet interface that are discarded because a network is congested or the connection is disabled. When this interface is operating in port-mode, this count includes IEEE 802.3 or Ethernet v2.0 untagged, IEEE 802.1Q priority-tagged and VLAN ID with no zero frames. When this interface is in VLAN-mode, this count includes IEEE 802.3 or Ethernet v2.0 untagged, IEEE 802.1Q priority-tagged and VLAN tagged frames. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames with their VID set to this *Vlan* component instance that are received from this Ethernet interface and discarded because a network is congested or the connection is disabled. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid congestion conditions.

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A typical cause of the congestion condition may be that the offerred load from all ingress FPs onto the egress FP is greater than the capacity of that FP. Check the egress FP congestion level to determine remedial action.

This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats txDiscFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames transmitted to this Ethernet interface and discarded because a link is congested or the connection is disabled. When this interface is operating in port-mode, this count includes Ethernet v2.0 untagged frames only. When this interface is in VLAN-mode, this count includes either Ethernet v2.0 untagged, or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames with their VID set to this *Vlan* component instance that are transmitted to this Ethernet interface and discarded because a link is congested or the connection is disabled. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid congestion conditions. A typical cause of the congestion condition may be that the offerred load from all ingress FPs onto this egress FP is greater than the capacity of this FP. Check this FP congestion level to determine remedial action. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La EthernetPolicy (Policy)

Groups	GROUP La Policy Provisioned (Prov)

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Scope	Application
Description	*La/n EthernetPolicy* This component represents the policies for the *LanApplication* component in both network ingress and egress directions. When this *LanApplication* instance is in VLAN-mode, these policies apply to the port-VLAN only.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Policy Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetPolicy* component.
Mib	LanDrivers

ATTRIBUTE La Policy unknownVlanIdTreatment (uvidtreat)

Access	Read and write
Criticality	Component
Description	This attribute specifies the treatment of IEEE 802.1Q VLAN tagged traffic received from the interface for which there is no provisioned *Vlan* component instance. The possible values are: ***discard***: this value specifies that all packets received from the interface, including control packets, that are tagged with a VLAN Id that is not configured on the port are to be discarded. The *EthernetStatistcs unknownVlanId* and *lastUnknownVlanId* attributes indicate those packets. ***accept***: when this Ethernet interface is operating in port-mode, this value specifies that all packets received from the interface, including control packets, that are VLAN-tagged are to be accepted and handled by the configured service. When this Ethernet interface is operating in VLAN-mode, this value specifies that all packets received from the interface, including control packets, that are tagged with a VLAN Id, that is not configured on the port, are to be treated by the port-VLAN. If the port-VLAN is not configured on the Ethernet interface, that traffic is discarded.

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Mib	LanDrivers
Values	discard accept
Default	discard

ATTRIBUTE La Policy egressTagRule (egtag)

Access	Read and write
Description	This attribute specifies the tagging rule for frames transmitted to the Ethernet interface. This attribute is only applicable if the Ethernet interface is operating in VLAN mode. Otherwise, this attribute is ignored, and has no effect on the traffic transmitted to the interface. The possible values are: ***untagged*** - this value specifies that all packets, including control packets that are associated with the port-VLAN, are transmitted on the Ethernet interface without an IEEE 802.1Q tag header. ***tagged*** - this value specifies that all packets, including control packets that are associated with the port-VLAN, are transmitted to the Ethernet interface with an IEEE 802.1Q tag header, with the VLAN ID value set to the port-VLAN ID (i.e. VID = 1).
Mib	LanDrivers
Values	untagged tagged
Default	No default

ATTRIBUTE La Policy vlanAware

Access	Read and write
Description	This attribute specifies the operating mode of this Ethernet interface, when no *Vlan* components are configured for this *LanApplication*. It specifies whether the interface is to operate in port-mode or inVLAN-mode. This attribute is ignored if there is at least one *Vlan* component configured for this *LanApplication*. When this attribute is set to ***disabled***, this Ethernet interface operates in port-mode. In this mode, all untagged and priority-tagged traffic is accepted. Optionally, VLAN-tagged traffic can either be accepted or discarded depending on the value of the *unknownVlanTreatment* attribute. When this attribute is set to ***enabled***, this Ethernet interface operates in VLAN-mode, as the port-VLAN. In this mode, all untagged, priority-tagged and port-VLAN tagged traffic is accepted. Optionally, VLAN-tagged traffic can either be accepted or discarded depending on the value of the *unknownVlanTreatment* attribute.

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For an EVLS EVC, if this attribute is set to ***disabled***, this interface is addressable as VID=0. Otherwise, it is addressable as VID=1.

Modifying this attribute may result in loss of connectivity.

The default is ***disabled***.

Mib	LanDrivers
Values	enabled disabled
Default	disabled

COMPONENT La Framer

Groups	GROUP La Framer Provisioned (Prov) GROUP La Framer Statistics (Stats)
Scope	Application
Description	*LanApplication/n Framer* The *Framer* component is used to link a *LanApplication* to a Lan interface such as *Ethernet*, *Fddi*, *TokenRing* or *Ethernet100BaseT*.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the link to the Lan interface such as *Ethernet*, *Fddi*, or *TokenRing*.
Mib	LanDrivers

ATTRIBUTE La Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute associates the *LanApplication* with a specific Lan interface such as *Ethernet*, *Fddi*, or *TokenRing*. This also defines the *LogicalProcessor* on which *Framer*'s parent component (as well as *Framer* itself) will run. Only one (1) LAN interface can be linked to a *Framer* except for *Ethernet100BaseT* LAN interface, for which up to two (2) interfaces residing on the same *LogicalProcessor* can be linked.

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Mib	LanDrivers
List of	Link (Hardware, applicationFramerName)
List Size	2
Default	No default

GROUP La Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer* component. This group is filtered when the *interfaceName* is linked to the *oamEnet* and *ethernet* components provisioned under 6pEth10BaseT, 2pEth100BaseT, 2pGpDsk etc.
Mib	LanDrivers

ATTRIBUTE La Framer lrcErrors

Access	Read only
Description	This attribute counts of the number of frames or cells that have failed the Longintudinal Redundancy Check (LRC) as they were being sent to the link. This check is used to verify the integrity of the data prior to transmission. Usually the problem is on the originating card, with the destination card the only one reporting the error.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE La Framer rxFrames

Access	Read only
Description	This attribute counts the frames received from this interface.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer rxBytes

Access	Read only
Description	This attribute counts the bytes received from this interface.
Mib	LanDrivers
Values	Long Integer
Default	No default

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ATTRIBUTE La Framer txFrames

Access	Read only
Description	This attribute counts the frames transmitted to this interface.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer txBytes

Access	Read only
Description	This attribute counts the bytes transmitted to this interface.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer rxDiscard

Access	Read only
Description	This attribute counts the frames received from this interface that are discarded due to a network congestion condition. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid network congestion conditions.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer txDiscard

Access	Read only
Description	This attribute counts the frames transmitted to this interface that are discarded due to a network congestion condition. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid network congestion conditions.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer rxFrameError

Access	Read only

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Description	This attribute counts the frames received from this interface that are discarded due to frame reassembly errors.
Mib	LanDrivers
Values	Long Integer
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - La

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Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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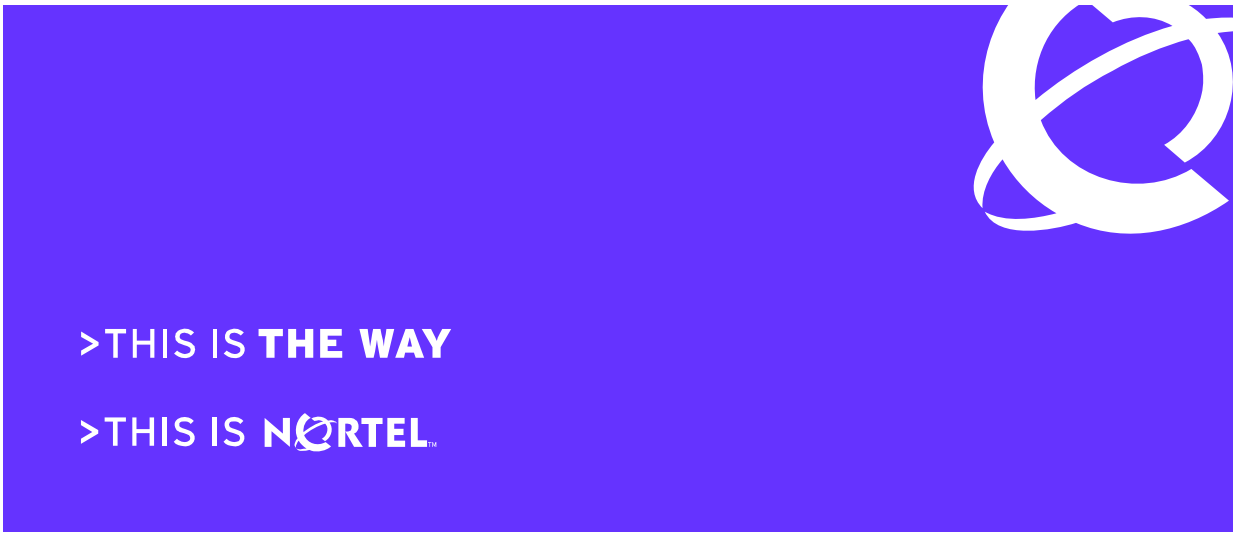

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Lec

NN10600-060

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COMPONENT LanEmulationClient (Lec)

Instance	Decimal (0..31)
Groups	GROUP Lec CustomerIdentifierData (CidData) GROUP Lec IfEntryProv (IfEntry) GROUP Lec MediaProv (Mp) GROUP Lec Provisioned (Prov) GROUP Lec OsiState (State) GROUP Lec OperationalStatus (OperStatus) GROUP Lec Operational (Oper) GROUP Lec Statistics (Stats)
Scope	Application
Description	*LanEmulationClient/n* This component represents a LAN Emulation Client (LEC) as specified in the ATM Forum LAN Emulation over ATM Specification (LANE). The LEC provides a MAC level emulated Ethernet service to higher layer protocols using ATM VCCs. The 'laneClient' feature must be provisioned on all ILS and ATM cards.
Mib	LaneClient
Dyn. Subcomp.	COMPONENT Lec LeArpEntry (LeArp) COMPONENT Lec Connection (Conn)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lec CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

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Mib	LaneClient

ATTRIBUTE Lec customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LaneClient
Values	Decimal (0; 1..8191)
Default	0

GROUP Lec IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LaneClient

ATTRIBUTE Lec ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LaneClient
Values	up down testing
Default	up

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ATTRIBUTE Lec ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LaneClient
Values	Decimal (1..65535)
Default	No default

GROUP Lec MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the Media Application component.
Mib	LaneClient

ATTRIBUTE Lec linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	LaneClient
Values	Link (Service, linkToMedia)
Default	No default

GROUP Lec Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *LanEmulationClient* component.
Mib	LaneClient

ATTRIBUTE Lec lanType

Access	Read and write
Criticality	Component
Description	This attribute specifies the data frame format for this LEC. Auto-configuring LECs use this attribute in their Configure requests. Manually-configured LECs use it in their Join requests. A value of ***unspecified*** implies that the data frame format is obtained from the LECS or LES.

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	The value of this attribute may be overridden by the LECS or LES; *actualLanType* contains the actual value.
Mib	LaneClient
Values	unspecified ethernet
Default	unspecified

ATTRIBUTE Lec maxFrameSize

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum data frame size for this LEC. Auto-configuring LECs use this attribute in their Configure requests. Manually-configured LECs use it in their Join requests. A value of ***unspecified*** may only be used for auto-configuring LECs.
Mib	LaneClient
Values	unspecified 1516 1580 4544 9234 18190
Units	octets
Default	unspecified

ATTRIBUTE Lec lanName

Access	Read and write
Criticality	Component
Description	This attribute specifies the ELAN name for this LEC. Auto-configuring LECs use this attribute in their Configure requests. Manually-configured LECs use it in their Join requests. An empty string means unspecified. The value of this attribute may be overridden by the LECS or LES; *actualLanName* contains the actual value.
Mib	LaneClient
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Lec v2Capable (v2c)

Access	Read and write
Criticality	Component

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Description	This attribute specifies whether this LEC exhibits LANE v2 behavior where it differs in its requirements from LANE v1 behavior.
Mib	LaneClient
Values	yes no
Default	yes

ATTRIBUTE Lec lecsAddress (lecsAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM address of the LECS. If this attribute is non-null, the LEC attempts to set up a Configuration Direct SVC to this address as the first step in the LECS Connect phase. Otherwise, the well known LECS ATM address is used. Only one of the attributes *lecsAddress* and *lesAddress* can be specified at one time.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec lesAddress (lesAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM address of the LES. The LEC uses this address to connect directly to the LES, thus bypassing the LECS. A LEC which did not use the LECS is deemed to be manually-configured. Only one of the attributes *lecsAddress* and *lesAddress* can be specified at one time.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec maxDataSvcs

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of Data Direct SVCs which this LEC can have active at any one time. When operating at the maximum, an SVC setup request releases the oldest 10% of the Data Direct SVCs of this LEC. A SET alarm is issued when *currDataSvcs* rises above 95% of this value

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	and is CLEAR-ed when it falls below 85%. Set *maxDataSvcs* as low as acceptable since a fixed amount of memory is consumed proportional to this value on every LP with this feature present.
Mib	LaneClient
Values	Decimal (16..1018)
Default	16

ATTRIBUTE Lec maxArpEntries

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of entries which this LEC can have in its LE_ARP table at any one time. When operating at the maximum, if an additional entry must be installed, up to 10% of the oldest entries are removed. A SET alarm is issued when *currArpEntries* rises above 95% of this value and is CLEAR-ed when it falls below 85%.
Mib	LaneClient
Values	Decimal (32..10240)
Default	5120

ATTRIBUTE Lec ilsForwarder (ilsFwdr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *IlsForwarder* that this LEC is using.
Mib	LaneClient
Values	Link (Service, linkToTrafficSource)
Default	No default

GROUP Lec OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LaneClient

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ATTRIBUTE Lec adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LaneClient
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lec operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LaneClient
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lec usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	LaneClient
Values	idle active (activ) busy
Default	idle

GROUP Lec OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LaneClient

ATTRIBUTE Lec snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LaneClient
Values	up down testing
Default	up

GROUP Lec Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *LanEmulationClient* component.
Mib	LaneClient

ATTRIBUTE Lec actualLanType (actLanType)

Access	Read only
Description	This attribute indicates the data frame format of this LEC. This may come from the *lanType* attribute, LECS or LES. The data frame format is not

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unspecified for an operational LEC.
This attribute represents the ‘C2’ LEC state parameter in the ATM Forum LANE specification.

Token Ring data frame format is not supported. The LEC does not become operational if the LECS or LES specify a LAN type of Token Ring.

Mib	LaneClient
Values	unspecified ethernet
Default	No default

ATTRIBUTE Lec actualMaxFrameSize (actMaxFrameSize)

Access	Read only
Description	This attribute indicates the maximum data frame size of this LEC. This may come from the *maxFrameSize* attribute, LECS or LES. The value is not ***unspecified*** for an operational LEC.
Mib	LaneClient
Values	unspecified 1516 1580 4544 9234 18190
Units	octets
Default	No default

ATTRIBUTE Lec actualLanName (actLanName)

Access	Read only
Description	This attribute indicates the name of the ELAN to which this LEC is connected. This may come from the *lanName* attribute, LECS or LES. It may be null for an operational LEC. This attribute represents the ‘C5’ LEC state parameter in the ATM Forum LANE specification.
Mib	LaneClient
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Lec elanId

Access	Read only
Description	This attribute identifies the ELAN to which this LEC is connected. For v2, the value will be set in the configuration phase,

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Mib	LaneClient
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lec actualV2Capable (v2)

Access	Read only
Description	This attribute indicates whether this LEC exhibits LANE v2 behavior. The value is set in the Join phase.
Mib	LaneClient
Values	yes no
Default	No default

ATTRIBUTE Lec configurationSource (configSource)

Access	Read only
Description	This attribute indicates whether this LEC used the LECS, and if so, the method used to establish the Configuration Direct VCC.
Mib	LaneClient
Values	usedProvisionedLecsAddress gotLecsAddressViaIlmi usedWellKnownLecsAddress usedLecsPvc didNotUseLecs
Default	No default

ATTRIBUTE Lec actualLecsAddress (actLecsAddr)

Access	Read only
Description	This attribute indicates the ATM address of the LECS used to configure this LEC. The address is null if the LECS was not used.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec actualLesAddress (actLesAddr)

Access	Read only
Description	This attribute indicates the ATM address of the LES which is currently serving this LEC. The address is not null for an operational LEC. This attribute represents the ‘C9’ LEC state parameter in the ATM Forum LANE specification.

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Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec atmAddress (atmAddr)

Access	Read only
Description	This attribute indicates the ATM address of this LEC. This attribute represents the 'C1' LEC state parameter in the ATM Forum LANE specification.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec macAddress (macAddr)

Access	Read only
Description	This attribute indicates the MAC address of this LEC. This attribute represents the 'C6' LEC state parameter in the ATM Forum LANE specification.
Mib	LaneClient
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lec lecId

Access	Read only
Description	This attribute indicates the LANE Client Identifier (LECID) assigned to this LEC by the LES during the Join phase. The LECID uniquely identifies a LEC on a particular ELAN. This attribute represents the 'C14' LEC state parameter in the ATM Forum LANE specification.
Mib	LaneClient
Values	Decimal (0..65279)
Default	No default

ATTRIBUTE Lec interfaceState

Access	Read only
Description	This attribute indicates the current state of the LEC. Note that *ifOperStatus* is ***up*** only when *interfaceState* is ***operational***. - ***initialState***: Some parameters (such as addresses and ELAN name) are known to the LEC.

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- ***lecsConnect***: LEC establishes Configuration Direct VCC to LECS. Manually-configured LECs skip this state.
- ***configure***: LEC discovers LES.
- ***join***: LEC establishes control connections to LES. LEC is assigned unique LECID and knows all ELAN parameters.
- ***initialRegistration***: LEC may register additional MAC addresses with LES. This is in addition to the single MAC address registered during Join phase.
- ***busConnect***: LEC issues LE_ARP to locate the BUS and sets up the connection. The BUS then establishes the Multicast Forward VCC to the LEC.
- ***operational***: LEC is operational and can forward data traffic.

Mib: LaneClient

Values:
initialState
lecsConnect
configure
join
initialRegistration
busConnect
operational

Default: No default

ATTRIBUTE Lec lastFailureResponseCode

Access: Read only

Description: The attribute indicates the status code from the last failed Configure or Join response. Failed responses are those for which the LE_CONFIGURE_RESPONSE / LE_JOIN_RESPONSE frame contains a non-zero code, or fails to arrive within a time-out period. If none of the LEC's requests have failed, this attribute has the value ***none***.

Mib: LaneClient

Values:
none
timeout
undefinedError
versionNotSupported
invalidRequestParameters
duplicateLanDestination
duplicateAtmAddress
insufficientResources
accessDenied
invalidRequesterId
invalidLanDestination
invalidAtmAddress
noConfiguration
leConfigureError
insufficientInformation

Default: No default

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ATTRIBUTE Lec lastFailureState

Access	Read only
Description	This attribute indicates the state that the LEC was in when it updated the *lastFailureResponseCode*. If *lastFailureResponseCode* is ***none***, this attribute has the value ***initialState***. See the *interfaceState* attribute for a description of each state.
Mib	LaneClient
Values	initialState lecsConnect configure join initialRegistration busConnect operational
Default	No default

GROUP Lec Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *LanEmulationClient* component.
Mib	LaneClient

ATTRIBUTE Lec arpRequestsOut

Access	Read only
Description	This attribute counts the LE_ARP_REQUESTS sent by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec arpRepliesIn

Access	Read only
Description	This attribute counts the LE_ARP_RESPONSES received by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

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ATTRIBUTE Lec arpRequestsIn

Access	Read only
Description	This attribute counts the LE_ARP_REQUESTS received by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec arpRepliesOut

Access	Read only
Description	This attribute counts the LE_ARP_RESPONSES sent by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec controlFramesOut

Access	Read only
Description	This attribute counts the control packets sent by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec controlFramesIn

Access	Read only
Description	This attribute counts the control packets received by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec svcFailures

Access	Read only
Description	This attribute counts the number of SVCs that could not be set up. The reasons for failure are: - outgoing SVCs that this LEC failed to establish;

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	- incoming SVCs that this LEC failed to establish; and - incoming SVCs that this LEC rejected for protocol or security reasons. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec currDataSvcs

Access	Read only
Description	This attribute counts the number of Data Direct SVCs that this LEC has in service.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec peakDataSvcs

Access	Read only
Description	The attribute is the peak value of *currDataSvcs*. In other words, this value is the maximum number of Data Direct SVCs that this LEC had in service at any one time.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec currArpEntries

Access	Read only
Description	This attribute counts the current number of entries that this LEC has in its LE ARP table.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec peakArpEntries

Access	Read only
Description	The attribute is the peak value *currArpEntries*. In other words, this value is the maximum number of entries that this LEC had in its LE ARP table at any one time.
Mib	LaneClient

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Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec badControlFrames

Access	Read only
Description	This attribute counts the control frames discarded by the LEC due to invalid or illegal frame format, and those frames with a STATUS code other than “Success”. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec protocolViolations

Access	Read only
Description	This attribute counts the number of responses received by
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec unsupportedTlvs

Access	Read only
Description	This attribute counts the number of times an unsupported TLV was
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Lec LeArpEntry (LeArp)

Instance	String (6, Dashed Hex)
Groups	GROUP Lec LeArp Operational (Oper)
Scope	Application
Description	*Lec/n LeArpEntry/<Mac Address>* This component defines an entry in the LE_ARP table. Each entry

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contains information about the binding of one MAC address to one ATM address.

Mib	LaneClient
Common Verbs	Help List Display

VERB Clear Lec LeArp

Impact	Passive
Description	*Clear Lec/n LeArp/<Mac Address>* This verb removes the specified entry from the LE_ARP table.

GROUP Lec LeArp **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *LeArpEntry* component.
Mib	LaneClient

ATTRIBUTE Lec LeArp **atmAddress (atmAddr)**

Access	Read only
Description	This attribute indicates the ATM address of the BUS or LEC associated with the MAC address of this entry. If the MAC address is the all-ones broadcast address, the entry is for the BUS.
Mib	LaneClient
Values	String (20, Hex)
Default	No default

ATTRIBUTE Lec LeArp **isRemoteAddress (remote)**

Access	Read only
Description	This attribute indicates whether this entry is for a local or remote MAC address. In this context, ‘local’ means a MAC address that is local to a LEC, and ‘remote’ means a MAC address for which the LEC is proxy. If ***yes***, the address is believed to be remote, or its local/remote status is unknown. If ***no***, the address is believed to be local; that is, registered with the LES by the LEC whose ATM address is *atmAddress*.
Mib	LaneClient
Values	yes no
Default	No default

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ATTRIBUTE Lec LeArp connectionId (connId)

Access	Read only
Description	This attribute indicates the connection identifier associated with this entry. The connection identifier is the instance of the *Connection* component.
Mib	LaneClient
Values	Decimal (0..1022)
Default	No default

COMPONENT Lec Connection (Conn)

Instance	Decimal (0..1022)
Groups	GROUP Lec Conn Operational (Oper) GROUP Lec Conn Statistics (Stats)
Scope	Application
Description	*Lec/n Connection/n* This component defines an ATM connection (SVC) that is used by the LEC.
Mib	LaneClient
Dyn. Subcomp.	COMPONENT Lec Conn AtmConnection (AtmCon)
Common Verbs	Help List Display

VERB Clear Lec Conn

Impact	Passive
Description	*Clear Lec/n Conn/n* This verb clears the specified *Connection*. Clearing the BUS connection results in temporary loss of the ability to send/receive broadcast and unknown data traffic. Clearing a connection to the LES reinitializes the LEC.

GROUP Lec Conn Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *Connection* component.
Mib	LaneClient

ATTRIBUTE Lec Conn remoteAtmAddress (remoteAtmAddr)

Access	Read only

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Description	This attribute indicates the ATM address of the far end.
Mib	LaneClient
Values	String (20, Hex)
Default	No default

ATTRIBUTE Lec Conn age

Access	Read only
Description	This attribute indicates the age of this connection.
Mib	LaneClient
Values	Decimal (0..4292967295)
Units	seconds
Default	No default

ATTRIBUTE Lec Conn type

Access	Read only
Description	This attribute indicates the type of this connection.
Mib	LaneClient
Values	configurationDirectVcc (configDirect) controlDirectVcc (controlDirect) controlDistributeVcc (controlDistrib) dataDirectVcc (data) defaultMulticastSendVcc (dfltMcastSend) multicastForward (mcastFwd)
Default	No default

GROUP Lec Conn Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *Connection* component.
Mib	LaneClient

ATTRIBUTE Lec Conn outFrames

Access	Read only
Description	This attribute counts the frames sent over this connection. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

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ATTRIBUTE Lec Conn inFrames

Access	Read only
Description	This attribute counts the frames received over this connection. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Lec Conn AtmConnection (AtmCon)

Groups	GROUP Lec Conn AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	LaneClient
Common Verbs	Help List Display

GROUP Lec Conn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	LaneClient

ATTRIBUTE Lec Conn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	LaneClient
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Lec

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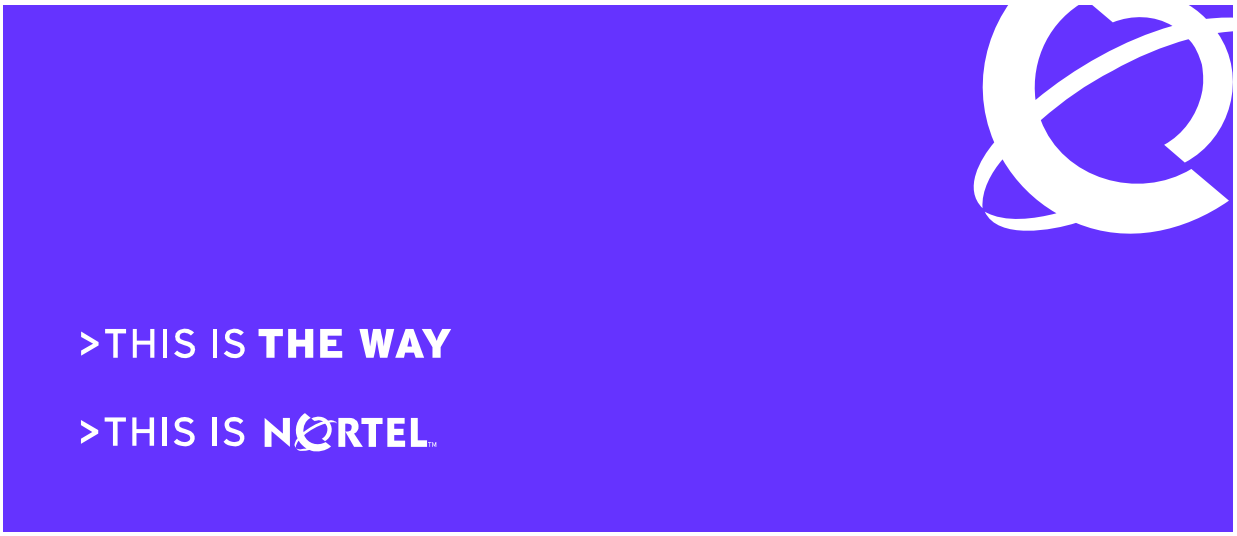

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - LocalMed

NN10600-060

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Type: NTP
Language type: U.S. English

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COMPONENT LocalMedia

Scope	Application
Description	*LocalMedia* The *LocalMedia* component represents a logical media and provides a functional interface to the APCs that are unaware of the *VirtualRouter* and Nortel Networks Multiservice Switch IP architecture. There may be at most one instance of the *LocalMedia* component. The component can be used to support inter-APC communication, or APC communication with external nodes.
Mib	LocalMedia
Subcomponents	COMPONENT LocalMedia Interface (If)
Common Verbs	Help List Display Add DELete

COMPONENT LocalMedia Interface (If)

Instance	Decimal (0..4)
Groups	GROUP LocalMedia If CustomerIdentifierData (CidData) GROUP LocalMedia If IfEntryProv (IfEntry) GROUP LocalMedia If MediaProv (Mp) GROUP LocalMedia If Provisioned (Prov) GROUP LocalMedia If OperationalStatus (OperStatus) GROUP LocalMedia If OsiState (State)
Scope	Application
Description	*LocalMedia Interface/n* This component represents a logical interface to the *LocalMedia* component. The *Interface* component has to be linked to a *VirtualRouter*

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ProtocolPort component which has only one *LogicalInterface* subcomponent.

Mib	LocalMedia
Dyn. Subcomp.	COMPONENT LocalMedia If PsfpIpServer (Pips)
Common Verbs	Help List Display Add DELete

GROUP LocalMedia If CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LocalMedia

ATTRIBUTE LocalMedia If customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LocalMedia
Values	Decimal (0; 1..8191)
Default	0

GROUP LocalMedia If IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.

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Mib	LocalMedia

ATTRIBUTE LocalMedia If **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LocalMedia
Values	up down testing
Default	up

ATTRIBUTE LocalMedia If **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LocalMedia
Values	Decimal (1..65535)
Default	No default

GROUP LocalMedia If **MediaProv (Mp)**

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	LocalMedia

ATTRIBUTE LocalMedia If **linkToProtocolPort (pp)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	LocalMedia
Values	Link (Service, linkToMedia)
Default	No default

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GROUP LocalMedia If Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *If* component.
Mib	LocalMedia

ATTRIBUTE LocalMedia If maxTransmissionUnit (mtu)

Access	Read and write
Description	This attribute specifies the size of the largest datagram which can be sent on the interface. This includes the size of the header (if applicable) as well as the protocol data unit.
Mib	LocalMedia
Values	Decimal (256..9180)
Units	octets
Default	9180

ATTRIBUTE LocalMedia If trafficType (tt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the supported traffic types of the *LocalMedia If* component. It contains one or more of the following values.***Rnc***, ***Cpds***, ***CpdsCoreNetwork, internalTraffic, locationServices***. ***Rnc***: This traffic type supports all types of traffic in RNC-IN. ***Cpds***: This traffic type supports all types of traffic in CPDS, except the traffic between PCU and PDSN. ***CpdsCoreNetwork***: This traffic type supports traffic between PCU and PDSN. ***internalTraffic***: This traffic type supports movable IP and PsfpIpServer feature. ***locationServices***: This traffic type supports AGPS feature.
Mib	LocalMedia
Set of	rnc cpds cpdsCoreNetwork internalTraffic locationServices
Default	No default

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GROUP LocalMedia If OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LocalMedia

ATTRIBUTE LocalMedia If snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LocalMedia
Values	up down testing
Default	up

GROUP LocalMedia If OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LocalMedia

ATTRIBUTE LocalMedia If adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LocalMedia
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE LocalMedia lf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LocalMedia
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE LocalMedia lf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LocalMedia
Values	idle active (activ) busy
Default	idle

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COMPONENT LocalMedia If PsfpIpServer (Pips)

Instance	Decimal (0..15)
Groups	GROUP LocalMedia If Pips Operational (Oper)
Scope	Application
Description	LocalMedia if/n PsfpIpServer This component represents the host PSFP IP Server under InwLocalMedia Interface.
Mib	LocalMedia
Dyn. Subcomp.	COMPONENT LocalMedia If Pips Ip
Common Verbs	Help List Display

GROUP LocalMedia If Pips Operational (Oper)

Properties	Operational
Description	This group hold PsfpIpServer operational data.
Mib	LocalMedia

ATTRIBUTE LocalMedia If Pips ipAddress

Access	Read only
Description	This component represent internet protocol (ip) in the PsfpIpServer.
Mib	LocalMedia
Values	IP address
Default	No default

ATTRIBUTE LocalMedia If Pips runOnCard

Access	Read only
Description	This attribute indicates the instance value corresponding to the card number of the PIPS.
Mib	LocalMedia
Values	Decimal (0..15)
Default	No default

COMPONENT LocalMedia If Pips Ip

Groups	GROUP LocalMedia If Pips Ip Statistics (Stats)

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Scope	Application
Description	This component represent internet protocol (ip) in the PsfpIpServer.
Mib	LocalMedia
Dyn. Subcomp.	COMPONENT LocalMedia If Pips Ip Udp COMPONENT LocalMedia If Pips Ip Icmp
Common Verbs	Help List Display

GROUP LocalMedia If Pips Ip Statistics (Stats)

Properties	Operational
Description	This group contains the Internet Protocol (IP) related statistical attributes.
Mib	LocalMedia

ATTRIBUTE LocalMedia If Pips Ip inReceives (inRcvs)

Access	Read: All Write: Illegal
Description	This attribute counts all the incoming datagrams, including those counted in inErrors and inUnknownProtocols. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip inErrors (inErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the input datagrams discarded due to errors in their IP headers, version number mismatch, other format errors, and time-to-live exceeded which have not already been filtered by the Virtual Router's IP forwarder. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip inUnknownProtocols (inUnkProtos)

Access	Read: All Write: Illegal

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Description	This attribute counts the locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip inDelivers

Access	Read: All Write: Illegal
Description	This attribute counts the input datagrams successfully delivered to the IP user-protocols (including Internet Control Message Protocol (ICMP)). The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip outRequests (outReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the datagrams which the local IP user-protocols (including Internet Control Message Protocol (ICMP)) supplied to IP in requests for transmission. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip reasmTimeOuts (reasmTo)

Access	Read: All Write: Illegal
Description	This attribute counts the IP packet reassembly time-outs at the receiving PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip reasmRequireds (reasmReqds)

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Access	Read: All Write: Illegal
Description	This attribute counts the IP packets with the reassembly bit set. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip reasmOks

Access	Read: All Write: Illegal
Description	This attribute counts the IP packets successfully reassembled by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip reasmFails

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the PsfpIpServer is unable to assemble IP-fragments for any reason. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

COMPONENT LocalMedia If Pips Ip Udp

Groups	GROUP LocalMedia If Pips Ip Udp Statistics (Stats)
Scope	Application
Description	This component represents the UDP functionality supported by the PsfpIpServer.
Mib	LocalMedia
Common Verbs	Help List Display

GROUP LocalMedia If Pips Ip Udp Statistics (Stats)

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Properties	Operational
Description	This group contains all UDP-related statistical attributes supported by the PsfpIpServer.
Mib	LocalMedia

ATTRIBUTE LocalMedia If Pips Ip Udp inDatagrams (inDg)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams delivered to UDP users. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Udp outDatagrams (outDg)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams sent from the UDP stack. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Udp inUnknownPorts (inUnkPorts)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams received for which there was no associated application at the destination port. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Udp inErrors (inErr)

Access	Read: All Write: Illegal
Description	This attribute counts the received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. The counter wraps to zero when it exceeds the maximum value.

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Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

COMPONENT LocalMedia If Pips Ip Icmp

Groups	GROUP LocalMedia If Pips Ip Icmp Statistics (Stats)
Scope	Application
Description	This component represents the Internet Control Message (ICMP) functionality supported by the Pips. The ICMP provides feedback from an IP router or gateway to a source host. It can be used to report errors or verify the reachability of routers or end-system
Mib	LocalMedia
Common Verbs	Help List Display

GROUP LocalMedia If Pips Ip Icmp Statistics (Stats)

Properties	Operational
Description	This group contains the Internet Control Message Protocol (ICMP) related statistical attributes.
Mib	LocalMedia

ATTRIBUTE LocalMedia If Pips Ip Icmp inMsgs

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inErrors (inErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) messages received by the PsfpIpServer, but determined as having ICMP specific errors such as bad ICMP checksums or bad length. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inTimeExceeds (inTimeEx)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) time exceeded messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp outTimeExceeds (outTimeExcds)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) time exceeded messages sent by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inEchos (inEc)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) echo request messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp outEchoReplies (outEcRe)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) echo reply messages sent by this PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia lf Pips Ip Icmp inTimestamps (inTiSta)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) timestamp request messages received by this PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia lf Pips Ip Icmp outTimestampReplies (outTsRep)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) timestamp reply messages sent by this PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia lf Pips Ip Icmp inDestUnreachs (inDestUnr)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) destination unreachable messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia lf Pips Ip Icmp outDestUnreachs (outDestUnr)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) destination unreachable messages sent out by this PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inParmProbs (inProb)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) parameter problem messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp outParmProbs (outProbs)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) parameter problem messages sent by this PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inSrcQuenchs (inSrcQ)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) source quench messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - LocalMed

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Publication: NN10600-060
Document status: Standard
Document issue: 7.2S1
Document date: March 2006
Product release: PCR7.2 and up
Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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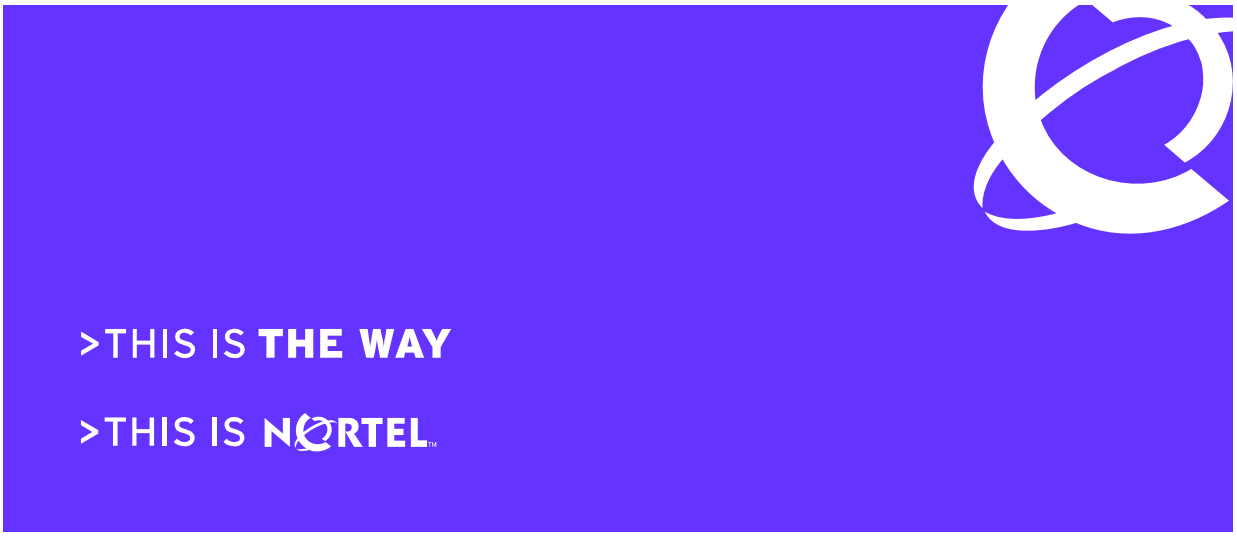

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - LpG

NN10600-060

Document status: Standard
Document issue: 7.2S1
Document date: March 2006
Product release: PCR7.2 and up
Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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COMPONENT LpGroup (LpG)

Instance	Decimal (1..7)
Scope	Device
Description	*LpGroup/n* The *LpGroup* (*LpG*) component is a root component representing an application-level equipment sparing in a multiple *Lp* protection model between pairs or groups of FPs of the same or different card types. An example of when to use this component is when you want to provide protection among a group of unprotected cards during software migration. In this situation, *LpG* is used as the parent component for a list of cards destined to move either to the migration shelf or to stay in the service shelf in the event of software migration.
Mib	LogicalProcessor
Opt. Subcomp.	COMPONENT LpG PcsLpgLogicalProcessor (Lp)
Common Verbs	Help List Display Add DELete

COMPONENT LpG PcsLpgLogicalProcessor (Lp)

Instance	Decimal (1..15)
Groups	GROUP LpG Lp Provisioned (Prov)
Scope	Device
Description	*PcsLpgLogicalProcessor/n* The PcsLpgLogicalProcessor (*Lp*) component is a subcomponent of the *LpGroup* component. It provides multiple equipment protection capabilities between pairs or groups of *Lp* associated to the same or different card types. An example of when you would use this component is when you want to provide protection among a group of unprotected cards of the

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same or different card type. In this situation, *LpG* is used as the parent component for a list of *Lp* in an application-level sparing relationship.

Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP LpG Lp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *LpGroup PcsLpGLogicalProcessor* component.
Mib	LogicalProcessor

ATTRIBUTE LpG Lp migrationBehaviour (mig)

Access	Read and write
Description	This attribute specifies the migration behavior of an active card associated to the *Lp* configured under an *LpG*. If the attribute value is ***stayInServiceShelf***, the card associated to the *Lp* will stay in the service shelf during an Hitless Software Migration. If the value of the attribute is ***moveToMigrationShelf***, the card associated to the *Lp* will move to the Migration Shelf during an Hitless Software Migration.
Mib	LogicalProcessor
Values	stayInServiceShelf moveToMigrationShelf
Default	stayInServiceShelf

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - LpG

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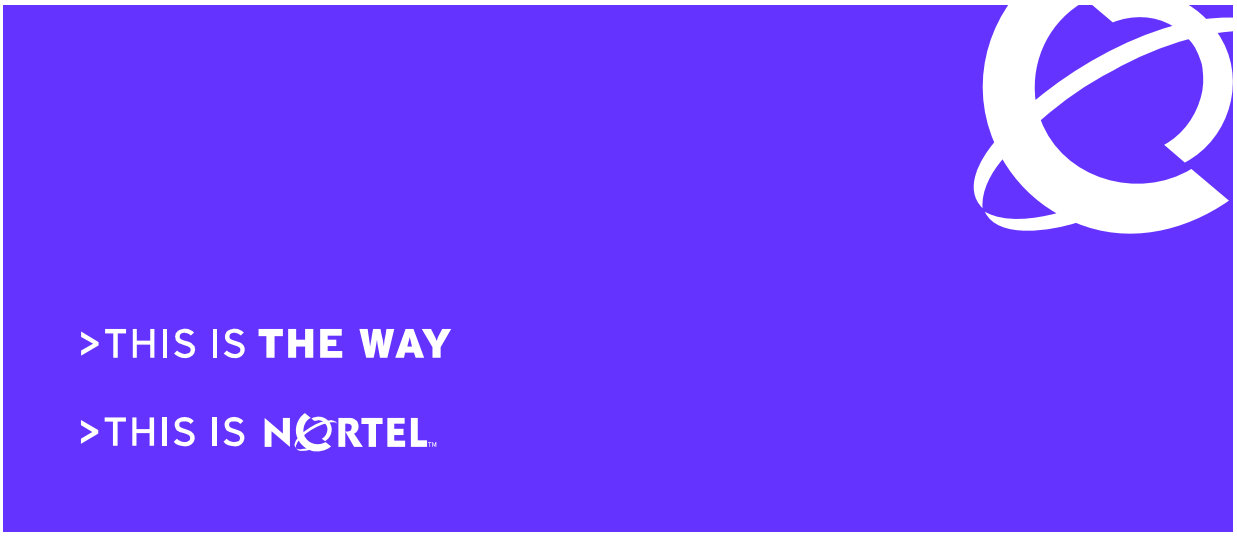

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - LpP

NN10600-060

Document status: Standard
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Type: NTP
Language type: U.S. English

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COMPONENT LpPair (LpP)

Instance	Integer Sequence (0..15; 0..15)
Scope	Application
Description	*LpPair/m.n* This component represents a pair of LPs, *LP/m* and *LP/n*. There are no real instances of this component which you can issue commands against. It is solely for the purpose of alarm handling for other components which can link to two LPs (for example, via a *LineAutomaticProtectionSwitching*, or *Laps*, component). These other components are typically spared across the two LPs, which means that the LP hierarchical clear alarms alone are not sufficient to properly clear certain alarms; use of the *LpPair* component does provide this. Thus, the name of an *LpPair* can appear in the related component name field of an alarm so that subsequent alarm clearing can be handled appropriately. It can also appear in the component name field of an alarm, for a hierarchical clear against the pair of LPs and for components which are spared across the two LPs. The LP alarms and their fields remain unchanged.
Mib	LogicalProcessor
Common Verbs	Help List Display

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Components Reference - LpP

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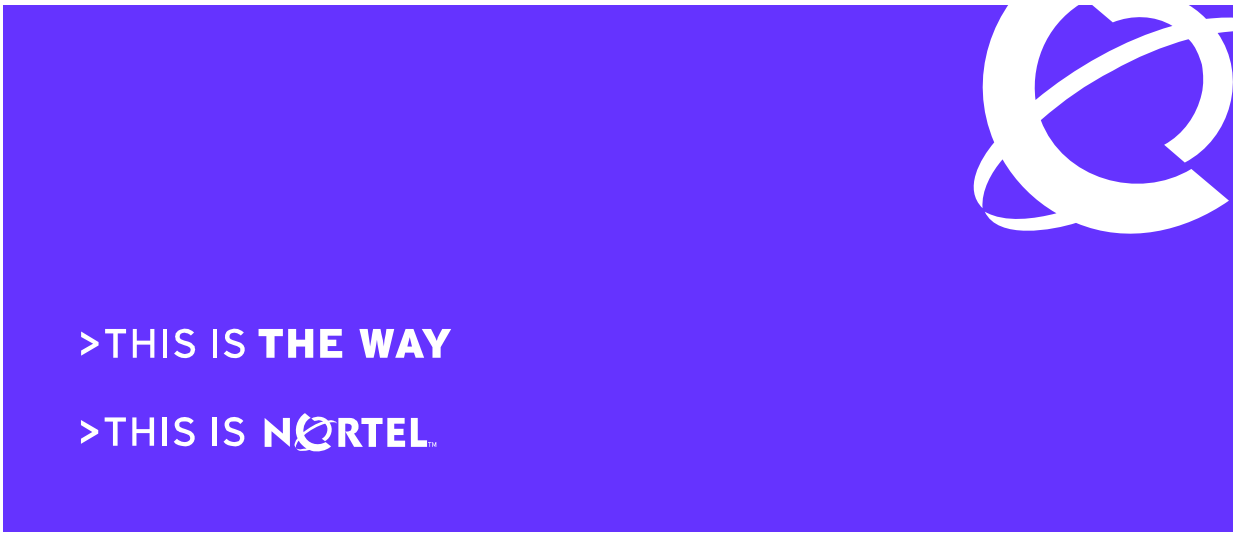

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Lp

NN10600-060

Document status: Standard
Document issue: 7.2S1
Document date: March 2006
Product release: PCR7.2 and up
Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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COMPONENT LogicalProcessor (Lp)

Instance	Decimal (0..15)
Groups	GROUP Lp Provisioned (Prov) GROUP Lp CustomerIdentifierData (CidData) GROUP Lp OsiState (State) GROUP Lp Operational (Oper) GROUP Lp Utilization (Util) GROUP Lp Capacity (Cap)

COLLECTED STATS LogicalProcessor

Scope	Device
Description	*LogicalProcessor/n* The *LogicalProcessor* (*Lp*) component is a root component. One *Lp* component is created for each Logical Processor. An *Lp* may be configured to run on up to two cards; one as the main card, and the other as the spare card. When two cards are configured, the *Lp* runs on one card, and waits for that card to fail before starting to run on the other card.
Mib	LogicalProcessor
Subcomponents	COMPONENT Lp Engineering (Eng)
Opt. Subcomp.	COMPONENT Lp BridgedSonet (Bso) COMPONENT Lp Enet COMPONENT Lp Fddi (Fi) COMPONENT Lp DS3 COMPONENT Lp E3 COMPONENT Lp DS1 COMPONENT Lp E1 COMPONENT Lp V35 COMPONENT Lp X21 COMPONENT Lp TokenRing (Tr) COMPONENT Lp Sonet COMPONENT Lp Sdh COMPONENT Lp JT2 COMPONENT Lp Hssi COMPONENT Lp IlsForwarder (IlsFwdr)

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COMPONENT Lp InverseMultiplexerAtm (Ima)
COMPONENT Lp VoiceServicesProcessor (Vsp)
COMPONENT Lp Ethernet100BaseT (Eth100)
COMPONENT Lp OamEthernet (OamEnet)
COMPONENT Lp EDS1
COMPONENT Lp EE1
COMPONENT Lp PCUServicesProcessor (Pcusp)
COMPONENT Lp MultiLinkFrameRelay (Mlfr)
COMPONENT Lp NetworkProcessingUnit (Npu)
COMPONENT Lp Sets
COMPONENT Lp Ethernet (Eth)
COMPONENT Lp LinkAggregation (Lag)

Dyn. Subcomp. COMPONENT Lp AdjunctProcessor (Ap)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

VERB RESET Lp

Impact Service

Description

Reset Lp/n
Reset -force Lp/0

This command is used to reset the processor card on which this *LP* is currently running. Resetting a processor card implies: (1) resetting the hardware (as if the card had just been powered on), (2) performing the card's self-tests, and (3) reloading the software.

A *Reset* command issued against the CP (*Lp/0*) causes it to reload from the committed provisioning data file.

A *Reset* command issued against an FP causes it to reload the same software it was already running. This is the software load that is derived from the provisioning data in the CP's current view (this may or may not be the committed view).

Options:
-force
This option causes the reset to occur against lp/0 even if the current or edit view differs from the committed view, or if the standby OAM Ethernet port is not available, or if the standby CP is currently loading the committed provisioning data file. Use of this option would cause the loss of data in any unsaved view, and any FPs running uncommitted data would restart. On any lp other than lp/0, -force has no meaning.

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VERB RESTART Lp

Impact	Service
Description	*Restart Lp/n* *Restart -force Lp/0* This command is used to restart the processor card on which this *LP* is currently running. Restarting a processor card causes the software to reinitialize itself and behave as if it had just been reloaded. A *Restart* command issued against the CP (*Lp/0*) causes it to restart using the committed provisioning data. **Options:** *-force* This option causes the restart to occur against lp/0 even if the current or edit view differs from the committed view, or if the standby OAM Ethernet port is not available, or if the standby CP is currently loading the committed provisioning data file. Use of this option would cause the loss of data in any unsaved view, and any FPs running uncommitted data would restart. On any lp other than lp/0, -force has no meaning.

VERB RELOADcp (Reload) Lp

Impact	Service
Description	*ReloadCp -force -filename(<name>) Lp/0* This command is used to force the CP to reload using a specified provisioning file instead of using the committed provisioning file. The command has a parameter that specifies the name of the file to use.

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VERB SWITCHover Lp

Impact	Service
Description	*Switchover Lp/n* *Switchover -time(yyyy-mm-dd hh:mm) Lp/n* *Switchover -cancel Lp/n* *Switchover -force Lp/0* This command forces a sparing operation to occur. The *spareCard* becomes active if the *mainCard* is currently active or, alternatively, the *mainCard* becomes active if the *spareCard* is currently active. **Options:** *-time* This option is used to specify the time when a scheduled switchover is to take effect. *-cancel* *This option is used to cancel a scheduled switchover.* *-force* This option causes the switchover to occur even if the current or edit view differs from the committed view. Use of this option would cause the loss of data in any unsaved view. In addition, any FPs running uncommitted data would restart.

GROUP Lp Provisioned (Prov)

Properties	Provisioned
Description	This Group contains the provisionable attributes for the *LP* component.
Mib	LogicalProcessor

ATTRIBUTE Lp mainCard (main)

Access	Read and write
Description	This is the preferred processor card on which this *LP* should be assigned.
Mib	LogicalProcessor
Values	Link (Service, configuredLPs)
Default	No default

ATTRIBUTE Lp spareCard (spare)

Access	Read and write
Description	This is the spare processor card on which this *LP* should be assigned.

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Mib	LogicalProcessor
Values	Link (Service, configuredLPs)
Default	No default

ATTRIBUTE Lp logicalProcessorType (lpt)

Access	Read and write
Description	This is the Logical Processor Type (LPT) that determines which software this *LP* will run.
Mib	LogicalProcessor
Values	Link (Service, logicalProcessors)
Default	No default

ATTRIBUTE Lp oneForNSparingBehavior

Access	Read and write
Description	This attribute specifies the sparing behavior in a 1 for N sparing configuration when a main card fails. If the attribute value is ***delayedSwitchOver***, the failure of a main card to recover as the active card will initiate a switchover to the spare card. This sparing behavior gives the failed main card a chance to recover and hence allows the main cards to remain protected by the spare card. If the attribute value is ***immediateSwitchOver***, the failure of a main card initiates an immediate switchover to the spare card. This sparing behavior provides greater emphasis on reducing outage time for a failed main card at the expense of leaving the other main cards unprotected.
Mib	LogicalProcessor
Values	delayedSwitchOver (delayedSO) immediateSwitchOver (immediateSO)
Default	delayedSwitchOver

ATTRIBUTE Lp linkToApplications

Access	Read only
Description	This attribute allows applications to link themselves directly to the *LP* component.
Mib	LogicalProcessor
List of	Link
List Size	2016
Default	No default

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GROUP Lp CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — LogicalProcessor

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — LogicalProcessor

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

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The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — LogicalProcessor

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — LogicalProcessor

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

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ATTRIBUTE Lp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service

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but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib LogicalProcessor

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default notSet

ATTRIBUTE Lp unknownStatus (osiUnknw)

Access Read only

Description This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib LogicalProcessor

Values
false
true

Default false

GROUP Lp Operational (Oper)

Properties Operational

Description
This Group contains the operational attributes for the LP component.

Mib LogicalProcessor

ATTRIBUTE Lp activeCard

Access Read only

Description
This attribute indicates on which card this LP is currently running (if any).

Mib LogicalProcessor

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Values	The name of the component
Default	No default

ATTRIBUTE Lp mainCardStatus

Access	Read only
Description	This attribute specifies the status of this LP's main card. The following values have been defined: ***notProvisioned***— No main card has been provisioned. ***notAvailable***— The main card is not available. ***available***— The main card is available (running as standby). ***active***— The main card is running as active.
Mib	LogicalProcessor
Values	notProvisioned notAvailable available active
Default	No default

ATTRIBUTE Lp spareCardStatus

Access	Read only
Description	This attribute specifies the status of this LP's spare card. The following values have been defined: ***notProvisioned***— No spare card has been provisioned. ***notAvailable***— The spare card is not available. ***alreadyInUse***— The spare card is already in use by another LP. ***available***— The spare card is available (running as standby). ***active***— The spare card is running as active.
Mib	LogicalProcessor
Values	notProvisioned notAvailable alreadyInUse available active
Default	No default

ATTRIBUTE Lp restartOnCpSwitch

Access	Read only
Description	This attribute indicates whether the *Lp* always restarts upon a CP switchover. The value is ***true*** if the *featureList* of the associated *Sw Lpt* component

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	contains a feature that does not support hitless CP switchover. The value is also ***true*** when the ***noHitlessCpSwitch*** feature is provisioned on the CP. A value of ***false*** does not guarantee “no restart”; dynamic conditions may still result in an FP restart when a CP switchover occurs.
Mib	LogicalProcessor
Values	false true
Default	No default

ATTRIBUTE Lp scheduledSwitchover

Access	Read only
Description	This attribute indicates the execution time of the scheduled switchover. When there is no switchover scheduled the time is equals to 0 (0000-00-00 00:00).
Mib	LogicalProcessor
Values	Time (DHM)
Default	No default

GROUP Lp Utilization (Util)

Properties	Operational
Description	This group contains the operational attributes that specify the processor’s utilization levels. When this group exists for an LP component, the attributes are representative of the active card.
Mib	LogicalProcessor

ATTRIBUTE Lp timeInterval

Access	Read only
Description	This attribute indicates the time period for which the average, minimum, and maximum utilization values are calculated. This attribute is reset to 0 every 15 minutes.
Mib	LogicalProcessor
Values	Decimal (0..15)
Units	minutes
Default	No default

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ATTRIBUTE Lp cpuUtil

Access	Read only
Description	This attribute indicates an approximation of the current processor utilization level (expressed as a percentage).
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp cpuUtilAvg

Access	Read only
Description	This attribute indicates an average processor utilization level over the specified time period, *timeInterval*. This average is calculated based on one minute CPU utilization averages.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp cpuUtilAvgMin

Access	Read only
Description	This attribute indicates the minimum processor utilization level over a specified time period, *timeInterval*. This is based on one minute CPU utilization averages.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp cpuUtilAvgMax

Access	Read only
Description	This attribute indicates the maximum processor utilization level over a specified time period, *timeInterval*. This is based on one minute CPU utilization averages.

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Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp sharedMsgBlockUsage

Access	Read only
Description	This attribute indicates the processor's current shared message block memory utilization.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp sharedMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this average memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp sharedMsgBlockUsageAvgMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this minimum memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)

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Units	kbyte
Default	No default

ATTRIBUTE Lp sharedMsgBlockUsageAvgMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this maximum memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp localMsgBlockUsage

Access	Read only
Description	This attribute indicates the processor's current memory utilization of message blocks which are used for local messaging on the card.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp localMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this average memory utilization is reset to the current usage, *localMsgBlockUsage*.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

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ATTRIBUTE Lp localMsgBlockUsageMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is updated at 15 second intervals. At the start of each *timeInterval*, this minimum memory utilization is reset to the current usage, *localMsgBlockUsage*.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp localMsgBlockUsageMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is updated at 15 second intervals. At the start of each *timeInterval*, this maximum memory utilization is reset to the current usage, *localMsgBlockUsage*.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp memoryUsage

Access	Read only
Description	This attribute indicates the processor's current memory utilization for each type of memory.
Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

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ATTRIBUTE Lp memoryUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Lp memoryUsageAvgMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Lp memoryUsageAvgMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)

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Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

GROUP Lp Capacity (Cap)

Properties	Operational
Description	This group contains the operational attributes that specify the processor's capacity levels. When this group exists for an *LP* component, the attributes are representative of the active *Card*.
Mib	LogicalProcessor

ATTRIBUTE Lp sharedMsgBlockCapacity

Access	Read only
Description	This attribute indicates the processor card's shared message block memory capacity.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp localMsgBlockCapacity

Access	Read only
Description	This attribute indicates the processor card's local message block memory capacity. These message blocks are used for local messaging on the card.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp memoryCapacity

Access	Read only
Description	This attribute indicates the processor card's memory capacity for each type of memory.

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Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

COLLECTED STATS LogicalProcessor

Description	The statistics record generated by the LogicalProcessor component.

ATTRIBUTE Lp cardNumber (ca)

Description	This attribute is the card number associated to this statistical information.
Values	Decimal (0..15)

ATTRIBUTE Lp cardStatus

Description	This attribute indicates whether the card is running as ***active*** or ***standby***.
Values	standby active

ATTRIBUTE Lp cpuUtilAvg

Description	This attribute indicates an average processor utilization level over a the specified collection interval. This average is calculated based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp cpuUtilAvgMin

Description	This attribute indicates the minimum processor utilization level over a specified collection interval. This is calculated based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp cpuUtilAvgMax

Description	This attribute indicates the maximum processor utilization level over a specified collection interval. This is based on one minute CPU utilization averages.

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Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp memoryCapacity

Description	This attribute indicates the processor's memory capacity for each type of memory.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvg

Description	This attribute indicates the processor's average memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvgMin

Description	This attribute indicates the processor's minimum memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvgMax

Description	This attribute indicates the processor's maximum memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

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ATTRIBUTE Lp sharedMsgBlockCapacity

Description	This attribute indicates the processor's shared message block memory capacity.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvg

Description	This attribute indicates the processor's average shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvgMin

Description	This attribute indicates the processor's minimum shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvgMax

Description	This attribute indicates the processor's maximum shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockCapacity

Description	This attribute indicates the processor's local message block memory capacity. These message blocks are used for local messaging on the card.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageAvg

Description	This attribute indicates the processor's average memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

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ATTRIBUTE Lp localMsgBlockUsageMin

Description	This attribute indicates the processor's minimum memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageMax

Description	This attribute indicates the processor's maximum memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval.
Values	Decimal (0..2147483647)
Units	kbyte

COMPONENT Lp BridgedSonet (Bso)

Instance	Decimal (0..15)
Groups	GROUP Lp Bso CustomerIdentifierData (CidData) GROUP Lp Bso Provisioned (Prov) GROUP Lp Bso OsiState (State)
Scope	Device
Description	*Lp/n BridgedSonet/n* This component controls a bridge on a SONET card that is connected to the line hardware of the mate SONET card.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Bso CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp Bso customerIdentifier (cid)

Access	Read and write

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Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Bso Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for a *BridgedSonet* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Bso portBridgeGroupLink (pbgl)

Access	Read and write
Description	This attribute specifies the name of the *Pbg* component. The specified *Pbg* component provides port bridging for a SONET line specified by *Pbg/n workingLine* and this *BridgedSonet* component.
Mib	LogicalProcessor
Values	Link
Default	No default

GROUP Lp Bso OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	LogicalProcessor

ATTRIBUTE Lp Bso adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Bso operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Lp Bso usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Bso availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

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The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — LogicalProcessor

Set of —
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Lp Bso proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform

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its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — LogicalProcessor

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp Bso controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Bso alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Bso standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Bso unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default: false

COMPONENT Lp Enet

Instance: Decimal (0..5)

Groups:
GROUP Lp Enet CustomerIdentifierData (CidData)
GROUP Lp Enet IfEntryProv (IfEntry)
GROUP Lp Enet Provisioned (Prov)
GROUP Lp Enet AdminInfo (AdminInfo)

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GROUP Lp Enet OsiState (State)
GROUP Lp Enet OperationalStatus (OperStatus)
GROUP Lp Enet Operational (Oper)
GROUP Lp Enet Statistics (Stats)

Scope: Device

Description: *Lp/n Ethernet/n*
This component defines an instance of an *Ethernet* station attached to a bus. One instance of this component will be created for each hardware port. Each station will be provisioned prior to operating on the bus.

Mib: Enet

Subcomponents:
COMPONENT Lp Enet LanTest (Lt)
COMPONENT Lp Enet Test

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Enet CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: Enet

ATTRIBUTE Lp Enet customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

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Mib	Enet
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Enet IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Enet

ATTRIBUTE Lp Enet ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Enet
Values	up down testing
Default	up

ATTRIBUTE Lp Enet ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Enet
Values	Decimal (1..65535)
Default	No default

GROUP Lp Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the *Ethernet* component.
Mib	Enet

ATTRIBUTE Lp Enet heartbeatPacket

Access	Read and write

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Description	The *heartbeat* packet feature is used to select whether or not the station will generate a *heartbeat* packet. If enabled, the station will generate one *heartbeat* packet every second. If disabled, the station will not generate any *heartbeat* packets.
Mib	Enet
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp Enet applicationFramerName (framer)

Access	Read and write
Criticality	Process
Description	This attribute contains the component name of a *Framer* which is associated with the *Ethernet* component. This link is used by the component administration system (CAS) to identify which card the application component (associated with the *Framer* component) is to be created.
Mib	Enet
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Enet AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Enet

ATTRIBUTE Lp Enet vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Enet
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Enet commentText

Access	Read and write

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Description	Any miscellaneous text about the facility.
Mib	Enet
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Enet includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	Enet
Values	no yes
Default	no

GROUP Lp Enet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Enet

ATTRIBUTE Lp Enet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Enet
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Enet operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Enet
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Enet usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Enet
Values	idle active (activ) busy
Default	idle

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GROUP Lp Enet OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Enet

ATTRIBUTE Lp Enet snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Enet
Values	up down testing
Default	up

GROUP Lp Enet Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ethernet* component.
Mib	Enet

ATTRIBUTE Lp Enet macAddress

Access	Read only
Description	The medium access controller (MAC) address is an address that is only recognized by one station on the network The value of this attribute will be assigned by the system. MAC address is displayed in canonical format.
Mib	Enet
Values	String (6, Dashed Hex)
Default	No default

GROUP Lp Enet Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes for the *Ethernet* component.
Mib	Enet

ATTRIBUTE Lp Enet alignmentErrors

Access	Read only

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Description	The *alignmentErrors* counter indicates the number of frames received which were not an integral number of octets in length. Frames will be checked for *alignmentErrors* before they are checked for Frame Check Sequence (FCS) errors. If there is an alignment error, the error will only be counted here and not in *fcsErrors*. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet fcsErrors

Access	Read only
Description	The *fcsErrors*, Frame Check Sequence (FCS) error, counter indicates the number of frames received which were an integral number of octets in length and did not pass the FCS check. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet singleCollisionFrames

Access	Read only
Description	The *singleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced exactly one collision. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet multipleCollisionFrames

Access	Read only
Description	The *multipleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced more than one collision. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Lp Enet sqeTestErrors

Access	Read only
Description	The *sqeTestErrors*, Signal Quality Error (SQE) Test errors, counter indicates the number of times the “SQE Test Error” message has been generated for the station. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet deferredTransmissions

Access	Read only
Description	The *deferredTransmissions* counter indicates the number of frames which experienced a transmission delay because the medium was busy. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet lateCollisions

Access	Read only
Description	The *lateCollisions* counter indicates the number of times a collision was detected later than 512 bit-times into the transmission of a packet. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet excessiveCollisions

Access	Read only
Description	The *excessiveCollisions* counter indicates the number of frames which failed to get transmitted due to excessive collisions. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Lp Enet macTransmitErrors

Access	Read only
Description	The Medium Access Controller (MAC) transmit error counter indicates the number of times that a transmission failed due to internal MAC transmit errors. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet carrierSenseErrors

Access	Read only
Description	The carrier sense error counter indicates the number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet frameTooLongs

Access	Read only
Description	The frame too long counter indicates the number of frames received which exceeded the maximum frame size. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet macReceiveErrors

Access	Read only
Description	The Medium Access Controller (MAC) receive error counter indicates the number of times a receive failed due to internal MAC receive errors. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

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COMPONENT Lp Enet LanTest (Lt)

Groups	GROUP Lp Enet Lt TestOp (Top)
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	Enet
Dyn. Subcomp.	COMPONENT Lp Enet Lt FrameCompare (FrmCmp) COMPONENT Lp Enet Lt FrameCopy (FrmCpy) COMPONENT Lp Enet Lt PortConfig (PrtCfg) COMPONENT Lp Enet Lt FrameBuild (Fb) COMPONENT Lp Enet Lt Control (Cntl)
Common Verbs	Help List Display

VERB Start Lp Enet Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp Enet Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Enet Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp Enet Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

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GROUP Lp Enet Lt TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt FrameCompare (FrmCmp)

Groups	GROUP Lp Enet Lt FrmCmp TestOp (Top)
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

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ATTRIBUTE Lp Enet Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt FrameCopy (FrmCpy)

Groups	GROUP Lp Enet Lt FrmCpy TestOp (Top)
Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)

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Default	No default

COMPONENT Lp Enet Lt PortConfig (PrtCfg)

Groups	GROUP Lp Enet Lt PrtCfg TestOp (Top)
Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp Enet Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt FrameBuild (Fb)

Groups	GROUP Lp Enet Lt Fb TestOp (Top)
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the

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	LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	Enet
Dyn. Subcomp.	COMPONENT Lp Enet Lt Fb TransmitInfo (TxInfo) COMPONENT Lp Enet Lt Fb FddiMac (MacFddi) COMPONENT Lp Enet Lt Fb EthernetMac (MacEnet) COMPONENT Lp Enet Lt Fb TokenRingMac (MacTr) COMPONENT Lp Enet Lt Fb DataField (Data) COMPONENT Lp Enet Lt Fb IpHeader (IpH) COMPONENT Lp Enet Lt Fb LlcHeader (Llch) COMPONENT Lp Enet Lt Fb AppleHeader (AppleH) COMPONENT Lp Enet Lt Fb IpxHeader (IpxH)
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb **TransmitInfo (TxInfo)**

Groups	GROUP Lp Enet Lt Fb TxInfo TestOp (Top)

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Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb TxInfo **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb TxInfo **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb **FddiMac (MacFddi)**

Groups	GROUP Lp Enet Lt Fb MacFddi TestOp (Top)
Scope	Device

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Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb MacFddi **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb MacFddi **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb **EthernetMac (MacEnet)**

Groups	GROUP Lp Enet Lt Fb MacEnet TestOp (Top)
Scope	Device

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Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb MacEnet **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb MacEnet **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb **TokenRingMac (MacTr)**

Groups	GROUP Lp Enet Lt Fb MacTr TestOp (Top)
Scope	Device

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Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb MacTr **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb MacTr **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb **DataField (Data)**

Groups	GROUP Lp Enet Lt Fb Data TestOp (Top)
Scope	Device
Description	This component adds a data field to frame.
Mib	Enet
Common Verbs	Help List Display

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VERB Get Lp Enet Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb Data **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb Data **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb **IpHeader (IpH)**

Groups	GROUP Lp Enet Lt Fb IpH TestOp (Top)
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

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VERB Tlist Lp Enet Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb IpH **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb IpH **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb **LlcHeader (Llch)**

Groups	GROUP Lp Enet Lt Fb Llch TestOp (Top)
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp Enet Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb Llch **TestOp (Top)**

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Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb LIch tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb AppleHeader (AppleH)

Groups	GROUP Lp Enet Lt Fb AppleH TestOp (Top)
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb AppleH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

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Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb IpxHeader (IpxH)

Groups	GROUP Lp Enet Lt Fb IpxH TestOp (Top)
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Control (Cntl)

Groups	GROUP Lp Enet Lt Cntl TestOp (Top)
Scope	Device

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Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Cntl **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Cntl **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet **Test**

Groups	GROUP Lp Enet Test PortTestOp (PTO) GROUP Lp Enet Test Results (Results)
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or*

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Lp/n IlsForwarder/n Test
The Test component is used to do StartUp port test for LAN cards.

Mib	Enet
Common Verbs	Help List Display

VERB Start **Lp Enet Test**

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop **Lp Enet Test**

Impact	Service
Description	This verb is used to stop a test.

VERB Reset **Lp Enet Test**

Impact	Service
Description	This verb is used to reset the Test component.

GROUP **Lp Enet Test** **PortTestOp (PTO)**

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	Enet

ATTRIBUTE **Lp Enet Test** **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	Enet
Values	onCard normal wrapA

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	wrapB thruA thruB extWrapA extWrapB extThruA extThruB extWrapAB extWrapBA
Default	No default

ATTRIBUTE Lp Enet Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes.
Mib	Enet
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Enet Test duration (duration)

Access	Read and write
Description	This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.
Mib	Enet
Values	Decimal (1..30240)
Units	minutes
Default	1

GROUP Lp Enet Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the Test component.
Mib	Enet

ATTRIBUTE Lp Enet Test elapsedTime

Access	Read only
Description	This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.

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Mib	Enet
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Enet Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	Enet
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Enet Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	Enet
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning
Default	neverStarted

ATTRIBUTE Lp Enet Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Enet Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.

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Mib	Enet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Enet Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Enet Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Enet Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

COMPONENT Lp Fddi (Fi)

Instance	Decimal (0)
Groups	GROUP Lp Fi CustomerIdentifierData (CidData) GROUP Lp Fi IfEntryProv (IfEntry) GROUP Lp Fi SmtProvisioned (SmtProv) GROUP Lp Fi MacProvisioned (MacProv) GROUP Lp Fi AdminInfo (AdminInfo) GROUP Lp Fi OsiState (State)

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GROUP Lp Fi OperationalStatus (OperStatus)
GROUP Lp Fi SmtOperational (SmtOper)
GROUP Lp Fi MacOperational (MacOper)
GROUP Lp Fi MacCOperational (MacCOper)
GROUP Lp Fi NcMacOperational (NcMacOper)

Scope: Device

Description: *Lp/n Fddi/n*
This component defines an instance of a FDDI station attached to a ring. One instance of this component must be created for each hardware interface. Each station must be provisioned prior to inserting into the ring.

Mib: LanDrivers

Subcomponents:
COMPONENT Lp Fi LanTest (Lt)
COMPONENT Lp Fi PhysicalLayer (Phy)
COMPONENT Lp Fi Test

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Fi CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: LanDrivers

ATTRIBUTE Lp Fi customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component.

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	Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	LanDrivers
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Fi IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE Lp Fi ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE Lp Fi ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP Lp Fi SmtProvisioned (SmtProv)

Properties	Provisioned
Description	This group contains the provisionable Station Management (SMT) attributes of the *Fddi* component.
Mib	LanDrivers

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ATTRIBUTE Lp Fi userData

Access	Read and write
Description	The user data field is used to identify the FDDI interface on the ring. The user data contains a message with a maximum of 32 characters.
Mib	LanDrivers
Values	String (0..32, ASCII)
Default	FDDI

ATTRIBUTE Lp Fi acceptAa

Access	Read and write
Description	The *acceptAa* attribute defines the station type A to station type A connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Fi acceptBb

Access	Read and write
Description	The *acceptBb* attribute defines the station type B to station type B connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Fi acceptAs

Access	Read and write
Description	The *acceptAs* attribute defines the station type A to station type S connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

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ATTRIBUTE Lp Fi acceptBs

Access	Read and write
Description	The *acceptBs* attribute defines the station type B to station type S connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Fi acceptAm

Access	Read and write
Description	The *acceptAm* attribute defines the station type A to station type M connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp Fi acceptBm

Access	Read and write
Description	The *acceptBm* attribute defines the station type B to station type M connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp Fi useThruBa

Access	Read and write
Description	The *useThruBa* attribute is used to configure the requested path of the associated station. If ***enabled***, only the secondary preferred path is permitted. If ***disabled***, only the primary preferred path is permitted.
Mib	LanDrivers
Values	enabled disabled

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Default	disabled

ATTRIBUTE Lp Fi neighborNotifyInterval

Access	Read and write
Description	The *neighborNotifyInterval* attribute contains the amount of time, expressed in seconds, between neighbor notification frames.
Mib	LanDrivers
Values	Decimal (2..30)
Units	seconds
Default	30

ATTRIBUTE Lp Fi statusReportPolicy

Access	Read and write
Description	The *statusReportPolicy* attribute indicates whether or not the station will generate status reporting frames for its implemented events and conditions. If ***true***, the station will generate the status frames. If ***false***, the station will not generate the status frames.
Mib	LanDrivers
Values	true false
Default	true

ATTRIBUTE Lp Fi traceMaxExpirationTimer (traceExp)

Access	Read and write
Description	The *traceMaxExpirationTimer* attribute is used to configure the maximum propagation time, expressed in milliseconds, for a trace on a FDDI topology. This value places a lower bound on the detection time for an unrecovered ring.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	msec
Default	7000

ATTRIBUTE Lp Fi applicationFramerName (framer)

Access	Read and write
Criticality	Process
Description	This attribute contains the component name of a *Framer* which is associated with the *Fddi* component. This defines which *LanApplication/n Framer* will be using this *Fddi* interface.

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Mib	LanDrivers
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Fi MacProvisioned (MacProv)

Properties	Provisioned
Description	This group contains the provisionable MAC attributes of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi tokenRequestTimer (tReq)

Access	Read and write
Description	The *tokenRequestTimer* value contains the token request value assigned to the associated medium access controller (MAC). Warning: Changes to this attribute can have adverse effects on the performance of the FDDI ring. Therefore it is recommended that this parameter only be modified by personnel with a thorough understanding of the consequences that may result from changes to this attribute.
Mib	LanDrivers
Values	Decimal (20480..1340000000)
Units	nsec
Default	165290000

ATTRIBUTE Lp Fi tokenMaxTimer (tMax)

Access	Read and write
Description	The *tokenMaxTimer* value is the maximum timer value the negotiated token rotation time may assume. Warning: Changes to this attribute can have adverse effects on the performance of the FDDI ring. Therefore it is recommended that this parameter only be modified by personnel with a thorough understanding of the consequences that may result from changes to this attribute.
Mib	LanDrivers
Values	Decimal (40960..1342200000)
Units	nsec
Default	167770000

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ATTRIBUTE Lp Fi validTransmissionTimer (tvx)

Access	Read and write
Description	The *validTransmissionTimer* (Tvx) value specifies the amount of time required for a valid transmission. The station must receive a valid transmission once every Tvx. Warning: Changes to this attribute can have adverse effects on the performance of the FDDI ring. Therefore it is recommended that this parameter only be modified by personnel with a thorough understanding of the consequences that may result from changes to this attribute.
Mib	LanDrivers
Values	Decimal (40960..1342200000)
Units	nsec
Default	2621400

GROUP Lp Fi AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LanDrivers

ATTRIBUTE Lp Fi vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LanDrivers
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Fi commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LanDrivers
Values	String (0..60, ASCII)
Default	No default

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ATTRIBUTE Lp Fi includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LanDrivers
Values	no yes
Default	no

GROUP Lp Fi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE Lp Fi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

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Default	unlocked

ATTRIBUTE Lp Fi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Fi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

GROUP Lp Fi OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE Lp Fi snmpOperStatus

Access	Read only

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Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP Lp Fi SmtOperational (SmtOper)

Properties	Operational
Description	This group contains the operational station management (SMT) attributes of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi version

Access	Read only
Description	The *version* attribute contains a copy of the currently supported version numbers of the management information base (MIB) and the station management (SMT).
Mib	LanDrivers
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Lp Fi bypassPresent

Access	Read only
Description	The *bypassPresent* attribute indicates whether the optical bypass switch is present on its AB port pair. If ***true***, the optical bypass switch is present. If ***false***, it is not present.
Mib	LanDrivers
Values	true false
Default	No default

ATTRIBUTE Lp Fi ecmState

Access	Read only
Description	The *ecmState*, Entity Coordination Manager (ECM), state indicates the current state of the ECM state machine.

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Mib	LanDrivers
Values	out in trace leave pathTest insert check deinsert
Default	No default

ATTRIBUTE Lp Fi cfState

Access	Read only
Description	The *cfState* attribute indicates the current state of the configuration management (CFM) state machine.
Mib	LanDrivers
Values	isolated localA localB localAB localS wrapA wrapB wrapAB wrapS cWrapA cWrapB cWrapS thru
Default	No default

GROUP Lp Fi MacOperational (MacOper)

Properties	Operational
Description	This group contains the operational Medium Access Controller (MAC) attributes of the of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi ringLatency

Access	Read only
Description	The *ringLatency* attribute contains the measured ring latency of the ring the station is attached to.
Mib	LanDrivers

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Values	Decimal (1280..1342000000)
Units	nsec
Default	No default

ATTRIBUTE Lp Fi macAddress

Access	Read only
Description	The medium access controller (MAC) address is an address that is recognized by only one station on the attached ring. The value of this attribute is assigned by the system. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncMacAddress*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi upstreamNeighbor

Access	Read only
Description	The *upstreamNeighbor* attribute contains the MAC address associated with the upstream neighbor station on the ring. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncUpstreamNeighbor*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi downstreamNeighbor

Access	Read only
Description	The *downstreamNeighbor* attribute contains the MAC address associated with the downstream station on the ring. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncDownstreamNeighbor*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi oldUpstreamNeighbor

Access	Read only
Description	*The oldUpstreamNeighbor* attribute contains the previous value of the MAC address associated with the upstream station on the ring. This

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	attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncOldUpstreamNeighbor*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi oldDownstreamNeighbor

Access	Read only
Description	The *oldDownstreamNeighbor* attribute contains the previous value of the MAC address associated with the downstream station on the ring. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncOldDownstreamNeighbor*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi dupAddressTest

Access	Read only
Description	The *dupAddressTest* attribute indicates the condition results of the duplicate address test. If ***notDone***, the test has not been executed. If ***pass***, the test has successfully executed. If ***fail***, the test has failed.
Mib	LanDrivers
Values	notDone pass fail
Default	No default

ATTRIBUTE Lp Fi tokenNegotiatedTimer (tNeg)

Access	Read only
Description	The *tokenNegotiatedTimer* specifies the negotiated token rotation time.
Mib	LanDrivers
Values	Decimal (80..1340000000)
Units	nsec
Default	167772000

ATTRIBUTE Lp Fi frameCounts

Access	Read only

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Description	The *frameCounts* attribute contains the number of frames that have been received by the station. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi copiedCounts

Access	Read only
Description	The *copiedCounts* attribute contains the number of frames successfully copied into this station's receive buffers, not including MAC control frames. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi transmitCounts

Access	Read only
Description	The *transmitCounts* attribute contains the number of frames transmitted by this station, not including MAC control frames. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi errorCounts

Access	Read only
Description	The *errorCounts* attribute contains the number of error frames first detected by this station. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi lostCounts

Access	Read only
Description	The *lostCounts* attribute contains the number of instances that the station has detected a format error during frame reception such that the frame

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	was stripped. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Fi rmtState

Access	Read only
Description	The *rmtState*, ring management (RMT), state indicates the current state of the RMT state machine.
Mib	LanDrivers
Values	isolated nonOp ringOp detect nonOpDup ringOpDup directed trace
Default	No default

ATTRIBUTE Lp Fi frameErrorFlag

Access	Read only
Description	The *frameErrorFlag* attribute indicates the MAC frame error condition status. If ***true***, a MAC frame error is present. If ***false***, a MAC frame error condition is not present.
Mib	LanDrivers
Values	true false
Default	No default

GROUP Lp Fi MacCOperational (MacCOper)

Properties	Operational
Description	This group contains the operational attributes of the Medium Access Controller (MAC) Counters Table of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi tokenCounts

Access	Read only

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Description	The *tokenCounts* attribute contains the number of times the station has received a token. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi tvxExpiredCounts

Access	Read only
Description	The *tvxExpiredCounts,* Transmission Valid eXpired (TVX), attribute contains the number of times that TVX timer has expired. This counter may increment as stations go on and off the ring. A rapidly increasing value may indicate a problem. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi notCopiedCounts

Access	Read only
Description	The *notCopiedCounts* attribute contains the number of times that the station has detected a frame addressed to itself but did not copy it due to local buffer congestion. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi lateCounts

Access	Read only
Description	The *lateCounts* attribute contains the number of token rotation time (TRT) expirations since the station was reset or a token was received. This counter may increment as stations go on and off the ring. A rapidly increasing value may indicate a problem. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp Fi ringOpCounts

Access	Read only
Description	The *ringOpCounts* attribute contains the number of times the station has made the transition from the ring not operational state to the ring operational state.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

GROUP Lp Fi NcMacOperational (NcMacOper)

Properties	Operational
Description	This group contains the operational attributes of the *Fddi* component related to non-canonical MAC addresses.
Mib	LanDrivers

ATTRIBUTE Lp Fi ncMacAddress

Access	Read only
Description	The medium access controller (MAC) address is an address that is recognized by only one station on the attached ring. The value of this attribute is assigned by the system. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *macAddress*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi ncUpstreamNeighbor

Access	Read only
Description	The *ncUpstreamNeighbor* attribute contains the MAC address associated with the upstream neighbor station on the ring. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *upstreamNeighbor.*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi ncDownstreamNeighbor

Access	Read only

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Description	The *ncDownstreamNeighbor* attribute contains the MAC address associated with the downstream station on the ring. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *downstreamNeighbor*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi ncOldUpstreamNeighbor

Access	Read only
Description	*The ncOldUpstreamNeighbor* attribute contains the previous value of the MAC address associated with the upstream station on the ring. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *oldUpstreamNeighbor*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi ncOldDownstreamNeighbor

Access	Read only
Description	The *ncOldDownstreamNeighbor* attribute contains the previous value of the MAC address associated with the downstream station on the ring. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *oldDownstreamNeighbor*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

COMPONENT Lp Fi LanTest (Lt)

Groups	GROUP Lp Fi Lt TestOp (Top)
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This

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includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.

Mib	LanDrivers
Dyn. Subcomp.	COMPONENT Lp Fi Lt FrameCompare (FrmCmp) COMPONENT Lp Fi Lt FrameCopy (FrmCpy) COMPONENT Lp Fi Lt PortConfig (PrtCfg) COMPONENT Lp Fi Lt FrameBuild (Fb) COMPONENT Lp Fi Lt Control (Cntl)
Common Verbs	Help List Display

VERB Start Lp Fi Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp Fi Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Fi Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp Fi Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp Fi Lt **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt **tData (td)**

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Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt FrameCompare (FrmCmp)

Groups	GROUP Lp Fi Lt FrmCmp TestOp (Top)
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

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COMPONENT Lp Fi Lt FrameCopy (FrmCpy)

Groups	GROUP Lp Fi Lt FrmCpy TestOp (Top)
Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt PortConfig (PrtCfg)

Groups	GROUP Lp Fi Lt PrtCfg TestOp (Top)
Scope	Device

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Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp Fi Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt PrtCfg **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt PrtCfg **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt **FrameBuild (Fb)**

Groups	GROUP Lp Fi Lt Fb TestOp (Top)
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the

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	LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	LanDrivers
Dyn. Subcomp.	COMPONENT Lp Fi Lt Fb TransmitInfo (TxInfo) COMPONENT Lp Fi Lt Fb FddiMac (MacFddi) COMPONENT Lp Fi Lt Fb EthernetMac (MacEnet) COMPONENT Lp Fi Lt Fb TokenRingMac (MacTr) COMPONENT Lp Fi Lt Fb DataField (Data) COMPONENT Lp Fi Lt Fb IpHeader (IpH) COMPONENT Lp Fi Lt Fb LlcHeader (Llch) COMPONENT Lp Fi Lt Fb AppleHeader (AppleH) COMPONENT Lp Fi Lt Fb IpxHeader (IpxH)
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb **TransmitInfo (TxInfo)**

Groups	GROUP Lp Fi Lt Fb TxInfo TestOp (Top)

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Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb TxInfo **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb TxInfo **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb **FddiMac (MacFddi)**

Groups	GROUP Lp Fi Lt Fb MacFddi TestOp (Top)
Scope	Device

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Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb MacFddi **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb MacFddi **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb **EthernetMac (MacEnet)**

Groups	GROUP Lp Fi Lt Fb MacEnet TestOp (Top)
Scope	Device

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Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb MacEnet **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb MacEnet **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb **TokenRingMac (MacTr)**

Groups	GROUP Lp Fi Lt Fb MacTr TestOp (Top)
Scope	Device

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Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb MacTr **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb MacTr **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb **DataField (Data)**

Groups	GROUP Lp Fi Lt Fb Data TestOp (Top)
Scope	Device
Description	This component adds a data field to frame.
Mib	LanDrivers
Common Verbs	Help List Display

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VERB Get Lp Fi Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb Data **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb Data **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb **IpHeader (IpH)**

Groups	GROUP Lp Fi Lt Fb IpH TestOp (Top)
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

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VERB Tlist Lp Fi Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb IpH **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb IpH **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb **LlcHeader (Llch)**

Groups	GROUP Lp Fi Lt Fb Llch TestOp (Top)
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp Fi Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb Llch **TestOp (Top)**

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Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb LIch tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb AppleHeader (AppleH)

Groups	GROUP Lp Fi Lt Fb AppleH TestOp (Top)
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb AppleH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

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Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb IpxHeader (IpxH)

Groups	GROUP Lp Fi Lt Fb IpxH TestOp (Top)
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Control (Cntl)

Groups	GROUP Lp Fi Lt Cntl TestOp (Top)
Scope	Device

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Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Cntl **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Cntl **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi **PhysicalLayer (Phy)**

Instance	a b
Groups	GROUP Lp Fi Phy Provisionable (Prov) GROUP Lp Fi Phy Operational (Oper)
Scope	Device
Description	*Lp/n Fddi/n Phy/x* This component defines an instance of a FDDI port attached to a ring. Two

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instances of this component must be provisioned for each hardware port. Each port must be provisioned prior to inserting into the ring.

Mib	LanDrivers
Common Verbs	Help List Display Add

GROUP Lp Fi Phy Provisionable (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Fddi *Phy* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi Phy lerCutoff

Access	Read and write
Description	The *lerCutoff* attribute contains the link error rate estimate at which a link connection will be broken. The values will range from 10**-4 to 10**-15. Only the absolute value of the base 10 log is reported.
Mib	LanDrivers
Values	Decimal (4..15)
Default	7

ATTRIBUTE Lp Fi Phy lerAlarm

Access	Read and write
Description	The *lerAlarm* attribute contains the link error rate estimate at which a link connection will generate an alarm. The values will range from 10**-4 to 10**-15. Only the absolute value of the base 10 log is reported
Mib	LanDrivers
Values	Decimal (4..15)
Default	8

ATTRIBUTE Lp Fi Phy linkErrorMonitor

Access	Read and write
Description	The *linkErrorMonitor* attribute is used to select the state of the link error monitor for the associated *Phy* component. If ***enabled***, the link error monitor will send the correct test status to the neighboring station. If ***disabled***, the link error monitor will always send a test passed status to the neighboring station.

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Mib	LanDrivers
Values	enabled disabled
Default	enabled

GROUP Lp Fi Phy Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the Fddi *Phy* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi Phy neighborType

Access	Read only
Description	This attribute indicates the neighbor type of the neighbor physical layer.
Mib	LanDrivers
Values	a b s m none
Default	No default

ATTRIBUTE Lp Fi Phy lctFailCounts

Access	Read only
Description	The *lctFailCounts* attribute contains the number of consecutive times the Link Confidence Test (LCT) has failed. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi Phy lerEstimate

Access	Read only
Description	The *lerEstimate* attribute contains a long term average link error rate. The values will range from 10**-4 to 10**-15. Only the absolute value of the base 10 log is reported
Mib	LanDrivers
Values	Decimal (4..15)
Default	No default

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ATTRIBUTE Lp Fi Phy lemRejectCounts

Access	Read only
Description	The *lemRejectCounts* attribute contains the number of times that a link has been rejected. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Fi Phy lemCounts

Access	Read only
Description	The *lemCounts* attribute contains the aggregate link error monitor error count. This counter is set to zero only on station initialization. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Fi Phy pcmState

Access	Read only
Description	The *pcmState*, physical connection manager (PCM), state indicates the current state of the PCM state machine.
Mib	LanDrivers
Values	off break trace connect next signal join verify active maint
Default	No default

ATTRIBUTE Lp Fi Phy lerFlag

Access	Read only
Description	The *lerFlag* attribute indicates when the link error rate estimate is less than or equal to the link error rate alarm. If ***true***, the value of the link error rate

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estimate is less than or equal to the link error rate alarm. If ***false***, the value of the link error rate estimate is greater than the link error rate alarm.

Mib	LanDrivers
Values	true false
Default	No default

ATTRIBUTE Lp Fi Phy signalState

Access	Read only
Description	The *signalState* attribute contains the current physical connection manager (PCM) signal bit being transmitted, or was transmitted, during the PCM signal state.
Mib	LanDrivers
Values	escape phyTypeL phyTypeH accept lctLengthL lctLengthH macAvail lctResult macLoop macOnPhy signalingDone
Default	No default

ATTRIBUTE Lp Fi Phy signalBitsRcvd

Access	Read only
Description	The *signalBitsRcvd* attribute contains the current physical connection manager (PCM) signal bits received.
Mib	LanDrivers
Set of	escape phyTypeL phyTypeH accept lctLengthL lctLengthH macAvail lctResult macLoop macOnPhy
Default	No default

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ATTRIBUTE Lp Fi Phy signalBitsTxmt

Access	Read only
Description	The *signalBitsTxmt* attribute contains the current physical connection manager (PCM) signal bits transmitted.
Mib	LanDrivers
Set of	escape phyTypeL phyTypeH accept lctLengthL lctLengthH macAvail lctResult macLoop macOnPhy
Default	No default

COMPONENT Lp Fi Test

Groups	GROUP Lp Fi Test PortTestOp (PTO) GROUP Lp Fi Test Results (Results)
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or* *Lp/n IlsForwarder/n Test* The Test component is used to do StartUp port test for LAN cards.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Start Lp Fi Test

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop Lp Fi Test

Impact	Service
Description	This verb is used to stop a test.

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VERB Reset Lp Fi Test

Impact	Service
Description	This verb is used to reset the Test component.

GROUP Lp Fi Test **PortTestOp (PTO)**

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	LanDrivers
Values	onCard normal wrapA wrapB thruA thruB extWrapA extWrapB extThruA extThruB extWrapAB extWrapBA
Default	No default

ATTRIBUTE Lp Fi Test **frmSize (size)**

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes.
Mib	LanDrivers
Values	Decimal (4..4096)
Units	bytes

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Default	1024

ATTRIBUTE Lp Fi Test duration (duration)

Access	Read and write
Description	This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.
Mib	LanDrivers
Values	Decimal (1..30240)
Units	minutes
Default	1

GROUP Lp Fi Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the Test component.
Mib	LanDrivers

ATTRIBUTE Lp Fi Test elapsedTime

Access	Read only
Description	This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Fi Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Fi Test causeOfTermination

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Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	LanDrivers
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning
Default	neverStarted

ATTRIBUTE Lp Fi Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Fi Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Fi Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Fi Test bitsRx

Access	Read only

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Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Fi Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp DS3

Instance	Decimal (0..11)
Groups	GROUP Lp DS3 Provisioned (Prov) GROUP Lp DS3 CustomerIdentifierData (CidData) GROUP Lp DS3 AdminInfo (AdminInfo) GROUP Lp DS3 IfEntryProv (IfEntry) GROUP Lp DS3 OperationalStatus (OperStatus) GROUP Lp DS3 OsiState (State) GROUP Lp DS3 Operational (Oper) GROUP Lp DS3 Statistics (Stats)
Scope	Application
Description	Lp/n DS3/n The *DS3* component controls a DS3 port on a DS3 Function Processor. For a 4pDS3 Frame Relay FP, the support of channelization is based on the provisioning of DS1Tribs. That is, if no DS1Trib is provisioned, the FP is considered not to be channelized; otherwise it is treated as a channelized FP. It should also be noted that a mixture of channelized and

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	non-channelized configurations on the same 4pDS3 Frame Relay FP is not allowed.
Mib	LogicalProcessor
Opt. Subcomp.	COMPONENT Lp DS3 AtmCell (Cell) COMPONENT Lp DS3 DS1 COMPONENT Lp DS3 InverseMultiplexerAtm (Ima)
Dyn. Subcomp.	COMPONENT Lp DS3 Test (Test) COMPONENT Lp DS3 CBit COMPONENT Lp DS3 Plcp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS3 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *DS3* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 cbitParity

Access	Read and write
Description	This attribute indicates if C-Bit parity has been turned ON or OFF. The *CBIT* component will appear under the *DS3* component when the *cbitParity* attribute is set to ***on***.
Mib	LogicalProcessor
Values	off on
Default	on

ATTRIBUTE Lp DS3 lineLength (length)

Access	Read and write
Description	This attribute defines the line length for equalization calculations for the DS3 line. The range is between 0 and 450 feet (1 metre = 3.28 feet). Note: There are currently only two ranges as far as the equalization calculation performed on the FP is concerned: 0 to 224ft and 225 to 450ft.
Mib	LogicalProcessor

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Values	Decimal (0..450)
Units	feet
Default	1

ATTRIBUTE Lp DS3 clockingSource

Access	Read and write
Description	This attribute defines the type of clocking source used for synchronizing the DS3 transmit clock: ***local*** means direct use of the local clock oscillator at its centre frequency; ***line*** means use of a signal phase-locked to the incoming DS3 line rate; ***module*** means the use of a signal phase-locked to the CP reference clock. Note that the multi-port cell-based cards have one common clock source for all ports. For this reason, the following rules apply for the value of *clockingSource* across the board's three ports: All three *clockingSource* values must be "***local***" OR All three *clockingSource* values must be "***module***" OR One *clockingSource* value must be "***line***" and the other two must be "***otherPort***". If there is no *NS* component provisioned, the default value for this attribute will be ***local.*** If the *NS* component has been provisioned, the default value is ***module***, except for the ***1pDS3C*** cards. For the ***1pDS3C*** cards, the default and only valid value for this attribute is ***local***. The *clockingSource* of the DS1 sub-component becomes the effective clocking source for this attribute. All the DS1 sub-components have the same clocking source. On the ***4pDS3ChAal1*** card, the only allowed values for this attribute are ***local*** and ***module***.
Mib	LogicalProcessor
Values	local line module otherPort
Default	No default

ATTRIBUTE Lp DS3 applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of the *DS3* component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)

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Default	No default

ATTRIBUTE Lp DS3 mapping

Access	Read and write
Description	This attribute indicates if ATM cells will be mapped directly into the DS3 payload, or whether PLCP mapping will be used. The *PLCP* component will appear under the *DS3* component when this attribute is set to ***plcp***. This attribute will be ignored when set on frame-based cards. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***direct***.
Mib	LogicalProcessor
Values	direct plcp
Default	direct

GROUP Lp DS3 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

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GROUP Lp DS3 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS3 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp DS3 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp DS3 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.

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Mib	LogicalProcessor

ATTRIBUTE Lp DS3 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS3 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS3 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing

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Default	up

GROUP Lp DS3 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS3 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp DS3 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp DS3 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be

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present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

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ATTRIBUTE Lp DS3 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp DS3 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — LogicalProcessor

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp DS3 alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp DS3 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp DS3 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

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The value ***true*** indicates that the actual state of the component is not known for sure.

Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp DS3 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the *DS3* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 losAlarm (los)

Access	Read only
Description	This attribute indicates whether a Loss Of Signal (LOS) alarm state has been entered. An LOS alarm state is entered when LOS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOS defect is detected at the DS3 line interface upon observing 175 +/- 75 continuous pulse positions with no pulses of either positive or negative polarity. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The *DS3* component goes into an operational state of *disabled* until the LOS alarm condition is cleared. The LOS alarm state is cleared after LOS defects have been absent for a period of 10 seconds +/- 0.5 seconds. The *losAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 lofAlarm (lof)

Access	Read only
Description	This attribute indicates whether a Loss Of Frame (LOF) alarm state has been entered. An LOF alarm state is entered when Severely Errored Frame (SEF) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A SEF defect is detected when 3 (or more) out of 16 (or fewer) F-bits are in error, or one (or more) M-bits in two (or more) out of four (or fewer) consecutive M-frames are in error. If the LOF

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defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The *DS3* component goes into an operational state of *disabled* until the LOF alarm condition is cleared. The condition is cleared when framing has been achieved for a period of 10 seconds +/- 0.5 seconds. As long as SEF defects are detected, the node also transmits the far-end SEF/AIS defect indicator over the outgoing line. When not running in C-Bit Parity mode, the *txRai* attribute is also set to ***on*** when transmitting the far-end SEF/AIS defect indicator on the outgoing line.

The *lofAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib — LogicalProcessor

Values — on
off

Default — off

ATTRIBUTE Lp DS3 rxAisAlarm (rxAis)

Access — Read only

Description — This attribute indicates whether an Alarm Indication Signal (AIS) alarm state has been entered. An AIS alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is the occurrence of AIS (valid DS3 frame with payload containing the 1010...sequence and with C-Bits set to zero) in contiguous M-frames for a time greater than 100 milliseconds. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The *DS3* component goes into an operational state of *disabled* until the AIS alarm condition is cleared (after AIS has been no longer detected for a period of 10 seconds +/- 0.5 seconds). As long as AIS is detected, the node also transmits the far-end SEF/AIS defect indicator over the outgoing line. When not running in C-Bit Parity mode, the *txRai* attribute is also set to *on* when transmitting the far-end SEF/AIS defect indicator on the outgoing line.

The *rxAisAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib — LogicalProcessor

Values — on
off

Default — off

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ATTRIBUTE Lp DS3 rxRaiAlarm (rxRai)

Access	Read only
Description	This attribute indicates whether a Remote Alarm Indication (RAI) alarm state has been entered. When not running the C-Bit Parity mode, the RAI alarm state is entered when the far-end SEF/AIS defect indicator has been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds on the incoming DS3 line. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The *DS3* component goes into an operational state of *disabled* until the RAI alarm condition is cleared. The condition is cleared when the far-end SEF/AIS defect indicator has not been detected for 10 seconds +/- 0.5 seconds. When running the C-Bit Parity mode, the RAI alarm state is entered upon detection of a far-end alarm over the Far-End Alarm and Control (FEAC) channel. The RAI alarm state is exited as soon as no more far-end alarm is detected on the FEAC channel. The far-end alarms that can be detected on the FEAC channel and that cause the RAI alarm state to be entered are: equipment failure alarm (service affecting), LOS alarm, LOF alarm, idle and AIS alarm. The *rxRaiAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 rxIdle

Access	Read only
Description	This attribute indicates whether an Idle failure condition has been reported on the DS3 port. An Idle condition is reported when DS3 Idle defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The DS3 Idle defect is the occurrence of a valid DS3 frame with the information bits set to a 11001100.. sequence. If the DS3 Idle defects are intermittently occurring, the DS3 Idle defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200ms polling cycle. The *DS3* component goes into an operational state of *disabled* until the Idle failure condition is cleared. The failure condition is cleared when the DS3 idle pattern has not been detected for at least 10 seconds +/- 0.5 seconds.

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The *rxIdle* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

The idle pattern indicates that the far-end is physically connected but not put in service. For instance, DS3 idle is transmitted on the outgoing line when the *DS3* component is locked and not used for operational testing.

Mib — LogicalProcessor

Values — on
off

Default — off

ATTRIBUTE Lp DS3 txAis

Access — Read only

Description — This attribute indicates whether an Alarm Indication Signal (AIS) alarm is being transmitted on the DS3 line. Currently, AIS is never transmitted by a Nortel Networks Multiservice Switch DS3.

Mib — LogicalProcessor

Values — on
off

Default — off

ATTRIBUTE Lp DS3 txRai

Access — Read only

Description — When not running C-Bit Parity mode, this attribute indicates whether the far-end SEF/AIS defect indicator is transmitted over the outgoing line when the *DS3* component has been unlocked or used in operational testing. When running in C-Bit Parity mode, this attribute displays whether a far-end alarm is sent over the Far-End Alarm and Control (FEAC) channel when the *DS3* component has been unlocked or used in operational testing. When the *DS3* component is locked and not used in operational testing, this attribute is always set to ***off***.

Mib — LogicalProcessor

Values — on
off

Default — off

ATTRIBUTE Lp DS3 txIdle

Access — Read only

Description — This attribute indicates whether the DS3 Idle signal is transmitted over the outgoing line. DS3 Idle is sent when the *DS3* component has been locked and not used in operational testing.

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Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp DS3 Statistics (Stats)

Properties	Operational
Description	This group contains the specific DS3 common operational data for a *DS3* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 runningTime (time)

Access	Read only
Description	This attribute counts the seconds since the DS3 component has been activated and been in unlocked state or used for operational testing. All the other error counts that follow as well as each *DS3* subcomponent's error counts can be updated when this count is active. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 errorFreeSec (efs)

Access	Read only
Description	This attribute counts the cumulative seconds that the DS3 port has been in an error free state. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineCodeViolations (lcv)

Access	Read only
Description	This attribute counts the Line Code Violations (LCV) detected. A DS3 Line Code Violation is a B3Zs error. LCV counting is inhibited for second

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	intervals where Line Severely Errored Second (LSES) is counted. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineErroredSec (les)

Access	Read only
Description	This attribute counts the Line Errored Seconds (LES). A LES is declared for second intervals containing one or more LCV or one or more Loss Of Signal (LOS) defects. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineSevErroredSec (lses)

Access	Read only
Description	This attribute counts the Line Severely Errored Seconds (LSES). A LSES is declared for second intervals containing more than 44 LCVs or one or more LOS defects. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineLosSec (loss)

Access	Read only
Description	This attribute counts the Line LOS Seconds (LOSS). A LOSS is declared for second intervals containing one or more LOS defects. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp DS3 lineFailures (lf)

Access	Read only
Description	This attribute counts the line failure (LOS failure) declarations. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the Path Code Violations (PCVs) detected. Each PCV corresponds to a P-bit parity error, or possibly a frame error or a disagreement between P-bits or X-bits. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 pathErroredSec (pes)

Access	Read only
Description	This attribute counts the Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more Path Code Violations (PCV) or one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of Path Errored Seconds is inhibited when Path Unavailable Seconds (PUAS) is counted over the monitored second. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the Path Severely Errored Seconds (PSESs). A

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PSES is declared for second intervals containing more than 44 PCVs or one or more SEF or AIS defects. Counting of PSESs is inhibited when Path Unavailable Seconds (PUAS) is counted over the monitored second.

The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 pathSefAisSec (psas)

Access Read only

Description

This attribute counts the SEF/AIS seconds (PSASs). A PSAS is declared for second intervals containing one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of PSAS is inhibited when Path Unavailable Seconds (PUAS) is counted over the monitored second.

The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals for which the DS3 path is unavailable. The DS3 path becomes unavailable at the onset of 10 consecutive Path Severely Errored Seconds (PSES). The 10 PSESs are included in the unavailable time. Once unavailable, the DS3 path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where PUAS is counted, counting of Path Coding Violations (PCV), Path Errored Seconds (PES), Path Severely Errored Seconds (PSES) and Path Sef/Ais Seconds (PSAS) is inhibited.

The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

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ATTRIBUTE Lp DS3 pathFailures (pf)

Access	Read only
Description	This attribute counts the path failure (LOF/AIS failure) declarations. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 egressFrameDiscards

Access	Read only
Description	This attribute counts the frames discarded at the egress PQC. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS3 Test (Test)

Groups	GROUP Lp DS3 Test OsiState (State) GROUP Lp DS3 Test Setup (Setup) GROUP Lp DS3 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp DS3 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

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VERB STOP Lp DS3 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS3 Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS3 Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp DS3 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

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ATTRIBUTE Lp DS3 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	LogicalProcessor
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp DS3 Test frmSize (size)

Access	Read and write

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Description

This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp DS3 Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Lp DS3 Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

Values Hex (H.0..H.ffffffff)

Units Hex

Default H.55555555

ATTRIBUTE Lp DS3 Test dataStartDelay (dsd)

Access Read and write

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Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS3 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS3 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.

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Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.
Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown

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neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp DS3 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 Test bitsRx

Access Read only

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Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

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ATTRIBUTE Lp DS3 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS3 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS3 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)

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Units	minutes
Default	0.00

COMPONENT Lp DS3 CBit

Groups	GROUP Lp DS3 CBit Operational GROUP Lp DS3 CBit Statistics (Stats)
Scope	Application
Description	*Lp/n DS3/n CBIT* The *CBIT* component is configured to display all DS3 C-Bit parity related operational and statistical data. It will appear under the *DS3* component when the *DS3 cbitParity* attribute is set to ***on***.
Mib	LogicalProcessor
Common Verbs	Help List Display

GROUP Lp DS3 CBit Operational

Properties	Operational
Description	This group contains the DS3 C-Bit Parity operational data for the *CBIT* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 CBit farEndAlarm

Access	Read only
Description	This attribute indicates the Far-End alarm signal that is currently received at the DS3 interface. This signal is carried over the Far-End Alarm and Control (FEAC) bits of DS3 frames. Five far-end alarm signals can be received: far-end equipment failure that is received when the far-end terminal has detected a local equipment failure; far-end Loss Of Signal (LOS) that is received when the far-end DS3 terminal has declared a LOS failure condition; far-end Loss of Frame (LOF) when the far-end DS3 terminal has declared a Loss Of Frame (LOF) failure condition; far-end Alarm Indication Signal (AIS) when the far-end has declared an AIS failure condition; far-end Idle when the far-end has declared an Idle signal condition.
Mib	LogicalProcessor
Values	equipmentFailure los sef ais

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	idle none
Default	none

ATTRIBUTE Lp DS3 CBit loopedbackToFarEnd

Access	Read only
Description	This indicates whether or not the DS3 component is currently looping back the incoming DS3 signal or one of its DS1 tributaries to the far-end DS3 terminal. This is activated when the far-end DS3 equipment has ordered the local terminal to do so.
Mib	LogicalProcessor
Set of	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 ds3Line
Default	No default

ATTRIBUTE Lp DS3 CBit loopbackAtFarEndRequested

Access	Read only

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Description	This attribute indicates which DS1 tributaries are being looped back, or if the DS3 line is being looped back. Each value listed indicates a loopback request has been made. When a loopback deactivation command has been sent to the far end, the corresponding value will be removed from the list.
Mib	LogicalProcessor
Set of	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 ds3Line
Default	No default

GROUP Lp DS3 CBit Statistics (Stats)

Properties	Operational
Description	This group contains the DS3 C-Bit Parity statistical data for the *CBIT* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

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ATTRIBUTE Lp DS3 CBit cbitErrorFreeSec (cefs)

Access	Read only
Description	This attribute indicates the number of seconds that the DS3 port has not suffered any C-Bit errors.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit cbitCodeViolations (ccv)

Access	Read only
Description	This attribute indicates the total count of C-Bit Parity Code Violations (CCV). A CCV is obtained when the parity calculated over the previous DS3 frame and the value of the CP-bits appearing in the current DS3 frame differ. The value of this attribute will wrap around to 0 if it does reach its maximum value. CCV counting is inhibited for second intervals where C-Bit Parity Severely Errored Seconds (CSES) are counted. It is also inhibited for second intervals where C-Bit Unavailable Seconds (CUAS) are counted. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit cbitErroredSec (ces)

Access	Read only
Description	This attribute indicates the total number of C-Bit Parity Errored Seconds (CES). A CES second is declared for second intervals containing one or more CCVs or when one or more SEF (Severely Errored Frame) or AIS (Alarm Indication Signal) defects. CES counting is inhibited for second intervals where C-Bit Unavailable Seconds (CUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit cbitSevErroredSec (cses)

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Access	Read only
Description	This attribute indicates the total number of C-Bit Parity Severely Errored Seconds (CSES). A CSES is declared for second intervals containing more than 44 CCVs or one or more SEF or AIS defects. The occurrence of CSES in a one second interval causes the inhibition of CCV counting during that second interval. CSES counting is also inhibited for second intervals where C-Bit Unavailable Seconds (CUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit cbitUnavailSec (cuas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the DS3 path is unavailable. The DS3 path becomes unavailable at the onset of 10 consecutive C-Bit Severely Errored Seconds (CSES). The 10 CSESs are included in the unavailable time. Once unavailable, the DS3 path becomes available at the onset of 10 contiguous seconds with no CSES. The 10 seconds with no CSES are excluded from the unavailable time. For second intervals where CUAS is counted, counting of C-Bit Coding Violations (CCV), C-Bit Errored Seconds (CES) and C-Bit Severely Errored Seconds (CSES) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit farEndErrorFreeSec (feefs)

Access	Read only
Description	This attribute indicates the number of seconds that the DS3 port has not suffered of any far-end errors.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit farEndCodeViolations (fecv)

Access	Read only
Description	This attribute indicates the total count of DS3 frames containing a Coding

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Violation on the Far-End (FECV), also known as a Far-End Block Error (FEBE). Each FEBE is reported over the FEBE bits each time the far-end DS3 terminal detects a C-BIT Parity error over a received DS3 frame. For second intervals where Far-End Unavailable Seconds (FEAUS) or Far-End Severely Errored Seconds (FESES) are counted, counting of FECVs is inhibited.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 CBit farEndErroredSec (fees)

Access Read only

Description

This attribute indicates the total number of Far-End Errored Seconds (FEES). A FEES is declared for second intervals containing with one or more FECVs or one or more far-end SEF/AIS defects. A far-end SEF/AIS defect occurs when the X-Bits of the DS3 frame are received as being set to zero. For second intervals where Far-End Unavailable Seconds (FEUAS) are counted, counting of FEESs is inhibited.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 CBit farEndSevErroredSec (feses)

Access Read only

Description

This attribute indicates the total number of Far-End Severely Errored Seconds (FESES). A FESES is declared for second intervals containing more than 44 FECVs or one or more far-end SEF/AIS defects. For second intervals where a FESES is counted, counting of FECVs is inhibited. For second intervals where Far-End Unavailable Seconds (FEUAS) are counted, counting of FESESs is inhibited.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 CBit farEndSefAisSec (fesas)

Access Read only

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Description	This attribute indicates the total number of Far-End SEF/AIS Seconds (FESAS). A FESAS is declared for second intervals containing one or more far-end SEF/AIS defects.For second intervals where Far-End Unavailable Seconds (FEUAS) are counted, counting of FESASs is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit farEndUnavailSec (feuas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the DS3 far-end path is unavailable. The DS3 far-end path becomes unavailable at the onset of 10 consecutive Far-End Severely Errored Seconds (FESES). The 10 FESESs are included in the unavailable time. Once unavailable, the DS3 far-end path becomes available at the onset of 10 contiguous seconds with no FESES. The 10 seconds with no FESES are excluded from the unavailable time. For second intervals where FEUAS is counted, counting of Far-End Coding Violations (FECV), Far-End Errored Seconds (FEES), Far-End Severely Errored Seconds (FESES) and Far-End Sef/Ais Seconds (FESAS) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit farEndFailures (fef)

Access	Read only
Description	This attribute indicates the total number of times that a far-end path failure (i.e. a Far-End SEF/AIS defect) has been declared. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS3 Plcp

Groups	GROUP Lp DS3 Plcp Operational GROUP Lp DS3 Plcp Statistics (Stats)

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Scope	Application
Description	*LP/n DS3/n PLCP* *LP/n E3/n PLCP* The *PLCP* component is configured to display all DS3/E3 PLCP related operational and statistical data. It will appear under the *DS3* or *E3* components when the *mapping* attribute is set to ***plcp***.
Mib	LogicalProcessor
Common Verbs	Help List Display

GROUP Lp DS3 Plcp Operational

Properties	Operational
Description	This group contains the operational data for the *PLCP* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Plcp lofAlarm (lof)

Access	Read only
Description	This attribute displays whether a PLCP Loss Of Frame (LOF) failure alarm state has been entered. An LOF failure is declared when a PLCP LOF defect persists for 2.5 s +/- 0.5 s. An LOF defect occurs when an OOF (Out of Frame) state persists for more than 1 ms. If the OOF events are intermittent, the LOF defect counter is decremented at a rate of 1/12 (for DS3 PLCP) or 1/9 (for G.751 E3 PLCP) of the incrementing rate, with all measurements based on a 200 ms polling cycle. An OOF event (also known as a PLCP SEF event) is declared when an error is detected in both the A1 and A2 octets, or when two consecutive POHIDs are found in error. OOF is removed when two valid sets of framing octets and two valid and sequential POHID octets have been found. The LOF defect is removed when the defect counter reaches zero, i.e. when OOF events are absent for more than 12 ms (DS3 PLCP) or 9 ms (G.751 E3 PLCP). LOF failure alarm is cleared when LOF defect is absent for 10.0 s +/- 0.5 s The *DS3* or *E3* component goes into an operational state of *disabled* until the LOF failure alarm is cleared. The terminal declaring the LOF failure alarm will transmit a PLCP RAI signal to the far-end for the duration of the alarm. The *lofAlarm* attribute is always set to *off* when the *DS3* or *E3* component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off

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Default	off

ATTRIBUTE Lp DS3 Plcp rxRaiAlarm (rxrai)

Access	Read only
Description	This attribute displays whether a PLCP Remote Alarm Indication (RAI) failure alarm state has been entered. An RAI failure alarm occurs when ten consecutive PLCP RAI bits (bit 5 in the G1 byte) are high on the incoming line. An RAI failure alarm is cleared when ten consecutive RAI bits are set to 0. Note: Some standards call this alarm RFI. The *rxRaiAlarm* attribute is always set to *off* when the *DS3* or *E3* component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp DS3 Plcp Statistics (Stats)

Properties	Operational
Description	This group contains the statistical data for the *PLCP* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Plcp errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds during which the near-end PLCP path layer had no errors.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp codingViolations (cv)

Access	Read only
Description	This attribute indicates the total number of BIP-8 Errors, framing pattern octet errors, and path overhead identification errors detected in received PLCP frames.

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Counting of PLCP CV is inhibited for second intervals where PLCP Severely Errored Framing Seconds (SEFS) or PLCP Unavailable Seconds (UAS) are counted.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Plcp erroredSec (es)

Access Read only

Description

This attribute indicates the number of seconds containing one or more PLCP Coding Violations (CV) or in which a PLCP Severely Errored Framing Second (SEFS) was counted.
Counting of PLCP ES is inhibited during second intervals where PLCP Unavailable Seconds (UAS) are counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Plcp sevErroredSec (ses)

Access Read only

Description

This attribute indicates the number of seconds containing 5 or more PLCPCVs or in which a PLCPSEFS was counted (i.e. a PLCP OOF event occurred).
Counting of PLCP SES is inhibited during second intervals where PLCP Unavailable Seconds (UAS) are counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Plcp sevErroredFramingSec (sefs)

Access Read only

Description

This attribute indicates the number of seconds containing one or more PLCP Severely Errored Frame (SEF) events. An SEF event is equivalent to a PLCP OOF (Out of Frame) event.
Counting of PLCPP SEFSs is inhibited for second intervals where PLCP Unavailable Seconds (UAS) are counted.

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Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp unavailSec (uas)

Access	Read only
Description	This attribute indicates the number of seconds when the near-end PLCP layer is unavailable. The PLCP Path Layer becomes unavailable at the declaration of PLCP LOF (Loss of Frame) failure alarm state. The PLCP Path Layer becomes available again only after clearing this condition. For second intervals where PLCP UAS are counted, counting of PLCP Severely Errored Framing Seconds (SEFS), PLCP Coding Violations (CV), PLCP Errored Seconds (ES), PLCP Severely Errored Seconds (SES) and PLCP Far-End Severely Errored Seconds (FESES) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp farEndErrorFreeSec (feefs)

Access	Read only
Description	This attribute indicates the number of seconds during which the far-end PLCP path layer had no errors.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp farEndCodingViolations (fecv)

Access	Read only
Description	This attribute indicates the total number of PLCP Far-End Block Errors (FEBE) reported by the far-end terminal. Counting of FEBEs is inhibited for second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Lp DS3 Plcp farEndErroredSec (fees)

Access	Read only
Description	This attribute indicates the number of seconds containing one or more PLCP Far-End Coding Violations (FECV). Counting of PLCP FEES is inhibited during second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp farEndSevErroredSec (feses)

Access	Read only
Description	This attribute indicates the number of seconds containing 5 or more PLCP Far-End Coding Violations (FECV). Counting of PLCP FESES is inhibited for second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp farEndUnavailableSec (feuas)

Access	Read only
Description	This attribute indicates the number of seconds during which the PLCP far end is unavailable. The PLCP Path Layer becomes unavailable at the declaration of PLCP RAI (Remote Alarm Indication). Service becomes available again after this condition is cleared. For second intervals where PLCP FEUAS are counted, counting of PLCP Far-End Coding Violations (FECV), PLCP Far-End Errored Seconds (FEES), and PLCP Far-End Severely Errored Seconds (FESES) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

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COMPONENT Lp DS3 AtmCell (Cell)

Groups
GROUP Lp DS3 Cell Provisioned (Prov)
GROUP Lp DS3 Cell Operational (Oper)
GROUP Lp DS3 Cell Statistics (Stats)

Scope: Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib: LogicalProcessor

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp DS3 Cell Provisioned (Prov)

Properties: Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib: LogicalProcessor

ATTRIBUTE Lp DS3 Cell alarmActDelay (act)

Access: Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib: LogicalProcessor

Values: Decimal (0..2000)

Units: msec

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Default	No default

ATTRIBUTE Lp DS3 Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	LogicalProcessor
Values	off on
Default	No default

ATTRIBUTE Lp DS3 Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp DS3 Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm,

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	8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp DS3 Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

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Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp DS3 Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp DS3 Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..25)
Default	1

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GROUP Lp DS3 Cell Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes for the *AtmCell* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Cell lcdAlarm (lcd)

Access	Read only
Description	This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute. In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected. For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect. If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds. The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp DS3 Cell Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically

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increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Cell receiveCellUtilization (rxutil)

Access Read only

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Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp DS3 Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp DS3 Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

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COMPONENT Lp DS3 DS1

Instance	Decimal (1..28)
Groups	GROUP Lp DS3 DS1 Provisioned (Prov) GROUP Lp DS3 DS1 CustomerIdentifierData (CidData) GROUP Lp DS3 DS1 AdminInfo (AdminInfo) GROUP Lp DS3 DS1 IfEntryProv (IfEntry) GROUP Lp DS3 DS1 OperationalStatus (OperStatus) GROUP Lp DS3 DS1 OsiState (State) GROUP Lp DS3 DS1 Operational (Oper) GROUP Lp DS3 DS1 Statistics (Stats)
Scope	Application
Description	*Lp/n DS3/n DS1/n* The *DS1* component controls and monitors a DS1 tributary of a channelized DS3 port on a Function Processor that supports channelization of a DS3.
Mib	LogicalProcessor
Subcomponents	COMPONENT Lp DS3 DS1 Channel (Chan)
Dyn. Subcomp.	COMPONENT Lp DS3 DS1 Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS3 DS1 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *DS1* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 lineType (lineType)

Access	Read and write
Description	This attribute defines the framing of the DS1 tributary. ***d4*** defines a framing pattern of 12 frames per multiframe. ***esf*** defines a framing pattern of 24 frames per multiframe. ***d4Cas*** defines a framing pattern of 12 frames per multiframe with channel associated signalling. ***esfCas*** defines a framing pattern of 24 frames per multiframe with channel associated signalling.

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unframed defines an unknown framing pattern for clear channels.

For the ***4pDS3ChAtm*** card, only ***d4*** and ***esf*** framing patterns are permitted.

The ***4pDS3ChAal1*** card supports the ***d4*** and ***esf*** framing patterns, as well as ***unframed***.

Mib: LogicalProcessor

Values:
d4
esf
d4Cas
esfCas
unframed

Default: esf

ATTRIBUTE Lp DS3 DS1 zeroCoding (zeroCoding)

Access: Read and write

Criticality: Component

Description

This attribute defines the zero encoding on the DS1 tributary.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
none does no zero encoding, it does not change any value of the bits in the timeslot. The value ***none*** is compatible with any zero coding scheme which transports all 8 data bits in a timeslot (this would include both ***ami*** and ***b8zs*** values of the *DS1 zeroCoding* attribute).

Mib: LogicalProcessor

Values:
bit7Stuffing
none

Default: none

ATTRIBUTE Lp DS3 DS1 clockingSource (clockingSource)

Access: Read and write

Description

This attribute specifies the source of the transmit clock for the DS1 tributary.
When the clocking source is ***local***, the crystal on the port generates the clocking for the DS1 tributary.
When the clocking source is ***line***, the port synchronizes to the clock from the DS1 tributary.
When the clocking source is ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP.
When the clocking source is ***sameAsDs3***, the Ds1 port's clock synchronizes to the same clock source as that of its parent Ds3 port.

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On a ***1pDS3C*** card, if the *NetworkSynchronization (NS)* component is present, the default value of this attribute will be ***module***; otherwise it will be ***line***.

On a ***2pDS3cAal*** card, the only valid values are ***local*** and ***module***. If the *NS* component is present, the default value of this attribute will be ***module***; otherwise it will be ***local***.

On the ***4pDS3Ch***, ***4pDS3ChAtm***, and ***4pDS3ChAal1*** cards, the only valid value is ***sameAsDs3***. This is because a DS1 must have the same clocking source as its parent DS3.

Mib — LogicalProcessor

Values
local
line
module
sameAsDs3

Default — No default

GROUP Lp DS3 DS1 CustomerIdentifierData (CidData)

Properties — Provisioned

Description — This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib — LogicalProcessor

ATTRIBUTE Lp DS3 DS1 customerIdentifier (cid)

Access — Read and write

Description — This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib — LogicalProcessor

Values — Decimal (0; 1..8191)

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Default	0

GROUP Lp DS3 DS1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp DS3 DS1 IfEntryProv (IfEntry)

Properties	Provisioned

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Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS3 DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS3 DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor

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Values	up down testing
Default	up

GROUP Lp DS3 DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS3 DS1 operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 DS1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS3 DS1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp DS3 DS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp DS3 DS1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS3 DS1 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp DS3 DS1 **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp DS3 DS1 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp DS3 DS1 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 rxAisAlarm (rxAisAlarm)

Access	Read only
Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.
Mib	LogicalProcessor

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Values	on off
Default	off

ATTRIBUTE Lp DS3 DS1 lofAlarm (lofAlarm)

Access	Read only
Description	This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (2 out of 5 framing bits in error) have been detected for 3 seconds +/- 0.5 seconds. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 DS1 rxRaiAlarm (rxRaiAlarm)

Access	Read only
Description	This attribute indicates whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds. The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 DS1 txAisAlarm (txAisAlarm)

Access	Read only

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Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the tributary is in a locked state.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 DS1 txRaiAlarm (txRaiAlarm)

Access	Read only
Description	This attribute indicates whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the tributary detects a LOF alarm condition.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp DS3 DS1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 runningTime (runningTime)

Access	Read only
Description	This attribute counts the number of seconds since the tributary was activated.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 DS1 errorFreeSec (efs)

Access	Read only

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Description

This attribute counts the number of seconds that the tributary has been in an error free state.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 erroredSec (es)

Access Read only

Description

This attribute counts the number of errored seconds the tributary has counted since it was activated. An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 sevErroredSec (ses)

Access Read only

Description

This attribute counts the number of severely errored seconds the tributary has counted since it was activated. A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 sevErroredFrmSec (sefs)

Access Read only

Description

This attribute counts the number of severely errored framing seconds the tributary has counted since it was activated A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.

Mib LogicalProcessor

Values Decimal (0..4294967295)

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Default	0

ATTRIBUTE Lp DS3 DS1 unavailSec

Access	Read only
Description	This attribute counts the total number of seconds that the tributary has been in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 DS1 crcErrors (crcErrors)

Access	Read only
Description	This attribute counts the total number of CRC-6 errors. These will only be counted when the *lineType* is ***esf***.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 DS1 frmErrors (frmErrors)

Access	Read only
Description	This attribute counts the total number of frame errors. A frame error is an error in the framing bits.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 DS1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

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COMPONENT Lp DS3 DS1 Channel (Chan)

Instance	Decimal (0..23)
Groups	GROUP Lp DS3 DS1 Chan Provisioned (Prov) GROUP Lp DS3 DS1 Chan CustomerIdentifierData (CidData) GROUP Lp DS3 DS1 Chan IfEntryProv (IfEntry) GROUP Lp DS3 DS1 Chan OperationalStatus (OperStatus) GROUP Lp DS3 DS1 Chan OsiState (State) GROUP Lp DS3 DS1 Chan Operational (Oper) GROUP Lp DS3 DS1 Chan AdminInfo (AdminInfo)
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.
Mib	LogicalProcessor
Opt. Subcomp.	COMPONENT Lp DS3 DS1 Chan AtmCell (Cell) COMPONENT Lp DS3 DS1 Chan TrunkConditioning (Tc)
Dyn. Subcomp.	COMPONENT Lp DS3 DS1 Chan Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS3 DS1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1*

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component, and 1-31 for a *Channel* used by an *E1* component.

For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

Mib: LogicalProcessor

Set of:
none
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

Default: No default

ATTRIBUTE Lp DS3 DS1 Chan timeslotDataRate (dataRate)

Access: Read and write

Criticality: Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

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When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib	LogicalProcessor
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Lp DS3 DS1 Chan applicationFramerName

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp DS3 DS1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan customerIdentifier (cid)

Access	Read and write

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Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS3 DS1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS3 DS1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.

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Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS3 DS1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp DS3 DS1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp DS3 DS1 Chan operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp DS3 DS1 Chan usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare

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operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — LogicalProcessor

Values
idle
active (activ)
busy

Default — idle

ATTRIBUTE Lp DS3 DS1 Chan availabilityStatus (osiAvail)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of

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disabled is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — LogicalProcessor

Set of —
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Lp DS3 DS1 Chan proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is

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enabled.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — LogicalProcessor

Set of
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp DS3 DS1 Chan controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — LogicalProcessor

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp DS3 DS1 Chan alarmStatus (osiAlarm)

Access — Read only

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Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

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The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp DS3 DS1 Chan unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default: false

GROUP Lp DS3 DS1 Chan Operational (Oper)

Properties: Operational

Description:
This group contains all of the operational data for a *Channel* component.

Mib: LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan actualChannelSpeed

Access: Read only

Description:
This attribute displays the measured link speed of the *Channel* component.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Units: bit/s

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Default	0

GROUP Lp DS3 DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

COMPONENT Lp DS3 DS1 Chan Test (Test)

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Groups	GROUP Lp DS3 DS1 Chan Test OsiState (State) GROUP Lp DS3 DS1 Chan Test Setup (Setup) GROUP Lp DS3 DS1 Chan Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp DS3 DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS3 DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS3 DS1 Chan Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — LogicalProcessor

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp DS3 DS1 Chan Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — LogicalProcessor

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp DS3 DS1 Chan Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — LogicalProcessor

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Values	idle active (activ) busy
Default	idle

GROUP Lp DS3 DS1 Chan Test **Setup (Setup)**

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte

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inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp DS3 DS1 Chan Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp DS3 DS1 Chan Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: LogicalProcessor

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Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp DS3 DS1 Chan Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp DS3 DS1 Chan Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 DS1 Chan Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes

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Default	5

ATTRIBUTE Lp DS3 DS1 Chan Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS3 DS1 Chan Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been

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looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib LogicalProcessor

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp DS3 DS1 Chan Test **bitsTx**

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test **bytesTx**

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

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Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test **frmTx**

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test **bitsRx**

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test **bytesRx**

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test **frmRx**

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor

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Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an

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externalLoop test. For a data test, it indicates time since test data was first transmitted.

Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS3 DS1 Chan Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp DS3 DS1 Chan AtmCell (Cell)

Groups	GROUP Lp DS3 DS1 Chan Cell Provisioned (Prov) GROUP Lp DS3 DS1 Chan Cell Operational (Oper) GROUP Lp DS3 DS1 Chan Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp DS3 DS1 Chan Cell Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.

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Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Cell **alarmActDelay (act)**

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	LogicalProcessor
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Cell **scrambleCellPayload (scramble)**

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	LogicalProcessor
Values	off on
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Cell **correctSingleBitHeaderErrors**

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

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Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: LogicalProcessor

Values: off
on

Default: off

ATTRIBUTE Lp DS3 DS1 Chan Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp DS3 DS1 Chan Cell hecSampleInterval (hSample)

Access: Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (0..25)

Units: seconds

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Default	0

ATTRIBUTE Lp DS3 DS1 Chan Cell **hecErrorLimit (hLimit)**

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Cell **lcdStateDelay (delay)**

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Cell **hecErrorIntervalLimit (hIntLimit)**

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before

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an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..25)

Default 1

GROUP Lp DS3 DS1 Chan Cell Operational (Oper)

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when

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the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp DS3 DS1 Chan Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 Chan Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

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Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 Chan Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp DS3 DS1 Chan Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp DS3 DS1 Chan Cell correctableHeaderErrors (cErr)

Access Read only

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Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS3 DS1 Chan TrunkConditioning (Tc)

Groups	GROUP Lp DS3 DS1 Chan Tc Provisioned (Prov) GROUP Lp DS3 DS1 Chan Tc Operational (Op)
Scope	Device
Description	*Lp/n Ds1/n Chan/n Tc* *Lp/n E1/n Chan/n Tc* *Lp/n Ds3/n Ds1/n Chan/n Tc* *Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc* *Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc* *Laps/n* Vc4/n Vc12/k,l,m E1 Chan/n T*c* *Laps/n* Sts/n Vt1dot5/l,m Ds1 Chan/n T*c* The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service. Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined. When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI) When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:

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bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib — LogicalProcessor

Common Verbs — Help, List, Display, Add, DELete

GROUP Lp DS3 DS1 Chan Tc Provisioned (Prov)

Properties — Provisioned

Description — This group contains all specific provisioning data for a *Tc* component.

Mib — LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Tc replacementData (data)

Access — Read and write

Description — This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib — LogicalProcessor

Values — Hex (H.0..H.ff)

Units — Hex

Default — No default

ATTRIBUTE Lp DS3 DS1 Chan Tc signalOneDuration (duration)

Access — Read and write

Description — This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses

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CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits.

If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions.

The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.

Mib	LogicalProcessor
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 DS1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	LogicalProcessor
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Lp DS3 DS1 Chan Tc signalOne (sigOne)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

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Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Lp DS3 DS1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Lp DS3 DS1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***.

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	Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp DS3 DS1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the PDH line under the following conditions: bufferUnderflow (BU) AAL1 protocol errors.
Mib	LogicalProcessor
Values	off on
Default	off

COMPONENT Lp DS3 DS1 Test (Test)

Groups	GROUP Lp DS3 DS1 Test OsiState (State) GROUP Lp DS3 DS1 Test Setup (Setup) GROUP Lp DS3 DS1 Test Results (Results)
Scope	Application

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Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs
Help
List
Display

VERB START Lp DS3 DS1 Test

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS3 DS1 Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Lp DS3 DS1 Test **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Test **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — LogicalProcessor

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp DS3 DS1 Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — LogicalProcessor

Values
enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp DS3 DS1 Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — LogicalProcessor

Values
idle
active (activ)
busy

Default — idle

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GROUP Lp DS3 DS1 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.

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Mib	LogicalProcessor
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp DS3 DS1 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	LogicalProcessor
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp DS3 DS1 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

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ATTRIBUTE Lp DS3 DS1 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp DS3 DS1 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 DS1 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS3 DS1 Test duration

Access	Read and write

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Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS3 DS1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This

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failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib — LogicalProcessor

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default — neverStarted

ATTRIBUTE Lp DS3 DS1 Test bitsTx

Access — Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib — LogicalProcessor

Values — Long Integer

Default — No default

ATTRIBUTE Lp DS3 DS1 Test bytesTx

Access — Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib — LogicalProcessor

Values — Long Integer

Default — No default

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ATTRIBUTE Lp DS3 DS1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer

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Default	No default

ATTRIBUTE Lp DS3 DS1 Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

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Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS3 DS1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp DS3 InverseMultiplexerAtm (Ima)

Instance	Decimal (0..13)
Groups	GROUP Lp DS3 Ima Provisioned (Prov) GROUP Lp DS3 Ima Operational (Oper) GROUP Lp DS3 Ima Statistics (Stats) GROUP Lp DS3 Ima CustomerIdentifierData (CidData) GROUP Lp DS3 Ima OsiState (State)
Scope	Device
Description	*Lp/n InverseMultiplexerAtm/n* *Lp/n Ds3/n InverseMultiplexerAtm/n* This component is used to define an inverse multiplexing for ATM (IMA) group. IMA provides a data rate greater than DS1 E1 in increments of DS1 E1. To use IMA on an 8pDS1E1, MSA32, MSA8, 2pSTM1eCh or 2pSTM1Ch function processor, add an *Lp/n InverseMultiplexerAtm/n* component. To use IMA on a 4pDS3ChAtm function processor, add an *Lp/n Ds3/n InverseMultiplexerAtm/n* component. To use IMA in a protected configuration on the 2pSTM1Ch, add a *Laps/n InverseMultiplexerAtm/n* component. The instance range 0..7 applies to 8pDS1Atm, 8pE1Atm, 8pDS1Msa and 8pE1Msa cards. The instance range 0..13 applies to 4pDS3ChAtm cards. The instance range 0..29 applies to MSA32 cards. The instance range 0..113 applies to the 2pStm1eCh and 2pSTM1Ch cards. The instance number of an *IMA* group must not be the same as the instance number of a *DS1*/*E1* “ATM UNI port” under the same *Lp*. An “ATM UNI port” is a *DS1* or *E1* component with a single *Chan* whose

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applicationFramer attribute is linked to an *AtmIf* component. On an MSA32 card, ports that are used as IMA links have two immiscible sub-ranges: 0..15 and 16..31. The instance number of an *IMA* group must be in the same sub-range as all of its ports. IMA sub-ranges also exist on the 2pStm1eCh and 2pSTM1Ch cards, instances 0..56 are allowed on port SDH 0, and instances 57..113 are allowed on port SDH 1.

Mib	Ima
Opt. Subcomp.	COMPONENT Lp DS3 Ima Link (Lk)
Dyn. Subcomp.	COMPONENT Lp DS3 Ima Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS3 Ima Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Ima* component. The default values of *linkSelectionCriterion* and *linkRetryTimeout* depend on card type.
Mib	Ima

ATTRIBUTE Lp DS3 Ima linkSelectionCriterion (select)

Access	Read and write
Description	This attribute specifies the method to be used by the IMA group when selecting links to be activated. This comes into effect only when the configured links do not respect the maximum differential delay (otherwise all links are accepted). If ***leastDelay*** is chosen, first the link having the smallest delay is selected as the reference link. The IMA group includes all links which respect the maximum differential delay relative to the reference link. If ***maxBandwidth*** is chosen, the IMA group selects the maximum possible number of links, with each selected link respecting the maximum differential delay relative to every other selected link. When more than one possibility exists, the combination which offers the least delay is selected. The default value for Multi-Service Access cards is ***leastDelay***, and for all other cards is ***maxBandwidth***. On Multi-Service Access cards ***leastDelay*** is the only acceptable provisionable value.

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Mib	Ima
Values	leastDelay maxBandwidth
Default	No default

ATTRIBUTE Lp DS3 Ima maxDiffDelay (delay)

Access	Read and write
Description	This attribute specifies the maximum differential delay between links acceptable in the IMA group. If a link violates that maximum differential delay, it will not be active in the IMA group and an alarm will be generated. For the 4pDS3ChAtm card, the value must not exceed 70.
Mib	Ima
Values	Decimal (1..100)
Units	msec
Default	25

ATTRIBUTE Lp DS3 Ima linkRetryTimeout (retry)

Access	Read and write
Description	This attribute specifies the amount of time before reactivation of a link is attempted after it recovers from a failure condition. The default value for Multi-Service Access cards is ***1***, and for all other cards is ***10***. On Multi-Service Access cards ***1*** is the only acceptable provisionable value.
Mib	Ima
Values	Decimal (0..1000)
Units	seconds
Default	No default

ATTRIBUTE Lp DS3 Ima applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the *AtmIf* component using the *Ima*. An example is *AtmIf/31.*
Mib	Ima
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp DS3 Ima transmitClockMode (clock)

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Access	Read and write
Description	This attribute specifies the transmit clocking mode. If ***itc*** (Independent Transmit Clock) is chosen, the physical ports used by the IMA group may have different clocking sources. If ***ctc*** (Common Transmit Clock) is chosen, it is recommended that the physical ports used by the IMA group have the same clocking source. However, if the physical ports have different clocking sources, the operator should ensure that all the clocking sources have the same rate.
Mib	Ima
Values	itc ctc
Default	itc

ATTRIBUTE Lp DS3 Ima protocol (prot)

Access	Read and write
Criticality	Component
Description	This attribute specifies which IMA protocol the component should run. If ***atmForum10*** is chosen, the ATM Forum's IMA protocol (version 1.0) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA also uses the ATM Forum's IMA protocol 1.0. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If ***atmForum11*** is chosen, the ATM Forum's IMA protocol (version 1.1) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA uses the ATM Forum's IMA protocol 1.0 or 1.1. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If the far end is 1.0, then the near end downgrades to 1.0. After the downgrade, this attribute continues to specify the provisioned protocol version, while the *activeProtocol* operational attribute of the IMA component specifies the protocol version effectively running. If ***proprietary*** is chosen, Nortel's proprietary IMA protocol will be used. This protocol version is not currently supported as the IMA group will not inter-operate with IMA implementations from other vendors. Feature ***ima*** must be provisioned on the LP for this protocol to be used. The DEFAULT on the 2pStm1eCh and 2pSTM1Ch function processors is atmForum11.
Mib	Ima
Values	atmForum10 proprietary atmForum11
Default	No default

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GROUP Lp DS3 Ima Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Ima* component.
Mib	Ima

ATTRIBUTE Lp DS3 Ima failureCause (cause)

Access	Read only
Description	This attribute indicates the cause of the current local end failure experienced by the IMA group. The failure may have occurred during a start-up procedure or during normal operation. Possible values are: ***noFailure***: no local end failure. ***noGoodLinksInStartup***: no good links were available during IMA start-up. ***badGidInStartup***: during start-up, different group identifiers (GIDs) were received on the links. ***badLidInStartup***: during start-up, duplicate link identifiers (LIDs) were received on the links. ***unsupportedFrameLengthInStartup***: during start-up, an unsupported frame length was received. ***timeoutInStartup***: a time-out has occurred during start-up. ***noGoodLinks***: no good links are available in the IMA group. ***remoteFailure***: the far end is down. ***unsupportedSymmetryInStartup***: the symmetry proposed by the far end is not supported on the near-end. This value will occur when the IMA group is running the ATM Forum protocol and the far end is proposing a group symmetry other than “symmetric configuration and operation”. ***unsupportedVersionInStartup***: the ima version proposed by the far end is not supported on the near-end.
Mib	Ima
Values	noFailure noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks remoteFailure unsupportedSymmetryInStartup unsupportedVersionInStartup
Default	No default

ATTRIBUTE Lp DS3 Ima remoteDefect (remDef)

Access	Read only
Description	This attribute indicates the cause of the current far end defect experienced by the IMA group. For the ATM Forum IMA protocol, possible values are:

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noDefect: no defect.
unsupportedFrameLengthInStartup: during the far end's start-up, an unsupported frame length was received.
unsupportedSymmetryInStartup: during the far end's start-up, an unsupported symmetry configuration was received.
otherAbortStartup: the far end has aborted its start-up for another reason. This could be because different Gids were received on the links or if duplicate link identifiers (LIDs) were received.
insufficientLinks: the far end does not have sufficient links active. This value will be displayed if the far end IMA group is locked.
blocked: the far end IMA group is blocked.

For the proprietary IMA protocol, possible values are:
noDefect: no defect.
noGoodLinksInStartup: no good links were available during the far end's start-up.
badGidInStartup: during the far end's start-up, different GIDs were received on the links.
badLidInStartup: during the far end's start-up, duplicate link identifiers (LIDs) were received on the links.
unsupportedFrameLengthInStartup: during the far end's start-up, an unsupported frame length was received.
timeoutInStartup: a time out has occurred during the far end's start-up.
noGoodLinks: no good links are available in the far end IMA group.
blocked: the far end IMA group is locked.
unsupportedVersionInStartup: the ima version proposed by the far end is not supported on the near-end.

Mib	Ima
Values	noDefect noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks locked unsupportedSymmetryInStartup otherAbortStartup insufficientLinks blocked unsupportedVersionInStartup
Default	No default

ATTRIBUTE Lp DS3 Ima remoteLidsConfig (remConf)

Access	Read only
Description	This attribute indicates all the links which have been configured in the remote IMA group. For example, if links 1, 3 and 5 have been configured in the remote IMA group, this attribute would contain ***1 3 5***.

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Mib	Ima
Set of	Decimal (0..31)
Default	No default

ATTRIBUTE Lp DS3 Ima remoteLidsActive (remAct)

Access	Read only
Description	This attribute indicates all the links which are active in the remote IMA group. For example, if links 1 and 5 are active in the remote IMA, this attribute would contain ***1 5***.
Mib	Ima
Set of	Decimal (0..31)
Default	No default

ATTRIBUTE Lp DS3 Ima cellCapacity (cap)

Access	Read only
Description	This attribute indicates the total cell capacity (in cells per second) which is provided to the ATM layer. This cell capacity takes into account the physical and IMA level overheads.
Mib	Ima
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE Lp DS3 Ima remoteGid (remGid)

Access	Read only
Description	This attribute indicates the IMA group identifier (GID) used by the remote IMA. A value of 0 will be displayed if the group is not receiving IMA Control Protocol (ICP) cells.
Mib	Ima
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Lp DS3 Ima clockingModeMismatch (mismatch)

Access	Read only
Description	This attribute indicates whether or not both ends of the IMA group are using the same transmit clocking mode (***itc***/***ctc***). Its value will be ***yes*** if both ends are not using the same transmit clocking mode. A clocking mode mismatch does not prevent an IMA group from coming up and can

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be corrected by using the same clocking mode at both ends.

Mib	Ima
Values	no yes
Default	No default

ATTRIBUTE Lp DS3 Ima activeProtocol (activeProt)

Access	Read only
Description	This attribute indicates which IMA protocol the *Ima* component is effectively running. This attribute is supported on the 8pDs1Atm, 8pE1Atm, 4pDS3ChAtm, 2pStm1eCh and 2pSTM1Ch cards. This attribute is not supported on the MSA32 and MSA8 cards. The value of this attribute is the same as the provisioned *protocol* attribute if the IMA is operating at the provisioned protocol version. The value of this attribute indicates the dongraded protocol version if the IMA has gone through a protocol version downgrade upon IMA 1.1 to IMA 1.0 interworking.
Mib	Ima
Values	atmForum10 proprietary atmForum11
Default	No default

GROUP Lp DS3 Ima Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Ima* component.
Mib	Ima

ATTRIBUTE Lp DS3 Ima runningTime (running)

Access	Read only
Description	This attribute indicates the length of time (in seconds) for which the *Ima* component has been in the unlocked state or has been used for operational testing.
Mib	Ima
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp DS3 Ima unavailSec (unavail)

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Access	Read only
Description	This attribute indicates the number of one second intervals during which the *Ima* component has been unlocked and out of service.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima failures (fail)

Access	Read only
Description	This attribute indicates the number of complete failures, during start-up or normal operation, that the *Ima* component has experienced since being added. It must be noted that a service degradation, such as 1 of the 3 links in an IMA group being down, is not counted as a failure. If an *Ima* component is in a failure loop and does not come up, this count will only increase by 1.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute indicates the ratio of the number of valid, assigned user cells received on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period.
Mib	Ima
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp DS3 Ima transmitCellUtilization (txutil)

Access	Read only
Description	This attribute indicates the ratio of the number of user cells transmitted on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period.
Mib	Ima
Values	Decimal (0..100)

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Units	%
Default	No default

GROUP Lp DS3 Ima CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Ima

ATTRIBUTE Lp DS3 Ima customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Ima
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS3 Ima OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp DS3 Ima adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS3 Ima operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 Ima usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS3 Ima availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ima
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp DS3 Ima proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — Ima

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp DS3 Ima controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	Ima
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS3 Ima alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Ima
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp DS3 Ima standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Ima

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp DS3 Ima unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Ima

Values:
false
true

Default: false

COMPONENT Lp DS3 Ima Test (Test)

Groups:
GROUP Lp DS3 Ima Test OsiState (State)
GROUP Lp DS3 Ima Test Setup (Setup)
GROUP Lp DS3 Ima Test Results (Results)

Scope: Application

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Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib Ima

Common Verbs
Help
List
Display

VERB START Lp DS3 Ima Test

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS3 Ima Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Lp DS3 Ima Test **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Ima

ATTRIBUTE Lp DS3 Ima Test **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Ima

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp DS3 Ima Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Ima

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp DS3 Ima Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Ima

Values — idle
active (activ)
busy

Default — idle

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GROUP Lp DS3 Ima Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Ima
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp DS3 Ima Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.

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Mib	Ima
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp DS3 Ima Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Ima
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp DS3 Ima Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Ima
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

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ATTRIBUTE Lp DS3 Ima Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Ima
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp DS3 Ima Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Ima
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 Ima Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Ima
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS3 Ima Test duration

Access	Read and write

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Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Ima
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS3 Ima Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This

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failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Ima

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Lp DS3 Ima Test bitsTx

Access: Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Ima

Values: Long Integer

Default: No default

ATTRIBUTE Lp DS3 Ima Test bytesTx

Access: Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib: Ima

Values: Long Integer

Default: No default

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ATTRIBUTE Lp DS3 Ima Test **frmTx**

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test **bitsRx**

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test **bytesRx**

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test **frmRx**

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ima
Values	Long Integer

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Default	No default

ATTRIBUTE Lp DS3 Ima Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Ima
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS3 Ima Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

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Mib	Ima
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS3 Ima Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Ima
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp DS3 Ima Link (Lk)

Instance	Decimal (0..31)
Groups	GROUP Lp DS3 Ima Lk Provisioned (Prov) GROUP Lp DS3 Ima Lk Operational (Oper) GROUP Lp DS3 Ima Lk Statistics (Stats) GROUP Lp DS3 Ima Lk OsiState (State)
Scope	Device
Description	*Lp/n Ima/n Link/n* *Lp/n Ds3/n Ima/n Link/n* This component is used to define a DS1/E1 link belonging to an IMA group. The instance number of the *Link* subcomponent corresponds to the link identifier (LID) used by the link in IMA Control Protocol (ICP) cells. To use Ima on an 8pDS1E1 function processor, add *Lp/n Ima/n Link/n*. To use Ima on a 4pDS3ChAtm function processor, add *Lp/n Ds3/n Ima/n Link/n*.
Mib	Ima
Common Verbs	Help List Display Add DELete

GROUP Lp DS3 Ima Lk Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Lk interfaceName

Access	Read and write
Criticality	Component
Description	This attribute associates the *Link* subcomponent with a specific interface on a function processor, for example *Lp/5 E1/3 Chan/0*. If IMA groups and independent links coexist on a card running IMA and per-VC queueing is enabled, plan the selection of DS1 or E1 ports to be used by the IMA group carefully. For a 4pDS3ChAtm function processor there is no per-VC queueing.
Mib	Ima
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Lp DS3 Ima Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Lk failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause on this link. Possible values are: ***noFailure***: there is no failure on this link. ***interfaceDown***: the physical port used by the link is down. ***lif***: the link is in loss of IMA frame (LIF) state. ***lods***: the link is in loss of delay synchronization (LODS) state; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group. It must be noted that hysteresis is used for the LODS condition. ***protocolError***: the link is down because of a time-out or because bad values are being received in IMA Control Protocol (ICP) cells. ***remoteFailure***: the far end link is down. ***misconnected***: the link is down because the IMA group has declared, after using its transmit test pattern procedure, that this link is not properly connected. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***unsupportedFrameLength***: the link is down because it is receiving from the far end a frame length which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***unsupportedSymmetry***: the link is down because it is receiving

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from the far end a group symmetry which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
noIcp: the link is down because it is not receiving IMA Control Protocol (ICP) cells. This value can occur only if the *protocol* for the IMA group is ***atmForum10***.
unsupportedVersion: the link is down because it is receiving from the far end a group version that is not supported by the local IMA group.

Mib: Ima

Values:
noFailure
interfaceDown
lif
lods
protocolError
remoteFailure
misconnected
unsupportedFrameLength
unsupportedSymmetry
unsupportedVersion
noIcp

Default: No default

ATTRIBUTE Lp DS3 Ima Lk **remoteDefect (remDef)**

Access: Read only

Description: This attribute indicates the IMA remote defect indicator (RDI) currently being received on this link. Possible values are:
noDefect: no defect.
physicalLayerDefect: the interface used by the remote link has a physical layer defect. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
interfaceDown: the physical interface used by the remote link is down.This value can occur only if the *protocol for the IMA group is* ***proprietary.***
lif: the remote link has a loss of IMA frame (LIF) defect.
lods: the remote link has a loss of delay synchronization (LODS) defect; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group.

Mib: Ima

Values:
noDefect
interfaceDown
lif
lods
physicalLayerDefect

Default: No default

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ATTRIBUTE Lp DS3 Ima Lk remoteLid (remLid)

Access	Read only
Description	This attribute indicates the link identifier (LID) used by the remote IMA group on the physical link. A value of 0 will be displayed if the link is not receiving IMA Control Protocol (ICP) cells or if the physical layer is down.
Mib	Ima
Values	Decimal (0..31)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk relativeDelay (rel)

Access	Read only
Description	This attribute indicates the latest measured differential delay (rounded up in milliseconds) between this link and the link, in the same IMA group, having the least delay. A value of 4294967295 indicates that the relative delay could not be measured. This can be due to physical layer problems or to no IMA Control Protocol (ICP) cells being received on the link.
Mib	Ima
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Lp DS3 Ima Lk lastOifCause (oif)

Access	Read only
Description	This attribute indicates the cause of the last out of IMA frame (OIF) anomaly on the link. Possible values are: ***noOif***: no OIF was detected. ***badFrameLength***: an IMA Control Protocol (ICP) cell with an unexpected frame length was received. ***badGid***: an ICP cell with an unexpected group identifier (GID) was received. ***badLid***: an ICP cell with an unexpected link identifier (LID) was received. ***badOffset***: an ICP cell with an unexpected cell offset was received. ***badSequenceNumber***: an ICP cell with an unexpected frame sequence number was received. ***stuffError***: an illegal stuffing sequence was received. ***missingIcp***: an expected ICP cell was not received. ***unexpectedIcp***: an unexpected ICP cell was received. ***erroredIcp***: two consecutive errored ICP cells were received. ***noCells***: no cells are being received on the link. ***idleCell***: an idle cell was received on the link. ***badOamLabel***: an ICP cell with an unexpected oam label was received.
Mib	Ima

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Values	noOif badFrameLength badGid badLid badOffset badSequenceNumber stuffError missingIcp unexpectedIcp erroredIcp noCells idleCell badOamLabel
Default	No default

GROUP Lp DS3 Ima Lk Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time (in seconds) for which the *Link* component has been running.
Mib	Ima
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp DS3 Ima Lk unavailSec (unavail)

Access	Read only
Description	For an IMA group whose *protocol* is ***atmForum10***, this attribute counts the number of unavailable seconds. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) and ends at the start of 10 contiguous seconds with no SES.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk failures (fail)

Access	Read only

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Description	This attribute counts the number of failures, during link addition or normal operation, that the link has experienced.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk unusableSec (uus)

Access	Read only
Description	This attribute counts the number of one second intervals during which the near end has been in an unusable state.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk sevErroredSec (ses)

Access	Read only
Description	This attribute counts the number of one second intervals in which at least 30 percent of the IMA Control Protocol (ICP) cells were counted as ICP violations or at least one link defect (physical layer, LIF and LODS defects) was detected. This attribute will not increment during UAS (Unavailable Second) conditions.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk farEndUnusableSec (feUus)

Access	Read only
Description	This attribute counts the number of one second intervals during which the “Tx/Rx Unusable” condition has been received from the far end.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk farEndSevErroredSec (feSes)

Access	Read only
Description	This attribute counts the number of one second intervals containing one or more RDI defects. This attribute will not increment during FEUAS (Far-End Unavailable Second) conditions.

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Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk farEndUnavailSec (feUnavail)

Access	Read only
Description	This attribute counts the number of unavailable seconds at the far end. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) at the far end and ends at the start of 10 contiguous seconds at the far end with no SES.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk icpViolations (iv)

Access	Read only
Description	This attribute counts the number of errored, invalid or missing IMA Control Protocol (ICP) cells during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk txStuffEvents (txStuff)

Access	Read only
Description	This attribute counts the number of Stuff events transmitted during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk rxStuffEvents (rxStuff)

Access	Read only
Description	This attribute counts the number of Stuff events received during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.
Mib	Ima
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Lp DS3 Ima Lk idleCellSec (idle)

Access	Read only
Description	This attributes counts the number of one second intervals during which one or more idle cells was received. The reception of idle cells is an abnormal condition which could be caused by the remote IMA using the Common Transmit Clock mode with ports whose clock sources are not synchronized.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp DS3 Ima Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS3 Ima Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 Ima Lk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS3 Ima Lk availabilityStatus (osiAvail)

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Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	Ima
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp DS3 Ima Lk proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Ima
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Ima
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Ima

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp DS3 Ima Lk **standbyStatus (osiStby)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Ima
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp DS3 Ima Lk unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ima
Values	false true
Default	false

COMPONENT Lp E3

Instance	Decimal (0..11)
Groups	GROUP Lp E3 Provisioned (Prov) GROUP Lp E3 CustomerIdentifierData (CidData) GROUP Lp E3 AdminInfo (AdminInfo) GROUP Lp E3 IfEntryProv (IfEntry) GROUP Lp E3 OperationalStatus (OperStatus) GROUP Lp E3 OsiState (State) GROUP Lp E3 Operational (Oper) GROUP Lp E3 Statistics (Stats)
Scope	Application

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Description	*LP/n E3/n* The *E3* component controls an E3 port on an E3 Function Processor.
Mib	LogicalProcessor
Opt. Subcomp.	COMPONENT Lp E3 G832 COMPONENT Lp E3 AtmCell (Cell)
Dyn. Subcomp.	COMPONENT Lp E3 Test (Test) COMPONENT Lp E3 Plcp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp E3 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *E3* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 lineLength (length)

Access	Read and write
Description	This attribute defines the line length for equalization calculations for the E3 line. The line length range is between 0 and 300 metres (1 metres = 3.28 feet).
Mib	LogicalProcessor
Values	Decimal (0..300)
Units	metres
Default	1

ATTRIBUTE Lp E3 clockingSource

Access	Read and write
Description	This attribute defines the type of clocking source used for synchronizing the E3 transmit clock: ***local*** means direct use of the local clock oscillator at its centre frequency; ***line*** means use of a signal phase-locked to the incoming E3 line rate; ***module*** means the use of a signal phase-locked to the CP reference clock. Note that the multiport cell-based cards have one common clock source

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for each of the three ports. For this reason, the following rules apply for the value of *clockingSource* across the board's three ports:
All three *clockingSource* values must be "***local***" OR
All three *clockingSource* values must be "***module***" OR
One *clockingSource* value must be "***line***" and the other two must be "***otherPort***".
The default value for this attribute will be ***module*** if a CP clock is available, and ***local*** otherwise.

Mib — LogicalProcessor

Values — local
line
module
otherPort

Default — No default

ATTRIBUTE Lp E3 applicationFramerName (framer)

Access — Read and write

Description

This attribute defines the link to the software stack. It defines which application is running on top of the *E3* component.

Mib — LogicalProcessor

Values — Link (Service, interfaceName)

Default — No default

ATTRIBUTE Lp E3 mapping

Access — Read and write

Description

This attribute indicates if ATM cells will be mapped directly into the E3 payload, or whether PLCP mapping will be used. The *PLCP* component will appear under the *E3* component when this attribute is set to ***plcp***. This attribute will be ignored when set on frame-based cards.

Mib — LogicalProcessor

Values — direct
plcp

Default — direct

ATTRIBUTE Lp E3 framing

Access — Read and write

Description

This attribute indicates if the framing mode will be in accordance with the CCITT G.751 or G.832 specification. The *G832* component will appear under the *E3* component when this attribute is set to ***g832***. This attribute

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may only be set on cell-based card types. Note also that this attribute may only be set to ***g751*** if the *mapping* attribute is set to ***plcp***.
The default value of this attribute will be ***g751*** for frame-based cards, and ***g832*** for cell-based cards.
Note: when *E3 framing* is changed from ***g832*** to ***g751***, the *G832* component must be deleted.

Mib	LogicalProcessor
Values	g751 g832
Default	No default

ATTRIBUTE Lp E3 linkAlarmActivationThreshold

Access	Read and write
Description	This attribute specifies the time interval between the detection of a sustained link failure and the activation of an alarm. It is provisionable for E3 cards.
Mib	LogicalProcessor
Values	Decimal (100..2600)
Units	msec
Default	2200

ATTRIBUTE Lp E3 linkAlarmScanInterval

Access	Read and write
Description	This attribute specifies the alarm scan timer polling interval. It determines how frequently the status of the link is monitored after a first link error interrupt. It is provisionable for E3 cards.
Mib	LogicalProcessor
Values	Decimal (50..250)
Units	msec
Default	200

GROUP Lp E3 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

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ATTRIBUTE Lp E3 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp E3 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp E3 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.

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Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp E3 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp E3 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp E3 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor

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Values	Decimal (1..65535)
Default	No default

GROUP Lp E3 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp E3 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting

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down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — LogicalProcessor

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp E3 operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — LogicalProcessor

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp E3 usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp E3 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

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The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp E3 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

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The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: LogicalProcessor

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp E3 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp E3 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — LogicalProcessor

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp E3 standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

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The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — LogicalProcessor

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE Lp E3 unknownStatus (osiUnknw)

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — LogicalProcessor

Values
false
true

Default — false

GROUP Lp E3 Operational (Oper)

Properties — Operational

Description

This group contains the common operational data for *E3* component.

Mib — LogicalProcessor

ATTRIBUTE Lp E3 losAlarm (los)

Access — Read only

Description

This attribute displays whether a Loss Of Signal (LOS) alarm state has been entered. An LOS alarm state is entered when LOS defects has been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOS defect is detected at the E3 line interface upon observing N continuous pulse positions with no pulses of either positive or negative polarity, where N is between 10 and 255. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *E3* component goes into an operational state of *disabled* until the LOS

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alarm condition is cleared. The LOS alarm state is cleared when the LOS defects are absent for a period of 10 seconds +/- 0.5 seconds.
The *losAlarm* attribute is always set to *off* when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default off

ATTRIBUTE Lp E3 lofAlarm (lof)

Access Read only

Description

This attribute displays whether a Loss Of Frame (LOF) alarm state has been entered. An LOF alarm state is entered when Severely Errored Frame (SEF) defects have been detected and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An E3 SEF defect is reported after detecting Frame Alignment Signal (FAS) errors on 4 consecutive E3 frames received on the incoming line. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *E3* component goes into an operational state of *disabled* until the LOF alarm condition is cleared. The condition is cleared when E3 framing has been achieved for a period of 10 seconds +/- 0.5 seconds. As long as SEF defects are detected, the node also transmits the far-end SEF/AIS (in G.751 E3) or FERF (in G.832) defect indicator over the outgoing line. The *txRai* attribute is set to *on* when transmitting the far-end SEF/AIS defect indicator on the outgoing line.
The *lofAlarm* attribute is always set to *off* when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default off

ATTRIBUTE Lp E3 rxAisAlarm (rxAis)

Access Read only

Description

This attribute displays whether an Alarm Indication Signal (AIS) alarm when state has been entered. An AIS alarm state is entered when AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds on the incoming E3 line. An AIS defect is the occurrence of the AIS (unframed signal with a density of zeros below a certain threshold such as defined by ITU Recommendation G.775). If the AIS defects are intermittently occurring, the AIS defect accumulator is

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decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *E3* component goes into an operational state of *disabled* until the AIS alarm condition is cleared (after AIS has been no longer detected for a period of 10 seconds +/- 0.5 seconds). As long as AIS is detected on the incoming line, the node also transmits the far-end SEF/AIS (in G.751 E3) or FERF (in G.832) defect indicator over the outgoing line. The *txRai* attribute is set to *on* when transmitting the far-end SEF/AIS defect indicator on the outgoing line.
The *rxAisAlarm* attribute is always set to *off* when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values:
on
off

Default: off

ATTRIBUTE Lp E3 rxRaiAlarm (rxRai)

Access: Read only

Description

This attribute displays whether a Remote Alarm Indication (RAI) alarm state has been entered. A RAI alarm state is entered when far-end SEF/AIS defects (or Far-End Receive Failure (FERF) defects in G.832 E3 Framing mode) have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds on the E3 incoming line. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *E3* component goes into an operational state of *disabled* until the RAI alarm condition is cleared. The condition is cleared when the far-end defect indicator has not been detected for 10 seconds +/- 0.5 seconds. The declaration of a RAI Alarm is usually a signal that the far end facility is unable to gain synchronization.
The *rxRaiAlarm* attribute is always set to *off* when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values:
on
off

Default: off

ATTRIBUTE Lp E3 txAis

Access: Read only

Description

This attribute displays whether an AIS alarm is being transmitted on the E3 line. AIS is transmitted on the outgoing line when the *E3* component is locked and not used for operational testing.

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Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E3 txRai

Access	Read only
Description	This attribute displays whether the far-end SEF/AIS defect indicator is transmitted over the outgoing line when the *E3* component has been unlocked or used in operational testing. When the *E3* component is locked and not used in operational testing, this attribute is always set to *off*. The far-end SEF/AIS defect indicator is transmitted over the outgoing line when SEF/AIS defects are detected on the incoming line. In G.832 E3 Framing mode, the FERF bit is set to '1' to transmit the SEF/AIS defect indicator.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp E3 Statistics (Stats)

Properties	Operational
Description	This group contains the common operational data for *E3* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 runningTime (time)

Access	Read only
Description	This attribute indicates the total number of seconds since the *E3* component has been activated and been in unlocked state or used for operational testing. All the other error counts that follow as well as each E3 subcomponent's error counts can be updated when this count is active.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	seconds
Default	0

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ATTRIBUTE Lp E3 errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds that the E3 port has been in an error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 lineCodeViolations (lcv)

Access	Read only
Description	This attribute indicates the total number of Line Code Violations (LCV) detected. An E3 Line Code Violation is an HDB3 coded signal error. LCV counting is inhibited for second intervals where a Line Severely Errored Second (LSES) is counted. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 lineErroredSec (les)

Access	Read only
Description	This attribute indicates the total number of Line Errored Seconds (LES) that have been counted. A LES is declared for interval seconds containing one or more Line Code Violations (LCV) or one or more Loss Of Signal (LOS) defects.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 lineSevErroredSec (lses)

Access	Read only
Description	This attribute indicates the total number of Line Severely Errored Seconds (LSES) that have been counted. A LSES is declared for second intervals

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containing more than 34 Line Code Violations (LCV) or one or more Loss of Signal (LOS) defects.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 lineLosSec (loss)

Access	Read only

Description

This attribute indicates the total number of Line LOS Seconds (LOSS) that have been counted. A LOSS is declared for second intervals containing one or more Loss of Signal (LOS) defects.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 lineFailures (lf)

Access	Read only

Description

This attribute indicates the total number of times that a line failure (LOS failure) has been declared.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 pathCodeViolations (pcv)

Access	Read only

Description

This attribute indicates the total number of Path Code Violations (PCV) detected. An E3 PCV is an error in the Frame Alignment (FA) signal, or, in G.832 Framing Mode, an error in the Frame Alignment signal or a BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

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Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 pathErroredSec (pes)

Access	Read only
Description	This attribute indicates the total number of Path Errored Seconds (PES) that have been counted. A PES is declared for second intervals containing one or more Path Code Violations (PCV) or one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of Path Errored Seconds is inhibited when a Path Unavailable Second (PUAS) is counted over the monitored second.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 pathSevErroredSec (pses)

Access	Read only
Description	This attribute indicates the total number of Path Severely Errored Seconds (PSES) that have been counted. A PSES is declared for second intervals containing more than 22 (G.751 E3) or 34 (G.832 E3) Path Code Violations (PCV) or one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of PSESs is inhibited when a Path Unavailable Second (PUAS) is counted over the monitored second.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 pathSefAisSec (psas)

Access	Read only
Description	This attribute indicates the total number of Path SEF/AIS Seconds (PSAS). A PSAS is declared for second intervals containing one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of PSAS is inhibited when Path Unavailable Seconds (PUAS) is counted over the monitored second.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Lp E3 pathUnavailSec (puas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the E3 path is unavailable. The E3 path becomes unavailable at the onset of 10 consecutive Path Severely Errored Seconds (PSES). The 10 PSESs are included in the unavailable time. Once unavailable, the E3 path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where PUAS is counted, counting of Path Code Violations (PCV), Path Errored Seconds (PES), Path Severely Errored Seconds (PSES) and Path SefAis Seconds (PSAS) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 pathFailures (pf)

Access	Read only
Description	This attribute indicates the total number of times that a path failure (LOF/ AIS failure) has been declared. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp E3 Test (Test)

Groups	GROUP Lp E3 Test OsiState (State) GROUP Lp E3 Test Setup (Setup) GROUP Lp E3 Test Results (Results)
Scope	Application

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Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs
Help
List
Display

VERB START Lp E3 Test

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp E3 Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Lp E3 Test **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp E3 Test **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — LogicalProcessor

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp E3 Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — LogicalProcessor

Values
enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp E3 Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — LogicalProcessor

Values
idle
active (activ)
busy

Default — idle

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GROUP Lp E3 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp E3 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.

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Mib	LogicalProcessor
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp E3 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	LogicalProcessor
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp E3 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

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ATTRIBUTE Lp E3 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp E3 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp E3 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp E3 Test duration

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Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp E3 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

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a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib — LogicalProcessor

Values — testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default — neverStarted

ATTRIBUTE Lp E3 Test bitsTx

Access — Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib — LogicalProcessor

Values — Long Integer

Default — No default

ATTRIBUTE Lp E3 Test bytesTx

Access — Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib — LogicalProcessor

Values — Long Integer

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Default	No default

ATTRIBUTE Lp E3 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor

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Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp E3 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an

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externalLoop test. For a data test, it indicates time since test data was first transmitted.

Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp E3 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp E3 G832

Groups	GROUP Lp E3 G832 Provisioned GROUP Lp E3 G832 Operational GROUP Lp E3 G832 Statistics (Stats)
Scope	Application
Description	G832 The *G832* component is configured to display all E3 G832 related operational and statistical data. It will appear under the *E3* components when the *E3 framing* attribute is set to ***g832***. Note: when *E3 framing* is changed from ***g832*** to ***g751***, the *G832* component must be deleted.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp E3 G832 Provisioned

Properties	Provisioned
Description	This group contains the provisionable data for the G832 component.

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Mib	LogicalProcessor

ATTRIBUTE Lp E3 G832 trailTraceTransmitted

Access	Read and write
Description	This attribute indicates the E.164 address which is to be encoded in the trail access point identifier, which is transmitted using the Trail Trace (TR) field of the transmitted E3 Frame. Both the expected trail access point identifier and the transmitted trail access point identifier are provisionable attributes of the *G832* component. The 16 byte Trail Trace frame is composed of one byte containing a frame start marker and a CRC-7 calculation over the previous frame, and 15 bytes for transporting an E.164 address. If less than the full 15 bytes are used, the address is padded with NULL characters.
Mib	LogicalProcessor
Values	String (0..15, ASCII)
Default	""

ATTRIBUTE Lp E3 G832 trailTraceExpected

Access	Read and write
Description	This attribute indicates the E.164 address which is expected in the trail access point identifier, which is transmitted using the Trail Trace (TR) field of the transmitted E3 Frame. Both the expected trail access point identifier and the transmitted trail access point identifier are provisionable attributes of the *G832* component. The 16 byte Trail Trace frame is composed of one byte containing a frame start marker and a CRC-7 calculation over the previous frame, and 15 bytes for transporting an E.164 address. If less than the full 15 bytes are used, the address is padded with NULL characters.
Mib	LogicalProcessor
Values	String (0..15, ASCII)
Default	""

GROUP Lp E3 G832 Operational

Properties	Operational
Description	This group contains the operational data for the G832 component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 G832 unexpectedPayloadType (upt)

Access	Read only

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Description

This attribute displays whether the Unexpected Payload Type (UPT) alarm state has been entered. The UPT alarm state is entered when UPT defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The UPT defect is reported when a received frame fails to agree with the expected Payload Type. If the UPT defects are intermittently occurring, the UPT defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle..
The UPT alarm is cleared when the Payload Type in the received frame agrees with the expected Payload Type for a period of 10 seconds +/- 0.5 seconds.
The *unexpectedPayloadType* attribute is always set to *off* when the *E3* component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp E3 G832 trailTraceMismatch (ttm)

Access: Read only

Description

This attribute displays whether the Trail Trace Mismatch (TTM) alarm state has been entered. The TTM alarm state is entered when TTM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TTM defect is reported when the trail access point identifier contained in the Trail Trace (TR) field in the received frame fails to agree with the expected identifier. If the TTM defects are intermittently occurring, the TTM defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The TTM alarm is cleared when the trail access point identifier in the received frame agrees with the expected identifier for a period of 10 seconds +/- 0.5 seconds.
The *trailTraceMismatch* attribute is always set to *off* when the *E3* component has been *locked* and left *offline*.
Both the expected trail access identifier and the transmitted trail access identifier are provisionable attributes of the G832 component.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp E3 G832 timingMarker

Access: Read only

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Description

Indicates whether or not the timing source at the far-end node is traceable to a Primary Reference Clock.
The *timingMarker* indication is controlled by the timing marker bit in the G832 MA byte. If the received timing marker bit is 1 for five consecutive frames, and five consecutive 0s are not received for two seconds, the *timingMarker* indication will be set to ***not traceable***. If the received timing marker bit is 0 for five consecutive frames and five consecutive 1s are not received for two seconds, the *timingMarker* indication will be set to ***traceable***.

Mib — LogicalProcessor

Values — not traceable
traceable

Default — No default

ATTRIBUTE Lp E3 G832 trailTraceReceived

Access — Read only

Description

This attribute indicates the 15 byte E.164 address which is currently being received in the trail trace (TR) field of the E3 G832 frame. If this attribute differs from the provisioned trailTraceTransmitted string a trail trace mismatch (TTM) defect is reported, possibly resulting in a TTM alarm, as described for operational attribute *trailTraceMismatch*.

Mib — LogicalProcessor

Values — String (0..15, ASCII)

Default — No default

GROUP Lp E3 G832 Statistics (Stats)

Properties — Operational

Description

This group contains the statistical data for the G832 component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib — LogicalProcessor

ATTRIBUTE Lp E3 G832 farEndErrorFreeSec (feefs)

Access — Read only

Description

This attribute indicates the number of seconds that the E3 line has not suffered any G832 errors.

Mib — LogicalProcessor

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 G832 farEndCodeViolations (fecv)

Access	Read only
Description	A count of E3 frames containing a Far-End Block Error (FEBE). A FEBE is reported over the FEBE bit each time the far-end terminal detects a BIP-8 error in a received E3 frame. For second intervals where Far End Unavailable Seconds (FEUAS) or Far End Severely Errored Seconds (FESES) are counted, counting of FECVs is inhibited. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 G832 farEndErroredSec (fees)

Access	Read only
Description	This attribute indicates the total number of Far-End Errored Seconds (FEES). A FEES is declared for second intervals containing with one or more Far-End Coding Violations (FECV) or one or more Far-End Receive Failure (FERF) defects. A FERF defect occurs when the FERF bit in the received frame is set to one. For second intervals where Far End Unavailable Seconds (FEUAS) are counted, counting of FEESs is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 G832 farEndSevErroredSec (feses)

Access	Read only
Description	This attribute indicates the total number of Far-End Severely Errored Seconds (FESESs). A FESES is declared for second intervals containing more than 34 Far-End Coding Violations (FECV) or one or more Far-End Receive Failure (FERF) defects. For second intervals where a Far-End Severely Errored Seconds (FESES) is counted, counting of FECVs is inhibited. For second intervals where Far End Unavailable Seconds (FEUAS) are counted, counting of FESESs is inhibited.
Mib	LogicalProcessor

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 G832 farEndSefAisSec (fesas)

Access	Read only
Description	This attribute indicates the total number of Far-End SEF/AIS Seconds (FESAS). A FESAS is declared for second intervals containing one or more Far-End Receive Failure (FERF) defects. For second intervals where Far End Unavailable Seconds (FEUAS) are counted, counting of FESAS is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 G832 farEndUnavailSec (feuas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the E3 far-end path is unavailable. The E3 far-end path becomes unavailable at the onset of 10 consecutive Far End Severely Errored Seconds (FESES). It comes available at the onset of 10 contiguous seconds with no FESES. The unavailable time includes the initial 10 seconds to enter the unavailable state but not the 10 seconds to exit the state For second intervals where FEUAS is counted, counting of Far End Coding Violations (FECV), Far-End Errored Seconds (FEES), Far-End Severely Errored Seconds (FESES) and Far-End SefAis Seconds (FESAS) are inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp E3 Plcp

Groups	GROUP Lp E3 Plcp Operational GROUP Lp E3 Plcp Statistics (Stats)
Scope	Application
Description	*LP/n DS3/n PLCP* *LP/n E3/n PLCP* The *PLCP* component is configured to display all DS3/E3 PLCP related

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operational and statistical data. It will appear under the *DS3* or *E3* components when the *mapping* attribute is set to ***plcp***.

Mib LogicalProcessor

Common Verbs
Help
List
Display

GROUP Lp E3 Plcp Operational

Properties Operational

Description

This group contains the operational data for the *PLCP* component.

Mib LogicalProcessor

ATTRIBUTE Lp E3 Plcp lofAlarm (lof)

Access Read only

Description

This attribute displays whether a PLCP Loss Of Frame (LOF) failure alarm state has been entered. An LOF failure is declared when a PLCP LOF defect persists for 2.5 s +/- 0.5 s. An LOF defect occurs when an OOF (Out of Frame) state persists for more than 1 ms. If the OOF events are intermittent, the LOF defect counter is decremented at a rate of 1/12 (for DS3 PLCP) or 1/9 (for G.751 E3 PLCP) of the incrementing rate, with all measurements based on a 200 ms polling cycle. An OOF event (also known as a PLCP SEF event) is declared when an error is detected in both the A1 and A2 octets, or when two consecutive POHIDs are found in error.
OOF is removed when two valid sets of framing octets and two valid and sequential POHID octets have been found. The LOF defect is removed when the defect counter reaches zero, i.e. when OOF events are absent for more than 12 ms (DS3 PLCP) or 9 ms (G.751 E3 PLCP). LOF failure alarm is cleared when LOF defect is absent for 10.0 s +/- 0.5 s
The *DS3* or *E3* component goes into an operational state of *disabled* until the LOF failure alarm is cleared. The terminal declaring the LOF failure alarm will transmit a PLCP RAI signal to the far-end for the duration of the alarm.
The *lofAlarm* attribute is always set to *off* when the *DS3* or *E3* component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default off

ATTRIBUTE Lp E3 Plcp rxRaiAlarm (rxrai)

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Access	Read only
Description	This attribute displays whether a PLCP Remote Alarm Indication (RAI) failure alarm state has been entered. An RAI failure alarm occurs when ten consecutive PLCP RAI bits (bit 5 in the G1 byte) are high on the incoming line. An RAI failure alarm is cleared when ten consecutive RAI bits are set to 0. Note: Some standards call this alarm RFI. The *rxRaiAlarm* attribute is always set to *off* when the *DS3* or *E3* component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp E3 Plcp Statistics (Stats)

Properties	Operational
Description	This group contains the statistical data for the *PLCP* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 Plcp errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds during which the near-end PLCP path layer had no errors.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp codingViolations (cv)

Access	Read only
Description	This attribute indicates the total number of BIP-8 Errors, framing pattern octet errors, and path overhead identification errors detected in received PLCP frames. Counting of PLCP CV is inhibited for second intervals where PLCP Severely Errored Framing Seconds (SEFS) or PLCP Unavailable Seconds (UAS) are counted.

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This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Plcp erroredSec (es)

Access Read only

Description

This attribute indicates the number of seconds containing one or more PLCP Coding Violations (CV) or in which a PLCP Severely Errored Framing Second (SEFS) was counted.
Counting of PLCP ES is inhibited during second intervals where PLCP Unavailable Seconds (UAS) are counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Plcp sevErroredSec (ses)

Access Read only

Description

This attribute indicates the number of seconds containing 5 or more PLCPCVs or in which a PLCPSEFS was counted (i.e. a PLCP OOF event occurred).
Counting of PLCP SES is inhibited during second intervals where PLCP Unavailable Seconds (UAS) are counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Plcp sevErroredFramingSec (sefs)

Access Read only

Description

This attribute indicates the number of seconds containing one or more PLCP Severely Errored Frame (SEF) events. An SEF event is equivalent to a PLCP OOF (Out of Frame) event.
Counting of PLCPP SEFSs is inhibited for second intervals where PLCP Unavailable Seconds (UAS) are counted.

Mib LogicalProcessor

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp unavailSec (uas)

Access	Read only
Description	This attribute indicates the number of seconds when the near-end PLCP layer is unavailable. The PLCP Path Layer becomes unavailable at the declaration of PLCP LOF (Loss of Frame) failure alarm state. The PLCP Path Layer becomes available again only after clearing this condition. For second intervals where PLCP UAS are counted, counting of PLCP Severely Errored Framing Seconds (SEFS), PLCP Coding Violations (CV), PLCP Errored Seconds (ES), PLCP Severely Errored Seconds (SES) and PLCP Far-End Severely Errored Seconds (FESES) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp farEndErrorFreeSec (feefs)

Access	Read only
Description	This attribute indicates the number of seconds during which the far-end PLCP path layer had no errors.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp farEndCodingViolations (fecv)

Access	Read only
Description	This attribute indicates the total number of PLCP Far-End Block Errors (FEBE) reported by the far-end terminal. Counting of FEBEs is inhibited for second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp E3 Plcp farEndErroredSec (fees)

Access	Read only
Description	This attribute indicates the number of seconds containing one or more PLCP Far-End Coding Violations (FECV). Counting of PLCP FEES is inhibited during second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp farEndSevErroredSec (feses)

Access	Read only
Description	This attribute indicates the number of seconds containing 5 or more PLCP Far-End Coding Violations (FECV). Counting of PLCP FESES is inhibited for second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp farEndUnavailableSec (feuas)

Access	Read only
Description	This attribute indicates the number of seconds during which the PLCP far end is unavailable. The PLCP Path Layer becomes unavailable at the declaration of PLCP RAI (Remote Alarm Indication). Service becomes available again after this condition is cleared. For second intervals where PLCP FEUAS are counted, counting of PLCP Far-End Coding Violations (FECV), PLCP Far-End Errored Seconds (FEES), and PLCP Far-End Severely Errored Seconds (FESES) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp E3 AtmCell (Cell)

Groups	GROUP Lp E3 Cell Provisioned (Prov) GROUP Lp E3 Cell Operational (Oper) GROUP Lp E3 Cell Statistics (Stats)

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Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp E3 Cell Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 Cell alarmActDelay (act)

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	LogicalProcessor
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp E3 Cell scrambleCellPayload (scramble)

Access	Read and write

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Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib: LogicalProcessor

Values:
off
on

Default: No default

ATTRIBUTE Lp E3 Cell correctSingleBitHeaderErrors

Access: Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: LogicalProcessor

Values:
off
on

Default: off

ATTRIBUTE Lp E3 Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (0..60)

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Units	minutes
Default	0

ATTRIBUTE Lp E3 Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp E3 Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp E3 Cell lcdStateDelay (delay)

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Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp E3 Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..25)
Default	1

GROUP Lp E3 Cell Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes for the *AtmCell* component.
Mib	LogicalProcessor

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ATTRIBUTE Lp E3 Cell lcdAlarm (lcd)

Access	Read only
Description	This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute. In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected. For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect. If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds. The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp E3 Cell Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 Cell uncorrectableHeaderErrors (ucErr)

Access	Read only
Description	This attribute indicates the number of uncorrectable ATM cell header

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errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

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Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp E3 Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp E3 Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS1

Instance	Decimal (0..31)
Groups	GROUP Lp DS1 Provisioned (Prov) GROUP Lp DS1 CustomerIdentifierData (CidData) GROUP Lp DS1 AdminInfo (AdminInfo) GROUP Lp DS1 IfEntryProv (IfEntry) GROUP Lp DS1 OperationalStatus (OperStatus) GROUP Lp DS1 OsiState (State) GROUP Lp DS1 Operational (Oper) GROUP Lp DS1 Statistics (Stats)

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Scope	Application
Description	*Lp/n DS1/n* The *DS1* component controls and monitors a DS1 port on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pDS1Aal1: 4 port. The lowest instance value is always ***0***. Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (A DS1 “ATM UNI port” is a *DS1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.) The instance number of a *DS1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.
Mib	LogicalProcessor
Subcomponents	COMPONENT Lp DS1 Channel (Chan)
Dyn. Subcomp.	COMPONENT Lp DS1 Test (Test) COMPONENT Lp DS1 Dsp COMPONENT Lp DS1 Audio
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS1 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a DS1 component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 lineType (lineType)

Access	Read and write
Description	This attribute defines the framing of the DS1 line. ***d4*** defines a framing pattern of 12 frames per multiframe. ***esf*** defines a framing pattern of 24 frames per multiframe. ***d4Cas*** defines a framing pattern of 12 frames per multiframe with channel associated signalling. ***esfCas*** defines a framing pattern of 24 frames per multiframe with channel associated signalling. ***unframed*** defines an unknown framing pattern for clear channels.

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For cell-based cards only the default option ***esf*** is permitted.

Mib: LogicalProcessor

Values:
d4
esf
d4Cas
esfCas
unframed

Default: esf

ATTRIBUTE Lp DS1 zeroCoding (zeroCoding)

Access: Read and write

Criticality: Component

Description

This attribute defines the zero encoding on the DS1 line.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
b8zs substitutes a pattern of bipolar violations if more than 7 zeros in a row are to be transported.
ami specifies Alternate Mark Inversion, in which successive marks (ones) alternate between positive and negative polarity voltage signals, and spaces (zeros) are sent as a zero amplitude signal.
When *zeroCoding* is set to ***ami*** and l*ineType* is set to ***d4***, it is recommended that *raiAlarmType* be set to ***SBit*** in order to avoid possible mimic RAI alarm.

For cell-based cards, only the default value ***b8zs*** is permitted.

The value *ami* should be used with caution. If the ones density of the traffic is not sufficiently high, the DS1 will lose clock synchronization.

Mib: LogicalProcessor

Values:
bit7Stuffing
b8zs
ami

Default: b8zs

ATTRIBUTE Lp DS1 clockingSource (clockingSource)

Access: Read and write

Description

This attribute defines the source of the transmit clock for the DS1 line.

When ***local*** is selected, the crystal on the port generates the clocking for the line.

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When ***line*** is selected, the port synchronizes to the clock from the facility.

When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP.

When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***.

When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network.

When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network.

A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured***

If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pDS1Atm*** card, which it defaults to ***local***.

On a ***3pDS1Atm*** card all ports must have the same value, and be either ***local*** or ***module***.

otherPort is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards.
On ***4DS1Aal1*** cards either:

all four ports' *clockingSource* values must be ***local*** OR
all four ports' *clockingSource* values must be ***module*** OR
one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. A port can only have ***srtsMode*** selected if the other ports are ***module*** or ***srtsMode***.

Mib — LogicalProcessor

Values
local
line
module
otherPort
srtsMode
adaptiveMode

Default — No default

ATTRIBUTE Lp DS1 raiAlarmType (raiType)

Access — Read and write

Description

This attribute defines the method of sending a RAI (Remote Alarm

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Indication) alarm on a DS1 line.
When ***SBit*** is selected, RAI alarm is sent by setting the S bit in frame 12.
When ***Bit2*** is selected, RAI alarm is sent by setting bit 2 in all timeslots to 0.
When ***fdl*** is selected, RAI alarm is sent by a repeating pattern of 00 hex and FF hex on the FDL link.
Note that for *lineType* of ***d4***, only the SBit and the Bit2 methods are applicable. Whereas for *lineType* of ***esf***, only the Bit2 and the ***fdl*** methods are applicable.
SBit method is recommended if *lineType* is set to ***d4*** and *zeroCoding* is set to ***ami***. This will help to avoid potential mimic RAI alarm when 1's density is too low in the data transmitted.
For cell-based cards, only the default value ***fdl*** is permitted.

Mib: LogicalProcessor

Values:
sBit
bit2
fdl

Default: fdl

ATTRIBUTE Lp DS1 lineLength (lineLength)

Access: Read and write

Description:
This attribute defines the line length (in feet) for equalization calculations for the DS1 line. The value ranges between 0-655. For ***8pDS1Atm*** cards the actual value used for equalization is rounded up to the nearest 110 feet; for all other card types the actual value used is rounded to the nearest 50 feet.

Mib: LogicalProcessor

Values: Decimal (0..655)

Default: 0

GROUP Lp DS1 CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: LogicalProcessor

ATTRIBUTE Lp DS1 customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the

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component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp DS1 includeAdminInfoInAlarm

Access	Read and write

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Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp DS1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS1 OperationalStatus (OperStatus)

Properties	Operational

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Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp DS1 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp DS1 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

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Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

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The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp DS1 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp DS1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS1 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp DS1 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp DS1 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp DS1 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 losAlarm (losAlarm)

Access	Read only
Description	This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the

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duration of the LOS alarm state.
The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp DS1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms £ T £ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp DS1 lofAlarm (lofAlarm)

Access Read only

Description

This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the

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duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp DS1 rxRaiAlarm (rxRaiAlarm)

Access Read only

Description

This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time).
The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp DS1 txAisAlarm (txAisAlarm)

Access Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.

Mib LogicalProcessor

Values on
off

Default off

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ATTRIBUTE Lp DS1 txRaiAlarm (txRaiAlarm)

Access	Read only
Description	This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp DS1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 runningTime (runningTime)

Access	Read only
Description	The number of seconds since the port component was activated.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 errorFreeSec (efs)

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 erroredSec (es)

Access	Read only
Description	An errored second is declared when a second with one or more Code

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Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS1 sevErroredSec (ses)

Access Read only

Description

A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS1 sevErroredFrmSec (sefs)

Access Read only

Description

A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS1 unavailSec

Access Read only

Description

The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS1 bpvErrors (bpvErrors)

Access Read only

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Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 crcErrors (crcErrors)

Access	Read only
Description	If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 frmErrors (frmErrors)

Access	Read only
Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 losStateChanges (losChanges)

Access	Read only
Description	The total number of times that the line lost signal.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip.

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This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp DS1 Channel (Chan)

Instance Decimal (0..24)

Groups
GROUP Lp DS1 Chan Provisioned (Prov)
GROUP Lp DS1 Chan CustomerIdentifierData (CidData)
GROUP Lp DS1 Chan IfEntryProv (IfEntry)
GROUP Lp DS1 Chan OperationalStatus (OperStatus)
GROUP Lp DS1 Chan OsiState (State)
GROUP Lp DS1 Chan Operational (Oper)
GROUP Lp DS1 Chan AdminInfo (AdminInfo)

Scope Application

Description
Channel
The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port.
Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.

Mib LogicalProcessor

Opt. Subcomp.
COMPONENT Lp DS1 Chan AtmCell (Cell)
COMPONENT Lp DS1 Chan TrunkConditioning (Tc)

Dyn. Subcomp. COMPONENT Lp DS1 Chan Test (Test)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp DS1 Chan Provisioned (Prov)

Properties Provisioned

Description
This group contains all of the provisional data for a *Channel* component.

Mib LogicalProcessor

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ATTRIBUTE Lp DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.
Mib	LogicalProcessor
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Lp DS1 Chan timeslotDataRate (dataRate)

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Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s. When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s. On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***. One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.
Mib	LogicalProcessor
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Lp DS1 Chan applicationFramerName

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp DS1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS1 Chan ifIndex (ifI)

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Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp DS1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS1 Chan operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS1 Chan usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp DS1 Chan proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — LogicalProcessor

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp DS1 Chan controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS1 Chan alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp DS1 Chan standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — LogicalProcessor

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE Lp DS1 Chan unknownStatus (osiUnknw)

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — LogicalProcessor

Values
false
true

Default — false

GROUP Lp DS1 Chan Operational (Oper)

Properties — Operational

Description

This group contains all of the operational data for a *Channel* component.

Mib — LogicalProcessor

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ATTRIBUTE Lp DS1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Lp DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Chan includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the

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comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.

Mib	LogicalProcessor
Values	no yes
Default	no

COMPONENT Lp DS1 Chan Test (Test)

Groups	GROUP Lp DS1 Chan Test OsiState (State) GROUP Lp DS1 Chan Test Setup (Setup) GROUP Lp DS1 Chan Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS1 Chan Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS1 Chan Test usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp DS1 Chan Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Chan Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test.

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externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp DS1 Chan Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp DS1 Chan Test frmPatternType (fpt)

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Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp DS1 Chan Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp DS1 Chan Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS1 Chan Test displayInterval (di)

Access	Read and write

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Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS1 Chan Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS1 Chan Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time

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specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: LogicalProcessor

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Lp DS1 Chan Test bitsTx

Access: Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

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Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

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Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the

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exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Chan Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS1 Chan Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp DS1 Chan AtmCell (Cell)

Groups	GROUP Lp DS1 Chan Cell Provisioned (Prov) GROUP Lp DS1 Chan Cell Operational (Oper) GROUP Lp DS1 Chan Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM

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cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib LogicalProcessor

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp DS1 Chan Cell Provisioned (Prov)

Properties Provisioned

Description
This group contains the provisioning attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS1 Chan Cell alarmActDelay (act)

Access Read and write

Description
This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib LogicalProcessor

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp DS1 Chan Cell scrambleCellPayload (scramble)

Access Read and write

Description
Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

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Mib	LogicalProcessor
Values	off on
Default	No default

ATTRIBUTE Lp DS1 Chan Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp DS1 Chan Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp DS1 Chan Cell hecSampleInterval (hSample)

Access	Read and write

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Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp DS1 Chan Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp DS1 Chan Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The

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valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	LogicalProcessor
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp DS1 Chan Cell **hecErrorIntervalLimit (hIntLimit)**

Access	Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	LogicalProcessor
Values	Decimal (1..25)
Default	1

GROUP Lp DS1 Chan Cell **Operational (Oper)**

Properties	Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan Cell **lcdAlarm (lcd)**

Access	Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects

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have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib — LogicalProcessor

Values — on
off

Default — off

GROUP Lp DS1 Chan Cell Statistics (Stats)

Properties — Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib — LogicalProcessor

ATTRIBUTE Lp DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access — Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib — LogicalProcessor

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 Chan Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 Chan Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp DS1 Chan Cell transmitCellUtilization (txutil)

Access	Read only

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Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp DS1 Chan Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS1 Chan TrunkConditioning (Tc)

Groups	GROUP Lp DS1 Chan Tc Provisioned (Prov) GROUP Lp DS1 Chan Tc Operational (Op)
Scope	Device
Description	*Lp/n Ds1/n Chan/n Tc* *Lp/n E1/n Chan/n Tc* *Lp/n Ds3/n Ds1/n Chan/n Tc* *Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc* *Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc* *Laps/n* Vc4/n Vc12/k,l,m E1 Chan/n T*c* *Laps/n* Sts/n Vt1dot5/l,m Ds1 Chan/n T*c* The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service. Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk

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conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib — LogicalProcessor

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP Lp DS1 Chan Tc Provisioned (Prov)

Properties — Provisioned

Description — This group contains all specific provisioning data for a *Tc* component.

Mib — LogicalProcessor

ATTRIBUTE Lp DS1 Chan Tc replacementData (data)

Access — Read and write

Description — This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

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On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib	LogicalProcessor
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Lp DS1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp DS1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	LogicalProcessor

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Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Lp DS1 Chan Tc signalOne (sigOne)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Lp DS1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Lp DS1 Chan Tc Operational (Op)

Properties	Operational

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Description	This group contains all specific operational data for a *Tc* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp DS1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the PDH line under the following conditions: bufferUnderflow (BU) AAL1 protocol errors.

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Mib	LogicalProcessor
Values	off on
Default	off

COMPONENT Lp DS1 Test (Test)

Groups	GROUP Lp DS1 Test OsiState (State) GROUP Lp DS1 Test Setup (Setup) GROUP Lp DS1 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp DS1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Test adminState (osiAdmin)

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS1 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS1 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LogicalProcessor

Values:
idle
active (activ)
busy

Default: idle

GROUP Lp DS1 Test Setup (Setup)

Properties: Operational

Description:
This group contains all of the operational data for a *Test* component.

Mib: LogicalProcessor

ATTRIBUTE Lp DS1 Test purpose (purpose)

Access: Read and write

Description:
This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib: LogicalProcessor

Values: String (0..40, ASCII)

Default: No default

ATTRIBUTE Lp DS1 Test type (type)

Access: Read and write

Description:
This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end,

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using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp DS1 Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp DS1 Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The

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following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp DS1 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp DS1 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS1 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test

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	results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

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a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib LogicalProcessor

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp DS1 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

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Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor

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Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.

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Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp DS1 Dsp

Scope	Device
Description	*LogicalProcessor/n Ds1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent DS1 component becomes active, and remains in existence as long

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as the card remains operational. *Dsp* components cannot be added or deleted.

Mib LogicalProcessor

Common Verbs
Help
List
Display

COMPONENT Lp DS1 Audio

Scope Device

Description
LogicalProcessor/n Ds1/0 Audio
The Audio component presents the audio status of all timeslots on a given DS1.
A voice card's *Audio* component is created automatically whenever the parent DS1 component becomes active, and remains in existence as long as the card remains operational. *Audio* components cannot be added or deleted.

Mib LogicalProcessor

Common Verbs
Help
List
Display

COMPONENT Lp E1

Instance Decimal (0..32)

Groups
GROUP Lp E1 Provisioned (Prov)
GROUP Lp E1 CustomerIdentifierData (CidData)
GROUP Lp E1 AdminInfo (AdminInfo)
GROUP Lp E1 IfEntryProv (IfEntry)
GROUP Lp E1 OperationalStatus (OperStatus)
GROUP Lp E1 OsiState (State)
GROUP Lp E1 Operational (Oper)
GROUP Lp E1 E1Operational (E1Oper)
GROUP Lp E1 Statistics (Stats)

Scope Device

Description
Lp/n E1/n
Lp/n Sdh/i Vc4/j Vc12/k,l,m E1
The *E1* component controls and monitors an E1 port or tributary on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pE1Aal1: 4 port. The lowest instance value is usually ***0***, except for the ***32pE1Aal*** card when it is ***1***.
No instance value is used when the E1 is a STM tributary.
Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an "ATM UNI port". (An E1 "ATM

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UNI port" is an *E1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.)
The instance number of an *E1* "ATM UNI port" must not be the same as the instance number of an *IMA* group under the same *Lp*.

Mib	LogicalProcessor
Subcomponents	COMPONENT Lp E1 Channel (Chan)
Dyn. Subcomp.	COMPONENT Lp E1 Test (Test) COMPONENT Lp E1 Dsp COMPONENT Lp E1 Audio
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp E1 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for an E1 component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 lineType (lineType)

Access	Read and write
Description	This attribute specifies the framing of the E1 line. When ***cas*** (channel associated signalling) is selected, timeslot 16 is reserved for multiframe signalling and only 30 timeslots are available for data. The signalling bits are not interpreted. When ***ccs*** (common channel signalling) is selected, timeslot 16 is not reserved for multiframe signalling and 31 timeslots are available for data. The signalling bits are not interpreted. When ***unframed*** is selected, a clear channel is defined whereby data from all timeslots including the framing data (in timeslot 0) and timeslot 16 are passed transparently. This value is valid only for AAL1 cards. For cell-based cards the ATM Forum specifies that timeslot 16 be reserved, leaving 30 timeslots available for data. The ***8pE1Atm*** and ***1pStm1ChSmIr*** cards support the ***ccs*** value only. The ***4pOC3ChSmIr*** card only supports the ***ccs*** and ***unframed*** values. For both these cards, the default value is ***ccs***. For all other cards, the default value is ***cas***.
Mib	LogicalProcessor

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Values	ccs cas unframed
Default	No default

ATTRIBUTE Lp E1 clockingSource (clockingSource)

Access	Read and write
Description	This attribute defines the source of the transmit clock for the E1 line. When ***local*** is selected, the crystal on the port generates the clocking for the line. When ***line*** is selected, the port synchronizes to the clock from the facility. When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP. When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***. When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network. When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network. A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured*** If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pE1Atm*** card, which it defaults to ***local***. On a ***3pE1Atm*** card all ports must have the same value, and be either ***local*** or ***module***. ***otherPort*** is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards. On ***4E1Aal1*** cards either: all four ports' *clockingSource* values must be ***local*** OR all four ports' *clockingSource* values must be ***module*** OR one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. The ***srtsMode*** clocking source is not supported for this card type.
Mib	LogicalProcessor

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Values	local line module otherPort srtsMode adaptiveMode
Default	No default

ATTRIBUTE Lp E1 crc4Mode

Access	Read and write
Description	This attribute defines whether the CRC-4 checking and generation on the E1 line is enabled or disabled. The default CRC-4 mode is ***off*** except for the cell-based cards which default to ***on*** as per the ATM Forum.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp E1 sendRaiOnAis

Access	Read and write
Description	This attribute defines whether the Remote Alarm Indicator (RAI) will be sent when receiving an AIS alarm. The value is ***yes*** by default; it can be changed to ***no*** only for ports on J2MV cards.
Mib	LogicalProcessor
Values	no yes
Default	yes

ATTRIBUTE Lp E1 raiDeclareAlarmTime

Access	Read and write
Description	This attribute specifies the period of time that a Remote Alarm Indicator (RAI) must be present before declaring an RAI alarm. The value of ***auto*** sets the RAI declare time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiClearAlarmTime* attribute is ignored and ***auto*** is used. This attribute is

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for E1 and E1C card types only. For all other card types, the default value must be used.

Mib	LogicalProcessor
Values	Decimal (1..20000) auto
Units	msec
Default	100

ATTRIBUTE Lp E1 raiClearAlarmTime

Access	Read and write
Description	This attribute specifies the period of time that a Remote Alarm Indicator (RAI) has been absent before clearing an RAI alarm. The value of ***auto*** sets the RAI clear time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiDeclareAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.
Mib	LogicalProcessor
Values	Decimal (1..20000) auto
Units	msec
Default	100

ATTRIBUTE Lp E1 ssmE1SaNumber

Access	Read and write
Description	This attribute specifies which of the five available Sa bits (Sa4 to Sa8) recommended in ITU G.704 is to be used for Synchronization Status Messages (SSM). If set to ***none***, the transmission of SSM is disabled on this port.
Mib	LogicalProcessor
Values	Decimal (4..8) none
Default	none

GROUP Lp E1 CustomerIdentifierData (CidData)

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp E1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

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ATTRIBUTE Lp E1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp E1 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp E1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

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ATTRIBUTE Lp E1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp E1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp E1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp E1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp E1 usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp E1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp E1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — LogicalProcessor

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp E1 controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp E1 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp E1 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp E1 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default: false

GROUP Lp E1 Operational (Oper)

Properties: Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

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Mib	LogicalProcessor

ATTRIBUTE Lp E1 losAlarm (losAlarm)

Access	Read only
Description	This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOS alarm state. The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E1 rxAisAlarm (rxAisAlarm)

Access	Read only
Description	This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms £ T £ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.
Mib	LogicalProcessor

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Values	on off
Default	off

ATTRIBUTE Lp E1 lofAlarm (lofAlarm)

Access	Read only
Description	This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E1 rxRaiAlarm (rxRaiAlarm)

Access	Read only
Description	This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time). The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

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Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E1 txAisAlarm (txAisAlarm)

Access	Read only
Description	This attribute displays whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E1 txRaiAlarm (txRaiAlarm)

Access	Read only
Description	This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp E1 E1Operational (E1Oper)

Properties	Operational
Description	This group contains all of the operational data for a E1 component that are not defined in the DSCommonOp group.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 multifrmLofAlarm (multiLofAlarm)

Access	Read only
Description	This attribute indicates whether a multiframe LOF (loss of frame) alarm state is entered. A multiframe LOF alarm state is entered when a multiframe LOF defect (2 consecutive errors in the multiframe alignment

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signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe LOF defects are intermittently occurring, the multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds. When the multiframe LOF alarm is on, a multiframe RAI alarm indicator is transmitted on the line.

The ***8pE1Atm*** card does not support the multiframe LOF alarm.

Mib: LogicalProcessor

Values:
on
off

Default: off

ATTRIBUTE Lp E1 rxMultifrmRaiAlarm (rxMultiRaiAlarm)

Access: Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm state has been entered. A multiframe RAI alarm state is entered when a multiframe RAI alarm indicator (bit 6 of timeslot 16 in frame 0 is set to a one) is observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe RAI indicator is intermittently received, the multiframe RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The multiframe RAI alarm condition is cleared when the multiframe RAI alarm indication is not received for 10 seconds +/- 0.5 seconds. The multiframe RAI alarm is usually an indication that the far end facility is unable to gain multiframe synchronization.

The ***8pE1Atm*** card does not support the multiframe RAI alarm.

Mib: LogicalProcessor

Values:
on
off

Default: off

ATTRIBUTE Lp E1 txMultifrmRaiAlarm (txMultiRaiAlarm)

Access: Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm is being sent on the E1 line. This is transmitted when the E1 port detects a multiframe LOF condition.

The ***8pE1Atm*** card does not generate the multiframe RAI alarm.

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Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E1 ssmE1Tx

Access	Read only
Description	This attribute indicates the current Synchronization Status Message (SSM) transmitted on the E1 port within the Sa byte defined in ITU G.704. This attribute is filtered when *ssmE1SaNumber* is set to ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Lp E1 multifrmCRC4LofAlarm (multiCRC4LofAlarm)

Access	Read only
Description	This attribute indicates whether E1 CRC-4 multiframe LOF (loss of frame) alarm state is entered. A CRC-4 multiframe LOF alarm state is entered when a CRC-4 multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the CRC-4 multiframe LOF defects are intermittently occurring, the CRC-4 multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds. The *multifrmCRC4LofAlarm* is not implemented for the ***E1***, ***1pE1V***, ***1pE1Mvp***, ***1pE1Mvpe***, ***4pE1Mvpe***, ***8pE1Atm***, ***E1C*** and ***4pE1Aal1*** cards.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp E1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

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ATTRIBUTE Lp E1 runningTime (runningTime)

Access	Read only
Description	The number of seconds since the port component was activated.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 errorFreeSec (efs)

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 erroredSec (es)

Access	Read only
Description	An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 sevErroredSec (ses)

Access	Read only
Description	A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 sevErroredFrmSec (sefs)

Access	Read only

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Description	A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 unavailSec

Access	Read only
Description	The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 bpvErrors (bpvErrors)

Access	Read only
Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 crcErrors (crcErrors)

Access	Read only
Description	If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp E1 frmErrors (frmErrors)

Access	Read only
Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 losStateChanges (losChanges)

Access	Read only
Description	The total number of times that the line lost signal.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp E1 Channel (Chan)

Instance	Decimal (0..31)
Groups	GROUP Lp E1 Chan Provisioned (Prov) GROUP Lp E1 Chan CustomerIdentifierData (CidData) GROUP Lp E1 Chan IfEntryProv (IfEntry) GROUP Lp E1 Chan OperationalStatus (OperStatus) GROUP Lp E1 Chan OsiState (State) GROUP Lp E1 Chan Operational (Oper) GROUP Lp E1 Chan AdminInfo (AdminInfo)
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that

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form a fractional group on a DS1 or E1 port.
Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots.

Mib	LogicalProcessor
Opt. Subcomp.	COMPONENT Lp E1 Chan AtmCell (Cell) COMPONENT Lp E1 Chan TrunkConditioning (Tc) COMPONENT Lp E1 Chan FrameLinkMonitoring (Flm)
Dyn. Subcomp.	COMPONENT Lp E1 Chan Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp E1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

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Mib	LogicalProcessor
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Lp E1 Chan timeslotDataRate (dataRate)

Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

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When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib	LogicalProcessor
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Lp E1 Chan applicationFramerName

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp E1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a

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CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp E1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp E1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

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GROUP Lp E1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp E1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp E1 Chan operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp E1 Chan usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

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Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp E1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The

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operationalState is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp E1 Chan proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase.

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	If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp E1 Chan controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp E1 Chan alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — LogicalProcessor

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp E1 Chan standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

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	The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp E1 Chan unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp E1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

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GROUP Lp E1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp E1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp E1 Chan includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

COMPONENT Lp E1 Chan Test (Test)

Groups	GROUP Lp E1 Chan Test OsiState (State) GROUP Lp E1 Chan Test Setup (Setup) GROUP Lp E1 Chan Test Results (Results)

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Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp E1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp E1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp E1 Chan Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — LogicalProcessor

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp E1 Chan Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — LogicalProcessor

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp E1 Chan Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — LogicalProcessor

Values — idle
active (activ)
busy

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Default	idle

GROUP Lp E1 Chan Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp E1 Chan Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of

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	V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	LogicalProcessor
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp E1 Chan Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	LogicalProcessor
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp E1 Chan Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern

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Default	ccitt32kBitPattern

ATTRIBUTE Lp E1 Chan Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp E1 Chan Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp E1 Chan Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp E1 Chan Test duration

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Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp E1 Chan Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

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a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib — LogicalProcessor

Values — testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default — neverStarted

ATTRIBUTE Lp E1 Chan Test bitsTx

Access — Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib — LogicalProcessor

Values — Long Integer

Default — No default

ATTRIBUTE Lp E1 Chan Test bytesTx

Access — Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib — LogicalProcessor

Values — Long Integer

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Default	No default

ATTRIBUTE Lp E1 Chan Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor

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Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp E1 Chan Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an

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externalLoop test. For a data test, it indicates time since test data was first transmitted.

Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp E1 Chan Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp E1 Chan AtmCell (Cell)

Groups	GROUP Lp E1 Chan Cell Provisioned (Prov) GROUP Lp E1 Chan Cell Operational (Oper) GROUP Lp E1 Chan Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp E1 Chan Cell Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.

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Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Cell alarmActDelay (act)

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	LogicalProcessor
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp E1 Chan Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	LogicalProcessor
Values	off on
Default	No default

ATTRIBUTE Lp E1 Chan Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

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Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: LogicalProcessor

Values: off
on

Default: off

ATTRIBUTE Lp E1 Chan Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp E1 Chan Cell hecSampleInterval (hSample)

Access: Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (0..25)

Units: seconds

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Default	0

ATTRIBUTE Lp E1 Chan Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp E1 Chan Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp E1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before

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an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..25)

Default 1

GROUP Lp E1 Chan Cell Operational (Oper)

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp E1 Chan Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell*

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component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp E1 Chan Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp E1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 Chan Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where

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the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 Chan Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp E1 Chan Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp E1 Chan Cell correctableHeaderErrors (cErr)

Access Read only

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Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp E1 Chan TrunkConditioning (Tc)

Groups GROUP Lp E1 Chan Tc Provisioned (Prov)
GROUP Lp E1 Chan Tc Operational (Op)

Scope Device

Description

Lp/n Ds1/n Chan/n Tc
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:

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bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib LogicalProcessor

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp E1 Chan Tc Provisioned (Prov)

Properties Provisioned

Description This group contains all specific provisioning data for a *Tc* component.

Mib LogicalProcessor

ATTRIBUTE Lp E1 Chan Tc replacementData (data)

Access Read and write

Description This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib LogicalProcessor

Values Hex (H.0..H.ff)

Units Hex

Default No default

ATTRIBUTE Lp E1 Chan Tc signalOneDuration (duration)

Access Read and write

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Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp E1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	LogicalProcessor
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Lp E1 Chan Tc signalOne (sigOne)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined.

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For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib — LogicalProcessor

Vector of — Decimal (0..1)

Index — D
C
B
A

Default — (1, 1, 1, 1)

ATTRIBUTE Lp E1 Chan Tc signalTwo (sigTwo)

Access — Read and write

Description — This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined.

For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib — LogicalProcessor

Vector of — Decimal (0..1)

Index — D
C
B
A

Default — (1, 1, 1, 1)

GROUP Lp E1 Chan Tc Operational (Op)

Properties — Operational

Description — This group contains all specific operational data for a *Tc* component.

Mib — LogicalProcessor

ATTRIBUTE Lp E1 Chan Tc ingressConditioning (inCon)

Access — Read only

Description — This attribute indicates the status of locally generated trunk conditioning towards the ATM network.

When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.***

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When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

Mib — LogicalProcessor

Values — off
on

Default — off

ATTRIBUTE Lp E1 Chan Tc egressConditioning (egCon)

Access — Read only

Description — This attribute indicates the status of locally generated trunk conditioning towards the PDH line.

When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib — LogicalProcessor

Values — off
on

Default — off

COMPONENT Lp E1 Chan FrameLinkMonitoring (Flm)

Groups — GROUP Lp E1 Chan Flm Provisioned (Prov)
GROUP Lp E1 Chan Flm Operational (Op)

Scope — Device

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Description	*Lp/n E1/n Chan/n FrameLinkMonitoring* This component provides a monitoring function specific to a Frame Relay Channel on an E1 line. It combines the status of E1 channel-associated-signalling A-bits and HDLC frame defect.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp E1 Chan Flm Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for an *Flm* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Flm aBitMonitoring (aBit)

Access	Read and write
Description	This attribute controls the monitoring of A-bit defects.
Mib	LogicalProcessor
Values	disabled enabled
Default	enabled

ATTRIBUTE Lp E1 Chan Flm hdlcMonitoring (hdlc)

Access	Read and write
Description	This attribute controls the monitoring of HDLC defect.
Mib	LogicalProcessor
Values	disabled enabled
Default	No default

GROUP Lp E1 Chan Flm Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for an *Flm* component.
Mib	LogicalProcessor

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ATTRIBUTE Lp E1 Chan Flm flmStatus (status)

Access	Read only
Description	This attribute indicates the status of a Frame Relay channel on an E1 line. By combining the E1 channel-associated-signalling (CAS) A-bits status, and HDLC defect, a single value indicates the likely cause of the failure. This mechanism assumes that the far end equipment loops back signaling A-bits for some or all of the timeslots in a channel. The A-bits in channel are transmitted as '0'. If they are all received as '0', it is assumed that the E1 link is up in both directions. The presence of HDLC frames indicates that the service is connected. When A-bits and HDLC frames are correctly received, ***frameLinkUp*** is indicated. When neither are received, ***frameLinkDown*** is indicated. When HDLC frames are not receive but A-bits are not at fault, ***lossOfHdlc*** is indicated. When HDLC frames are received, but there is a fault in any of timeslot's A-bits on a channel ***lossOfAbit*** is indicated.
Mib	LogicalProcessor
Values	notMonitoring frameLinkUp frameLinkDown lossOfHdlc lossOfAbit
Default	No default

COMPONENT Lp E1 Test (Test)

Groups	GROUP Lp E1 Test OsiState (State) GROUP Lp E1 Test Setup (Setup) GROUP Lp E1 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

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VERB START Lp E1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp E1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp E1 Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

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Default	unlocked

ATTRIBUTE Lp E1 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp E1 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp E1 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Test purpose (purpose)

Access	Read and write

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Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib LogicalProcessor

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp E1 Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib LogicalProcessor

Values
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop

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lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp E1 Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp E1 Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Lp E1 Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

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Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp E1 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp E1 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp E1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes

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Default	1.00

GROUP Lp E1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima*

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component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp E1 Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

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Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame.

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For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp E1 Test bitErrorRate

Access Read only

Description

This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib LogicalProcessor

Values String (5, ASCII)

Default No default

ATTRIBUTE Lp E1 Test elapsedTime

Access Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

ATTRIBUTE Lp E1 Test timeRemaining

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Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp E1 Dsp

Scope	Device
Description	*LogicalProcessor/n E1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Dsp* components cannot be added or deleted.
Mib	LogicalProcessor
Common Verbs	Help List Display

COMPONENT Lp E1 Audio

Scope	Device
Description	*LogicalProcessor/n E1/0 Audio* The *Audio* component presents the audio status of the channels on a voice card. A voice card's *Audio* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Audio* components cannot be added or deleted.
Mib	LogicalProcessor
Common Verbs	Help List Display

COMPONENT Lp V35

Instance	Decimal (0..7)

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Groups	GROUP Lp V35 Provisioned (Prov) GROUP Lp V35 CustomerIdentifierData (CidData) GROUP Lp V35 AdminInfo (AdminInfo) GROUP Lp V35 IfEntryProv (IfEntry) GROUP Lp V35 OperationalStatus (OperStatus) GROUP Lp V35 OsiState (State) GROUP Lp V35 Operational (Oper)
Scope	Application
Description	*Lp/n V35/n* The *V35* component controls a V.35 interface.
Mib	LogicalProcessor
Dyn. Subcomp.	COMPONENT Lp V35 Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp V35 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for a *V35* component.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 linkMode (mode)

Access	Read and write
Description	This attribute defines the intended gender of the V.35 interface. The actual gender of the interface is determined by the physical connection to the patch panel. If the hardware setup does not match this attribute, an alarm will be generated. In ***dte*** mode, the RTS line signal is driven as specified by the attribute *readyLineState* when the interface passes its initial diagnostics. Then, the RTS line signal will be driven as specified in the attribute *dataTransferLineState* when the application is ready to transfer data. On the other hand, the input line signals (RFS, DSR, and DCD) are compared against those specified in the attributes *readyLineState* and *dataTransferLineState*. The application will be notified when the specified input line states are observed.

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In ***dce*** mode, the *V35* component behaves similarly as when it is in ***dte*** mode. However, it will be driving the DCE line signals (RFS, DSR, and DCD) and monitoring the DTE line signal (RTS) as specified by the attributes *readyLineState* and *dataTransferLineState*.

Mib	LogicalProcessor
Values	dte dce
Default	dte

ATTRIBUTE Lp V35 readyLineState (rls)

Access	Read and write
Description	This attribute specifies the line signals originating from the V.35 interface that will always be turned on, provided the interface passes its diagnostics. This set of signals is generally required for maintaining the connection. Note that both DTE and DCE signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the *actualLinkMode*. See also *linkMode*.
Mib	LogicalProcessor
Set of	rfs dsr dcd rts
Default	(rfs, dsr, dcd, rts)

ATTRIBUTE Lp V35 dataTransferLineState (dtls)

Access	Read and write
Description	This attribute specifies the line signals required to indicate that the external equipment is in a good state (that is, data transfer can proceed). Note that both DTE and DCE signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the *actualLinkMode*. The value of this attribute must be a superset of that of the *readyLineState* attribute. See also *linkMode*.
Mib	LogicalProcessor
Set of	rfs dsr dcd rts
Default	(rfs, dsr, dcd, rts)

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ATTRIBUTE Lp V35 lineStatusTimeOut (lsto)

Access	Read and write
Description	This attribute specifies the time that the line state must be stable (good or bad) before a line state change is declared.
Mib	LogicalProcessor
Values	Decimal (10..20000)
Units	msec
Default	1000

ATTRIBUTE Lp V35 lineSpeed (speed)

Access	Read and write
Description	This attribute specifies the speed of the line for source clocking. This attribute is ignored if the interface is not providing a clock. The clock rate is rounded up to the nearest available value. Note that the actual clock rates are available in the operational attributes *actualTxLineSpeed* and *actualRxLineSpeed*. The values allowed on a V.35 DCE interface are: 3840000, 2560000, 2048000, 1920000, 1536000, 1344000, 1280000, 1024000, 960000, 768000, 672000, 640000, 512000, 448000, 384000, 336000, 320000, 256000, 224000, 192000, 168000, 128000, 112000, 64000, 56000, 48000, 32000, 19200, 9600. Note that line speeds of 1024000 and 2048000 cannot be provisioned on cards that have ports provisioned at 3840000, 2560000, 1920000, 1280000, 960000, 640000 or 320000.
Mib	LogicalProcessor
Values	Decimal (9600..3840000)
Units	bit/s
Default	192000

ATTRIBUTE Lp V35 clockingSource (clockingSource)

Access	Read and write
Description	This attribute specifies the source of synchronization of the outgoing clocks. This attribute is only used when the *actualLinkMode* is ***dce***. If the value of the attribute is ***local***, the outgoing clocks are synchronized to a local oscillator on the FP. If the value of the attribute is ***module***, the outgoing clocks are synchronized to the oscillator on the active CP.
Mib	LogicalProcessor
Values	local module

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Default	No default

ATTRIBUTE Lp V35 dteDataClockSource (rxClk)

Access	Read and write
Description	This attribute is only used when the *actualLinkMode* is ***dce***. It is specifies the clock to be used to recover the receive data. A DTE interface uses TSET(DCE) and RSET(DCE) for timing. If the value of the attribute is ***fromDce***, the DCE uses the internally generated transmit clock to supply both TSET(DCE) and RSET(DCE). If the value of the attribute is ***fromDte***, the DCE still uses the internally generated transmit clock to supply TSET(DCE), but the receive timing is derived from TSET(DTE) on the link. The ***fromDte*** mode is recommended when the DTE is far away from the DCE interface. Note that TSET(DTE) is CCITT V.24 circuit 113; TSET(DCE) is CCITT V.24 circuit 114; and RSET(DCE) is CCITT V.24 circuit 115.
Mib	LogicalProcessor
Values	fromDce fromDte
Default	fromDce

ATTRIBUTE Lp V35 applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies the component name of a *Framer* which is associated with the *V35* component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp V35 enableDynamicSpeed (dynamic)

Access	Read and write
Description	When set to ***yes***, this attribute specifies that the transmit link speed should be set to the calculated receiver link speed. This attribute can be set to ***yes*** only if the *linkMode* is ***dce*** and the *dteDataClockSource* is ***fromDte***.
Mib	LogicalProcessor
Values	yes no
Default	no

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GROUP Lp V35 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp V35 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)

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Default	No default

ATTRIBUTE Lp V35 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp V35 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp V35 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

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ATTRIBUTE Lp V35 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp V35 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp V35 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp V35 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp V35 usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp V35 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp V35 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — LogicalProcessor

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp V35 controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp V35 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp V35 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — LogicalProcessor

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE Lp V35 unknownStatus (osiUnknw)

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — LogicalProcessor

Values
false
true

Default — false

GROUP Lp V35 Operational (Oper)

Properties — Operational

Description

This group contains all specific operational data for a *V35* component.

Mib — LogicalProcessor

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ATTRIBUTE Lp V35 actualLinkMode

Access	Read only
Description	This attribute indicates the actual link mode defined by the hardware. Note that the hardware overrides the provisionable data. The interface behaves as a DCE or DTE according to the *actualLinkMode*.
Mib	LogicalProcessor
Values	dte dce
Default	No default

ATTRIBUTE Lp V35 lineState

Access	Read only
Description	This attribute indicates the current state of the interface signals.
Mib	LogicalProcessor
Set of	rfs dsr dcd rts
Default	No default

ATTRIBUTE Lp V35 actualTxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the transmit clock.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp V35 actualRxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the receive clock.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

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ATTRIBUTE Lp V35 dataXferStateChanges

Access	Read only
Description	This attribute counts the line transitions from and to data transfer state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp V35 Test (Test)

Groups	GROUP Lp V35 Test OsiState (State) GROUP Lp V35 Test Setup (Setup) GROUP Lp V35 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp V35 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp V35 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp V35 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For

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component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp V35 Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib LogicalProcessor

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp V35 Test operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib LogicalProcessor

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Lp V35 Test usageState (osiUsage)

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp V35 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp V35 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test.

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remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp V35 Test frmSize (size)

Access: Read and write

Description:

This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

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ATTRIBUTE Lp V35 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp V35 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp V35 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

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ATTRIBUTE Lp V35 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp V35 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp V35 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started.

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a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp V35 Test bitsTx

Access	Read only

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Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test bytesRx

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Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the

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	link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp V35 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp V35 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp X21

Instance	Decimal (0..7)
Groups	GROUP Lp X21 Provisioned (Prov) GROUP Lp X21 CustomerIdentifierData (CidData) GROUP Lp X21 AdminInfo (AdminInfo)

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GROUP Lp X21 IfEntryProv (IfEntry)
GROUP Lp X21 OperationalStatus (OperStatus)
GROUP Lp X21 OsiState (State)
GROUP Lp X21 Operational (Oper)

Scope: Application

Description:

Lp/n X21/n

The *X21* component controls a V.11 interface.

Mib: LogicalProcessor

Dyn. Subcomp.: COMPONENT Lp X21 Test (Test)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp X21 Provisioned (Prov)

Properties: Provisioned

Description:

This group contains all specific provisioning data for an *X21* component.

Mib: LogicalProcessor

ATTRIBUTE Lp X21 linkMode (mode)

Access: Read and write

Description:

This attribute specifies the intended gender of the *X21* component (V.11 interface). The actual gender of the interface is determined by the physical connection to the patch panel. If the hardware setup does not match this attribute, an alarm will be generated.

In ***dte*** mode, the ***control*** line signal is driven as specified by the attribute *readyLineState* when the interface passes its initial diagnostics. Then, the ***control*** line signal will be driven as specified in the attribute *dataTransferLineState* when the application is ready to transfer data. On the other hand, the input line signal (***indication***) is compared against those specified in the attributes *readyLineState* and *dataTransferLineState*. The application will be notified when the specified line states are observed.

In ***dce*** mode, the *X21* component behaves similarly as when it is in ***dte*** mode. However, it will be driving the DCE line signal (***indication***) and

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	monitoring the DTE line signal (***control***) as specified by the attributes *readyLineState* and *dataTransferLineState*.
Mib	LogicalProcessor
Values	dte dce
Default	dte

ATTRIBUTE Lp X21 readyLineState (rls)

Access	Read and write
Description	This attribute specifies the line signals originating from the V.11 interface that will always be turned on, provided the interface passes its diagnostics. This set of signals is generally required to maintain the connection. Note that both DTE and DCE signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the *actualLinkMode*. See also *linkMode*.
Mib	LogicalProcessor
Set of	indication control
Default	(indication, control)

ATTRIBUTE Lp X21 dataTransferLineState (dtls)

Access	Read and write
Description	This attribute specifies the state of the line signals required to indicate that the external equipment is in a good state (that is, data transfer can proceed). Note that both DTE and DCE signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the *actualLinkMode*. The value of this attribute must be a superset of that of the *readyLineState* attribute . See also *linkMode*.
Mib	LogicalProcessor
Set of	indication control
Default	(indication, control)

ATTRIBUTE Lp X21 lineStatusTimeOut (lsto)

Access	Read and write
Description	This attribute specifies the duration for the line state to be stable (good or bad) before a state change is declared.

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Mib	LogicalProcessor
Values	Decimal (10..20000)
Units	msec
Default	1000

ATTRIBUTE Lp X21 lineSpeed (speed)

Access	Read and write
Description	This attribute specifies the speed of the line for source clocking. This attribute is ignored if the interface is not providing a clock. The clock rate is rounded up to the nearest available value. Note that the actual clock rates are available in the operational attributes *actualTxLineSpeed* and *actualRxLineSpeed*. The allowed values on a V.11 DCE interface are: 7680000, 3840000, 2560000, 2048000, 1920000, 1536000, 1344000, 1280000, 1024000, 960000, 768000, 672000, 640000, 512000, 448000, 384000, 336000, 320000, 256000, 224000, 192000, 168000, 128000, 112000, 64000, 56000, 48000, 32000, 19200, 9600. Note that line speeds of 1024000 and 2048000 cannot be provisioned on cards that have ports provisioned at 3840000, 2560000, 1920000, 1280000, 960000, 640000 or 320000.
Mib	LogicalProcessor
Values	Decimal (9600..7680000)
Units	bit/s
Default	192000

ATTRIBUTE Lp X21 clockingSource (clockingSource)

Access	Read and write
Description	This attribute specifies the source of synchronization of the outgoing clocks. This attribute is only used when the *actualLinkMode* is ***dce***. If the value of the attribute is *local*, the outgoing clocks are synchronized to a local oscillator on the FP. If the value of the attribute is *module*, the outgoing clocks are synchronized to the oscillator on the active CP.
Mib	LogicalProcessor
Values	local module
Default	No default

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ATTRIBUTE Lp X21 dteDataClockSource (rxClk)

Access	Read and write
Description	This attribute is only used when the *actualLinkMode* is ***dce***. It specifies the clock to be used to recover the receive data. Note that a V.11 DTE interface uses the S clock (see X.21 standard) for both receive data and transmit data timing. The DTE interface always loops the received S clock back to the DCE as the X clock (see X.21 standard). If the value of the attribute is ***fromDce***, the DCE V.11 interface uses the internally generated transmit clock as the S clock and for both receive and transmit data timing. The X clock is ignored. If the value of the attribute is ***fromDte***, the DCE still uses the internally generated transmit clock as the S clock and for transmit data timing, but the receive data timing is derived from the X clock. The ***fromDte*** mode is recommended when the DTE is far away from the DCE interface.
Mib	LogicalProcessor
Values	fromDce fromDte
Default	fromDce

ATTRIBUTE Lp X21 lineTerminationRequired (ltr)

Access	Read and write
Description	This attribute specifies whether termination is required for this interface. If the hardware setup does not match this attribute, an alarm is generated.
Mib	LogicalProcessor
Values	yes no
Default	yes

ATTRIBUTE Lp X21 applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies the component name of a *Framer* which is associated with the *X21* component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

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ATTRIBUTE Lp X21 enableDynamicSpeed (dynamic)

Access	Read and write
Description	When set to ***yes***, this attribute specifies that the transmit link speed should be set to the calculated receiver link speed. This attribute can be set to ***yes*** only if the *linkMode* is ***dce*** and the *dteDataClockSource* is ***fromDte***.
Mib	LogicalProcessor
Values	yes no
Default	no

GROUP Lp X21 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp X21 AdminInfo (AdminInfo)

Properties	Provisioned

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Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp x21 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp x21 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp x21 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp x21 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

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ATTRIBUTE Lp X21 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp X21 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp X21 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

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GROUP Lp x21 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp x21 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp x21 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp X21 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp X21 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

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The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

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ATTRIBUTE Lp X21 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp X21 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — LogicalProcessor

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp X21 alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp x21 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp x21 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

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	The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp X21 Operational (Oper)

Properties	Operational
Description	This group contains all specific operational data for an *X21* component.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 actualLinkMode

Access	Read only
Description	This attribute indicates the actual link mode defined by the hardware. Note that the hardware overrides the provisionable data. The interface behaves as a DCE or DTE according to the *actualLinkMode*.
Mib	LogicalProcessor
Values	dte dce
Default	No default

ATTRIBUTE Lp X21 lineState

Access	Read only
Description	This attribute indicates the current state of the interface signals.
Mib	LogicalProcessor
Set of	indication control
Default	No default

ATTRIBUTE Lp X21 actualTxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the transmit clock.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s

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Default	No default

ATTRIBUTE Lp X21 actualRxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the receive clock.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp X21 dataXferStateChanges

Access	Read only
Description	This attribute counts the line transitions from and to data transfer state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp X21 Test (Test)

Groups	GROUP Lp X21 Test OsiState (State) GROUP Lp X21 Test Setup (Setup) GROUP Lp X21 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp X21 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

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VERB STOP Lp X21 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp X21 Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp X21 Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp X21 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp X21 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

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ATTRIBUTE Lp X21 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	LogicalProcessor
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp X21 Test frmSize (size)

Access	Read and write

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Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	LogicalProcessor
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp X21 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp X21 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp X21 Test dataStartDelay (dsd)

Access	Read and write

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Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp X21 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp X21 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp X21 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.

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Mib	LogicalProcessor

ATTRIBUTE Lp X21 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.
Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown

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neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp X21 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp X21 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp X21 Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp X21 Test bitsRx

Access Read only

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Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp X21 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp X21 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp X21 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

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ATTRIBUTE Lp X21 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp X21 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp X21 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)

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Units	minutes
Default	0.00

COMPONENT Lp TokenRing (Tr)

Instance	Decimal (0..5)
Groups	GROUP Lp Tr CustomerIdentifierData (CidData) GROUP Lp Tr IfEntryProv (IfEntry) GROUP Lp Tr Provisioned (Prov) GROUP Lp Tr AdminInfo (AdminInfo) GROUP Lp Tr OsiState (State) GROUP Lp Tr OperationalStatus (OperStatus) GROUP Lp Tr Operational (Oper) GROUP Lp Tr Statistics (Stats) GROUP Lp Tr NcMacOperational (NcMacOper)
Scope	Device
Description	Lp/n TokenRing/n This component defines an instance of a Token Ring interface attached to a ring. One instance of this component must be created for each hardware interface. Each interface must be provisioned prior to inserting into the ring.
Mib	LanDrivers
Subcomponents	COMPONENT Lp Tr LanTest (Lt) COMPONENT Lp Tr Test
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Tr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LanDrivers

ATTRIBUTE Lp Tr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the

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component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LanDrivers
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Tr IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE Lp Tr ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE Lp Tr ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)

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Default	No default

GROUP Lp Tr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Token Ring port.
Mib	LanDrivers

ATTRIBUTE Lp Tr ringSpeed (rspd)

Access	Read and write
Criticality	Process
Description	This attribute indicates the ring speed at the next insertion into the ring. Note that all the interfaces on a ring must operate at the same speed.
Mib	LanDrivers
Values	fourMegabit sixteenMegabit
Default	sixteenMegabit

ATTRIBUTE Lp Tr monitorParticipate (mntr)

Access	Read and write
Criticality	Process
Description	This attribute determines whether the interface will participate in the active monitor selection process.
Mib	LanDrivers
Values	true false
Default	false

ATTRIBUTE Lp Tr functionalAddress

Access	Read and write
Criticality	Process
Description	This attribute contains a bit mask of all token ring functional addresses for which this interface will accept frames. The address is displayed in canonical form.
Mib	LanDrivers
Values	String (6, Dashed Hex)

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Default	03-00-fe-ff-8f-01

ATTRIBUTE Lp Tr nodeAddress (nAddr)

Access	Read and write
Criticality	Process
Description	This attribute identifies the primary, node specific address recognized by this interface. If an operator does not provision a MAC address, the interface will use a predefined, permanentlyassigned address. A valid node address must not be any of the following: a broadcast address, a group address, a functional address or a null address. A node address should be entered in the canonical form.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Lp Tr groupAddress (gAddr)

Access	Read and write
Criticality	Process
Description	This attribute identifies the group address for which this interface will accept frames. The address is displayed in canonical form. For a valid group address, the least significant bit of the first octet should be set to 1. Currently, only one group address can be provisioned for one interface.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	03-00-01-00-00-00

ATTRIBUTE Lp Tr productId

Access	Read and write
Criticality	Process
Description	This attribute is used to identify the host system attached to this interface. This information is transmitted in response to Request Station Attachment MAC frames.
Mib	LanDrivers
Values	String (0..18, ASCII)
Default	"LAN Token Ring"

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ATTRIBUTE Lp Tr applicationFramerName (framer)

Access	Read and write
Criticality	Process
Description	This attribute contains the component name of a Framer which is associated with the *Tr* component.
Mib	LanDrivers
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Tr AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LanDrivers

ATTRIBUTE Lp Tr vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LanDrivers
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Tr commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LanDrivers
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Tr includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the

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comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.

Mib	LanDrivers
Values	no yes
Default	no

GROUP Lp Tr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE Lp Tr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Tr operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Tr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

GROUP Lp Tr OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE Lp Tr snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

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Mib	LanDrivers
Values	up down testing
Default	up

GROUP Lp Tr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the Token Ring component.
Mib	LanDrivers

ATTRIBUTE Lp Tr macAddress

Access	Read only
Description	This attribute contains the actual MAC address. The value is assigned by the system if *nodeAddress* is not provisioned. This address is displayed in canonical form. The non-canonical version of this address is indicated in *ncMacAddress*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Lp Tr ringState

Access	Read only
Description	This attribute contains the value of the current interface state with respect to entering or leaving the ring.
Mib	LanDrivers
Values	opened closed opening closing openFailure ringFailure
Default	ringFailure

ATTRIBUTE Lp Tr ringStatus

Access	Read only

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Description

This attribute contains the value of the current interface status after the station has entered the ring. The value is a sum of values, one for each currently applicable condition. Before the station attempts an open this attribute has the value of ***noStatus***.
noProblems = 0,
ringRecovery = 32,
singleStation = 64,
removeReceived = 256,
reserved = 512,
autoRemovalError = 1024,
lobeWireFault = 2048,
transmitBeacon = 4096,
softError = 8192,
hardError = 16384,
signalLoss = 32768,
noStatus = 131072

Mib — LanDrivers

Set of
noProblems
ringRecovery
singleStation
removeReceived
reserved
autoRemovalError
lobeWireFault
transmitBeacon
softError
hardError
signalLoss
noStatus

Default — (noStatus)

ATTRIBUTE Lp Tr ringOpenStatus

Access — Read only

Description

This attribute indicates what happened the last time the station attempted to enter into the ring.

Mib — LanDrivers

Values
noOpen
badParam
lobeFailed
signalLoss
insertionTimeout
ringFailed
beaconing
duplicateMac

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	requestFailed removeReceived open
Default	noOpen

ATTRIBUTE Lp Tr upStream

Access	Read only
Description	This attribute is the MAC address of the station's up-stream neighbor. This address is displayed in canonical form. The non-canonical version of this address is indicated in *ncUpStream.*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Lp Tr chipSet

Access	Read only
Description	This attribute identifies the hardware chip set in use by an interface.
Mib	LanDrivers
Values	ibm16 titms380 titms380c16 titms380c26
Default	titms380c16

ATTRIBUTE Lp Tr lastTimeBeaconSent

Access	Read only
Description	This attribute indicates the time at which a Beacon frame was last transmitted on this interface.
Mib	LanDrivers
Values	Time (DHMS)
Default	No default

GROUP Lp Tr Statistics (Stats)

Properties	Operational
Description	This group contains statistical information for the Token Ring port.
Mib	LanDrivers

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ATTRIBUTE Lp Tr lineErrors

Access	Read only
Description	This attribute contains the number of frames or tokens copied or repeated by a station where there is a non-data bit or a FCS error. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr burstErrors

Access	Read only
Description	This attribute contains the number of times the station detects the absence of transitions for five consecutive half-bit times. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr acErrors

Access	Read only
Description	This attribute contains the number of times that a station can not set the AC bits properly. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr abortTransErrors

Access	Read only
Description	This attribute contains the number of aborted frames. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp Tr internalErrors

Access	Read only
Description	This attribute contains the number of internal errors. When the value of the counter soars up quickly, it indicates a potential hardware problem. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr lostFrameErrors

Access	Read only
Description	This attribute contains the number of times a station is transmitting and its TRR timer expires. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr receiveCongestions

Access	Read only
Description	This attribute contains the number of times a station is supposed to receive a frame but cannot due to lack of buffer space. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr frameCopiedErrors

Access	Read only
Description	This attribute contains the number of times a station receives a frame addressed to its specific address and detects that the A bit is set. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Lp Tr tokenErrors

Access	Read only
Description	This attribute contains the number of times a station acting as the active monitor recognizes an error condition that needs a token transmission. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr softErrors

Access	Read only
Description	This attribute contains the number of soft errors or the number of Report Error Mac frames the station has transmitted. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr hardErrors

Access	Read only
Description	This attribute contains the number of times this interface has detected an immediately recoverable fatal error. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr signalLoss

Access	Read only
Description	This attribute contains the number of times signal condition has been lost. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Lp Tr transmitBeacons

Access	Read only
Description	This attribute contains the number of beacon frames transmitted. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr ringRecoverys

Access	Read only
Description	This attribute contains the number of times the ring has been purged. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr lobeWires

Access	Read only
Description	This attribute contains the number of times the interface has detected a short circuit in the lobe data path. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr removeRings

Access	Read only
Description	This attribute contains the number of Remove Ring Station Mac frames received. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp Tr singleStation

Access	Read only
Description	This attribute contains the number of times the station has determined it is the only one on the ring. This is not necessarily an error. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr freqErrors

Access	Read only
Description	This attribute contains the number of signal frequency errors detected. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

GROUP Lp Tr NcMacOperational (NcMacOper)

Properties	Operational
Description	This group contains the operational attributes of the *TokenRing* port component related to non-canonical MAC addresses.
Mib	LanDrivers

ATTRIBUTE Lp Tr ncMacAddress

Access	Read only
Description	This attribute contains the actual MAC address. The value is assigned by the system if *nodeAddress* is not provisioned. This address is displayed in non-canonical form. The canonical version of this address is indicated in *macAddress*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Tr ncUpStream

Access	Read only
Description	This attribute is the MAC address of the station's up-stream neighbor. This address is displayed in non-canonical form. The canonical version of this address is indicated in *upStream*.

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Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

COMPONENT Lp Tr LanTest (Lt)

Groups	GROUP Lp Tr Lt TestOp (Top)
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	LanDrivers
Dyn. Subcomp.	COMPONENT Lp Tr Lt FrameCompare (FrmCmp) COMPONENT Lp Tr Lt FrameCopy (FrmCpy) COMPONENT Lp Tr Lt PortConfig (PrtCfg) COMPONENT Lp Tr Lt FrameBuild (Fb) COMPONENT Lp Tr Lt Control (Cntl)
Common Verbs	Help List Display

VERB Start Lp Tr Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp Tr Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Tr Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp Tr Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

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VERB Tlist Lp Tr Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp Tr Lt **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt **FrameCompare (FrmCmp)**

Groups	GROUP Lp Tr Lt FrmCmp TestOp (Top)
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt FrmCmp **TestOp (Top)**

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Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt FrameCopy (FrmCpy)

Groups	GROUP Lp Tr Lt FrmCpy TestOp (Top)
Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt FrmCpy tData (td)

Access	Read and write

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Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt PortConfig (PrtCfg)

Groups	GROUP Lp Tr Lt PrtCfg TestOp (Top)
Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp Tr Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

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COMPONENT Lp Tr Lt FrameBuild (Fb)

Groups	GROUP Lp Tr Lt Fb TestOp (Top)
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	LanDrivers
Dyn. Subcomp.	COMPONENT Lp Tr Lt Fb TransmitInfo (TxInfo) COMPONENT Lp Tr Lt Fb FddiMac (MacFddi) COMPONENT Lp Tr Lt Fb EthernetMac (MacEnet) COMPONENT Lp Tr Lt Fb TokenRingMac (MacTr) COMPONENT Lp Tr Lt Fb DataField (Data) COMPONENT Lp Tr Lt Fb IpHeader (IpH) COMPONENT Lp Tr Lt Fb LlcHeader (Llch) COMPONENT Lp Tr Lt Fb AppleHeader (AppleH) COMPONENT Lp Tr Lt Fb IpxHeader (IpxH)
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers

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Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb TransmitInfo (TxInfo)

Groups	GROUP Lp Tr Lt Fb TxInfo TestOp (Top)
Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb FddiMac (MacFddi)

Groups	GROUP Lp Tr Lt Fb MacFddi TestOp (Top)
Scope	Device

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Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb MacFddi **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb MacFddi **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb **EthernetMac (MacEnet)**

Groups	GROUP Lp Tr Lt Fb MacEnet TestOp (Top)
Scope	Device

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Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb MacEnet **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb MacEnet **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb **TokenRingMac (MacTr)**

Groups	GROUP Lp Tr Lt Fb MacTr TestOp (Top)
Scope	Device

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Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb MacTr **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb MacTr **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb **DataField (Data)**

Groups	GROUP Lp Tr Lt Fb Data TestOp (Top)
Scope	Device
Description	This component adds a data field to frame.
Mib	LanDrivers
Common Verbs	Help List Display

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VERB Get Lp Tr Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb Data **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb Data **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb **IpHeader (IpH)**

Groups	GROUP Lp Tr Lt Fb IpH TestOp (Top)
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

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VERB Tlist Lp Tr Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb IpH **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb IpH **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb **LlcHeader (Llch)**

Groups	GROUP Lp Tr Lt Fb Llch TestOp (Top)
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp Tr Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb Llch **TestOp (Top)**

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Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb LIch tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb AppleHeader (AppleH)

Groups	GROUP Lp Tr Lt Fb AppleH TestOp (Top)
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb AppleH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

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Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb IpxHeader (IpxH)

Groups	GROUP Lp Tr Lt Fb IpxH TestOp (Top)
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Control (Cntl)

Groups	GROUP Lp Tr Lt Cntl TestOp (Top)
Scope	Device

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Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Cntl **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Cntl **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr **Test**

Groups	GROUP Lp Tr Test PortTestOp (PTO) GROUP Lp Tr Test Results (Results)
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or*

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Lp/n IlsForwarder/n Test
The Test component is used to do StartUp port test for LAN cards.

Mib	LanDrivers
Common Verbs	Help List Display

VERB Start Lp Tr Test

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop Lp Tr Test

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Tr Test

Impact	Service
Description	This verb is used to reset the Test component.

GROUP Lp Tr Test **PortTestOp (PTO)**

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	LanDrivers

ATTRIBUTE Lp Tr Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	LanDrivers
Values	onCard normal wrapA

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wrapB
thruA
thruB
extWrapA
extWrapB
extThruA
extThruB
extWrapAB
extWrapBA

Default — No default

ATTRIBUTE Lp Tr Test frmSize (size)

Access — Read and write

Description — This attribute defines the size of the test data frames in number of bytes.

Mib — LanDrivers

Values — Decimal (4..4096)

Units — bytes

Default — 1024

ATTRIBUTE Lp Tr Test duration (duration)

Access — Read and write

Description — This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.

Mib — LanDrivers

Values — Decimal (1..30240)

Units — minutes

Default — 1

GROUP Lp Tr Test Results (Results)

Properties — Operational

Description — This group contains all the statistics related attributes of the Test component.

Mib — LanDrivers

ATTRIBUTE Lp Tr Test elapsedTime

Access — Read only

Description — This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.

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Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Tr Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Tr Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	LanDrivers
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning
Default	neverStarted

ATTRIBUTE Lp Tr Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Tr Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.

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Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Tr Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Tr Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Tr Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp Sonet

Instance	Decimal (0..15)
Groups	GROUP Lp Sonet Provisioned (Prov) GROUP Lp Sonet CustomerIdentifierData (CidData) GROUP Lp Sonet AdminInfo (AdminInfo) GROUP Lp Sonet IfEntryProv (IfEntry) GROUP Lp Sonet OperationalStatus (OperStatus) GROUP Lp Sonet OsiState (State)

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GROUP Lp Sonet Operational (Oper)
GROUP Lp Sonet Statistics (Stats)

Scope: Device

Description: *Lp/n Sonet/n*
This component controls a port using the SONET hierarchy. In particular, it deals with SONET medium, section, and line layers.

On a Nortel Networks Multiservice Switch 7400, a *Path* component can sometimes be automatically created under the *Sonet* component.

Mib: LogicalProcessor

Opt. Subcomp.: COMPONENT Lp Sonet Path
COMPONENT Lp Sonet Sts
COMPONENT Lp Sonet OpticalModule (Om)

Dyn. Subcomp.: COMPONENT Lp Sonet Test (Test)

Common Verbs: Help, List, Display, Add, DELete, LOCK, Unlock

GROUP Lp Sonet Provisioned (Prov)

Properties: Provisioned

Description:
This group contains the provisioning data for a *Sonet* or *Sdh* component.

Mib: LogicalProcessor

ATTRIBUTE Lp Sonet clockingSource

Access: Read and write

Description:
This attribute defines the type of clocking source used for synchronizing the transmit clock: ***local*** means direct use of the local clock oscillator at its centre frequency; ***line*** means the use of a signal phase-locked to the incoming line rate; ***module*** means the use of a signal phase-locked to the CP reference clock.

When adding a *Sonet* or *Sdh* component, the *clockingSource* attribute is set to ***module*** if the *NetworkSynchronization* component has been added and is set to ***local*** otherwise.

Note that the multiport cell-based cards have one common clock source for each of the three ports when either the clocking source ***local*** or

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module is selected. For this reason, it is not allowed to have at the same time the *clockingSource* attribute set to ***local*** on one port and ***module*** on another port. Furthermore, the *clockingSource* attribute cannot be set to ***module*** if the *NetworkSynchronization* component has not been added.

Mib — LogicalProcessor

Values — local
line
module

Default — No default

ATTRIBUTE Lp Sonet lineAutomaticProtectionSwitch (laps)

Access — Read and write

Criticality — Process

Description

This attribute specifies the name of the *Laps* component. In the case of intra-card configurations, the specified *Laps* component is used to provide sparing of lines which use this port and its mate; in the case of inter-card configurations, the specified *Laps* component is used to provide sparing of lines only.

Mib — LogicalProcessor

Values — Link

Default — No default

ATTRIBUTE Lp Sonet txSectionTrace

Access — Read and write

Description

This attribute specifies the section identifier. The string must be constructed with 7-bit characters only. The section identifier is prefixed by a CRC byte and padded with null characters if necessary to form the 16-octet section trace message transmitted in byte J0 of 16 outgoing frames. At the remote end, the section trace is reassembled, the CRC is checked and the message is compared to the *expectedRxSectionTrace* attribute. If a mismatch is detected, an alarm is issued.

Usage guidelines for the section trace are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format.

The functionality supported by this attribute is not available.

Mib — LogicalProcessor

Values — String (0..15, Extended ASCII)

Default — ""

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ATTRIBUTE Lp Sonet expectedRxSectionTrace

Access	Read and write
Description	This attribute specifies the expected section trace identifier which is used to identify the fiber connected to the associated port. This attribute must match the corresponding *txSectionTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	LogicalProcessor
Values	String (0..15, Extended ASCII)
Default	""

ATTRIBUTE Lp Sonet s1RxDefault

Access	Read and write
Description	This attribute specifies the default S1 byte reported by the port when the received S1 byte is 0 (quality unknown). No default is applied when this attribute is set to ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sonet s1TxOverride

Access	Read and write
Description	This attribute specifies the S1 byte transmitted on the port regardless of the Synchronization Status Message (SSM) value provided by the *NetworkSynchronization* component. Changes in SSM value from the *NetworkSynchronization* component are ignored when this attribute is set to a value other than ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sonet s1RxOverride

Access	Read and write

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Description	This attribute specifies the S1 byte value reported by the port regardless of the received value. Changes in S1 byte on the port are ignored when this attribute is set to a value other than ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sonet lapsProtocol

Access	Read: Illegal Write: All
Description	This attribute stores the value of the *protocol* attribute provisioned under the *Laps* component. This hidden attribute is updated automatically via a check escape on *Laps* component.
Mib	LogicalProcessor
Values	Decimal (0..10) none
Default	none

ATTRIBUTE Lp Sonet sonetSdhOmType

Access	Read: Illegal Write: All
Description	This attribute stores the value of the *type* attribute provisioned under the *OpticalModule* component.This hidden attribute is updated automatically via the *OpticalModule* component check escape.
Mib	LogicalProcessor
Values	Decimal (1..256) none
Default	none

GROUP Lp Sonet CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet customerIdentifier (cid)

Access	Read and write

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Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sonet commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)

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Default	No default

ATTRIBUTE Lp Sonet includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp Sonet IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

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GROUP Lp Sonet OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp Sonet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Sonet operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sonet usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

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Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sonet availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The

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operationalState is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — LogicalProcessor

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Lp Sonet proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase.

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	If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sonet controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sonet alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — LogicalProcessor

Set of
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp Sonet standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

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The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib LogicalProcessor

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default notSet

ATTRIBUTE Lp Sonet unknownStatus (osiUnknw)

Access Read only

Description This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib LogicalProcessor

Values
false
true

Default false

GROUP Lp Sonet Operational (Oper)

Properties Operational

Description

This group contains the common operational data for a *Sonet* or *Sdh* component.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet losAlarm (los)

Access Read only

Description

This attribute indicates whether a Loss Of Signal (LOS) alarm state has been entered. An LOS alarm state is entered when LOS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds, or if an LOS defect is present when the criteria for LOF failure declaration have been met. An LOS defect is declared when 20+/-3 us of all-zeros pattern is detected. The LOS defect is cleared when two valid framing words are detected and no Loss of Signal condition is detected during an interval of 20+/-3 us. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all

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measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the LOS alarm condition is cleared. The LOS alarm state is cleared after LOS defects have been absent for a period of 10 seconds +/- 0.5 seconds.
The *losAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib — LogicalProcessor

Values — on
off

Default — No default

ATTRIBUTE Lp Sonet lofAlarm (lof)

Access — Read only

Description

This attribute displays whether a Loss Of Frame (LOF) alarm state has been entered. An LOF alarm state is entered when LOF defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds, except when an LOS defect or failure is present. An LOF defect is detected when getting contiguous errored frame alignment for at least 3 msec. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the LOF alarm condition is cleared. The condition is cleared when framing has been achieved for a period of 10 seconds +/- 0.5 seconds.
The *lofAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib — LogicalProcessor

Values — on
off

Default — No default

ATTRIBUTE Lp Sonet rxAisAlarm (ais)

Access — Read only

Description

This attribute displays whether a Line Alarm Indication Signal (L-AIS) alarm state has been entered. An L-AIS alarm state is entered when L-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The L-AIS defect is the occurrence of the L-AIS signal in five contiguous STS (STM) frames (111 pattern in bits 6,7, and 8 of the K2 bytes). If the L-AIS defects are intermittently occurring, the L-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

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The *Sonet/Sdh* component goes into an operational state of *disabled* until the L-AIS alarm condition is cleared. The condition is cleared after not detecting the L-AIS signal for a period of 10 seconds +/- 0.5 seconds. The *rxAisAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp Sonet rxRfiAlarm (rfi)

Access: Read only

Description

This attribute displays whether a Line Remote Failure Indication (LRFI) alarm state has been entered. An L-RFI alarm state is entered when Line Remote Failure Indication (L-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The L-RDI defect is the occurrence of the L-RDI signal in five contiguous valid STS (STM) frame (110 pattern in bits 6,7, and 8 of the K2 bytes). If the L-RDI defects are intermittently occurring, the L-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The *Sonet/Sdh* component goes into an operational state of *disabled* until the L-RFI alarm condition is cleared. The condition is cleared after not detecting the L-RDI signal for a period of 10 seconds +/- 0.5 seconds. The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp Sonet txAis

Access: Read only

Description

This attribute displays whether the Line Alarm Indication Signal (L-AIS) signal is being transmitted on the outgoing line. This signal is transmitted when the *Sonet/Sdh* is *locked* and left *offline*.

Mib: LogicalProcessor

Values:
on
off

Default: No default

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ATTRIBUTE Lp Sonet txRdi

Access	Read only
Description	This attribute displays whether the Line Remote Defect Indicator (L-RDI) signal is being transmitted over the OC-3 line. The L-RDI signal is transmitted upon the detection of the LOS, LOF or L-AIS defect. This attribute is always set to ***off*** when the component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet unusableTxClockRefAlarm (utcr)

Access	Read only
Description	This attribute displays whether an Unusable Transmit Clock Reference (UTCR) alarm state has been entered. A UTCR alarm state is entered when a Sonet/Sdh port provisioned to act as a transmit clock reference has received the code “do not use for synchronization” in the S1 byte (in the SONET/ SDH line overhead) for 2.5 +/- 0.5 seconds. The condition is cleared after not detecting the “do not use for synchronization” code for a period of 10 +/- 0.5 seconds or when the port is no longer provisioned to act as a transmit clock reference. A port is acting as a transmit clock reference if it is provisioned with a) a *clockingSource* of *line*, or b) it has been provisioned as a primaryReference, secondaryReference or tertiaryReference in the NetworkSynchronization component. The *unusableTxClockRefAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet s1Rx (s1R)

Access	Read only
Description	This attribute indicates the current S1 byte received on the port.
Mib	LogicalProcessor
Values	Decimal (0..15)

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Default	No default

ATTRIBUTE Lp Sonet s1Tx (s1T)

Access	Read only
Description	This attribute indicates the current S1 byte transmitted on the port.
Mib	LogicalProcessor
Values	Decimal (0..15)
Default	No default

GROUP Lp Sonet Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for a *Sonet* or *Sdh* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet runningTime (time)

Access	Read only
Description	This attribute indicates the total number of seconds since the *Sonet/Sdh* component has been activated and been in unlocked state. All the other error counts that follow can be updated when this count is active.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds that the *Sonet/Sdh* component has been in a near-end error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet sectCodeViolations (scv)

Access	Read only

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Description	This attribute indicates the total number of Section Code Violations (SCVs) detected. A SCV corresponds to section BIP-8 error. SCV counting is inhibited for second intervals where a Section Severely Errored Second (SSES) is counted. The count wraps at its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet sectErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of Section Errored Seconds (SESs) that have been counted. A SES is declared for second intervals containing one or more SCVs or one or more Loss Of Signal (LOS) or Severely Errored Frame (SEF) defects. A SEF defect is the occurrence of 4 contiguous errored STS or STM frame alignment words.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet sectSevErroredSec (sses)

Access	Read only
Description	This attribute indicates the total number of Section Severely Errored Seconds (SSESs) that have been counted. A SSES is declared for second intervals containing more than ***X*** SCVs or one or more LOS or SEF defects. The value of ***X*** is 16 for 155 Mbit/s interface.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet sectLosSec (sloss)

Access	Read only
Description	This attribute indicates the total number of Section LOS Seconds (SLOSSs) that have been counted. A SLOSS is declared for second intervals containing one or more LOS defects.
Mib	LogicalProcessor
Values	Decimal (0..429496729)

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Default	0

ATTRIBUTE Lp Sonet sectSevErroredFrmSec (ssefs)

Access	Read only
Description	This attribute indicates the total number of Section Severely Errored Frame Seconds (SSEFSs) that have been counted. A SSEFS is declared for second intervals containing one or more SEF defects.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet sectFailures (sf)

Access	Read only
Description	This attribute indicates the total number of times that a section failure (LOS or LOF failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineCodeViolations (lcv)

Access	Read only
Description	This attribute indicates the total number of Line Code Violations (LCVs) detected. A LCV corresponds to a line BIP-24 errors. LCV counting is inhibited for second intervals where a Line Severely Errored Second (LSES) is counted. Counting of LCVs is also inhibited over second intervals where a Line Unavailable Second (LUAS) is counted. The count wraps when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineErroredSec (les)

Access	Read only
Description	This attribute indicates the total number of Line Errored Seconds (LESs) that have been counted. A LES is declared for second intervals containing one or more LCVs or one or more line AIS defects. Counting of LES is inhibited over second intervals where a LUAS is counted.

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Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineSevErroredSec (lses)

Access	Read only
Description	This attribute indicates the total number of Line Severely Errored Seconds (LSESs) that have been counted. A LSES is declared for second intervals containing more than *X* LCVs or one or more L-AIS defects. The value of *X* is 32 for 155 Mbits/sec interface. Counting of LSES is inhibited over second intervals where a LUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineAisSec (laiss)

Access	Read only
Description	This attribute indicates the total number of Line AIS Seconds (LAISSs) that have been counted. A LAISS is declared for second intervals containing one or more L-AIS defects. Counting of LAISS is inhibited over second intervals where a LUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineUnavailSec (luas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the STS line is unavailable. The STS line becomes unavailable at the onset of 10 consecutive LSESs. The 10 LSESs are included in the unavailable time. Once unavailable, the STS line becomes available at the onset of 10 contiguous seconds with no LSES. The 10 seconds with no LSES are excluded from the unavailable time. For second intervals where a Line Unavailable Second (LUAS) is counted, counting of LCV, LES, LSES and LAISS is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Lp Sonet lineFailures (lf)

Access	Read only
Description	This attribute indicates the total number of times that a line failure (L-AIS failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet farEndLineErrorFreeSec (felefs)

Access	Read only
Description	This attribute indicates the number of seconds that the *Sonet* or *Sdh* component has been in a far-end error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet farEndLineCodeViolations (felcv)

Access	Read only
Description	This attribute indicates the total number of line FEBE detected from the incoming line. The counting of line FEBE is inhibited for second intervals where a Far-End Line Severely Errored Second (FELSES) is counted. Counting of FELCVs is also inhibited over second intervals where a Far-End Line Unavailable Second (FELUAS) is counted. The count wraps at its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet farEndLineErroredSec (feles)

Access	Read only
Description	This attribute indicates the total number of Far-End Line Errored Seconds (FELESs) that have been counted. A FELES is declared for second intervals containing one or more Far-End Line CVs (FELCVs) or one or

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more L-RDI defects. Counting of FELES is inhibited over second intervals where a FELUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet farEndLineSevErroredSec (felses)

Access Read only

Description

This attribute indicates the total number of Far-End Line Severely Errored Seconds (FELSESs) that have been counted. A FELSES is declared for second intervals containing more than ***X*** FELCVs or one or more L-RDI defects. The value of ***X*** is 32 for 155 Mbit/s interface. Counting of FELSES is inhibited over second intervals where a FELUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet farEndLineAisSec (felaiss)

Access Read only

Description

This attribute indicates the total number of Far-End Line AIS Seconds (FELAISSs) that have been counted. A FELAISS is declared for second intervals one or more L-RDI defects. Counting of FELAISS is inhibited over second intervals where a FELUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet farEndLineUnavailSec (feluas)

Access Read only

Description

This attribute indicates the total number of one second intervals for which the STS far-end line is unavailable. The STS far-end line becomes unavailable at the onset of 10 consecutive FELSESs. The 10 FELSESs are included in the unavailable time. Once unavailable, the STS far-end line becomes available at the onset of 10 contiguous seconds with no FELSES. The 10 seconds with no FELSES are excluded from the unavailable time. For second intervals where a Far-End Line Unavailable Second (FELUAS) is counted, counting of FELCV, FELES, FELSES and FELAISS is inhibited.

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Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet farEndLineFailures (felf)

Access	Read only
Description	This attribute indicates the total number of times that a far-end line failure (L-RFI failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sonet Path

Instance	Decimal (0..0)
Groups	GROUP Lp Sonet Path Provisioned (Prov) GROUP Lp Sonet Path CustomerIdentifierData (CidData) GROUP Lp Sonet Path OsiState (State) GROUP Lp Sonet Path IfEntryProv (IfEntry) GROUP Lp Sonet Path OperationalStatus (OperStatus) GROUP Lp Sonet Path Operational (Oper) GROUP Lp Sonet Path Statistics (Stats)
Scope	Device
Description	*Lp/n Sonet/n Path/0* *Lp/n Sdh/n Path/0* This component controls a path signal that is carried within a SONET or SDH signal. The *Path* component can only be added under a *Sonet* or *Sdh* component on a Nortel Networks Multiservice Switch 7400. The *Path* component exists only on the Nortel Networks Multiservice Switch 7400. The equivalent components on the Nortel Networks Multiservice Switch 15000 and 20000 are the *Sts* component under a *Sonet* component and the *Vc4* component under an *Sdh* component.

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On the Nortel Networks Multiservice Switch 15000 and 20000 a *Path* component is not allowed under a *Sonet* or *Sdh* component.

Mib LogicalProcessor

Subcomponents COMPONENT Lp Sonet Path AtmCell (Cell)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Sonet Path Provisioned (Prov)

Properties Provisioned

Description
This group contains all of the provisioning data for the component.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Path applicationFramerName (framer)

Access Read only

Description
This attribute defines which application is running on the path.

Mib LogicalProcessor

Values Link

Default No default

GROUP Lp Sonet Path CustomerIdentifierData (CidData)

Properties Provisioned

Description This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Path customerIdentifier (cid)

Access Read and write

Description This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

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Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib LogicalProcessor

Values Decimal (0; 1..8191)

Default 0

GROUP Lp Sonet Path OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Path adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib LogicalProcessor

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Path **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet Path **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

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ATTRIBUTE Lp Sonet Path **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sonet Path proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sonet Path controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sonet Path alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — LogicalProcessor

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp Sonet Path **standbyStatus (osiStby)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sonet Path unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp Sonet Path lfEntryProv (lfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Path ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

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Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Path OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp Sonet Path Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

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The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp Sonet Path rxAisAlarm (ais)

Access: Read only

Description

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp Sonet Path rxRfiAlarm (rfi)

Access: Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or

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STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — LogicalProcessor

Values — on
off

Default — No default

ATTRIBUTE Lp Sonet Path signalLabelMismatch (slm)

Access — Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

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Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet Path txAis

Access	Read only
Description	This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet Path txRdi

Access	Read only
Description	This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	LogicalProcessor
Values	on off
Default	No default

GROUP Lp Sonet Path Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path pathErrorFreeSec (pefs)

Access	Read only

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Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Path **pathCodeViolations (pcv)**

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Path **pathErroredSec (pes)**

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Path **pathSevErroredSec (pses)**

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for

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a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path pathAisLopSec (pals)

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path pathFailures (pf)

Access Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path

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Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path farEndPathErrorFreeSec (fepefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path farEndPathCodeViolations (fepcv)

Access Read only

Description

This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

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The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second

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intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path farEndPathFailures (fepf)

Access Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sonet Path AtmCell (Cell)

Groups GROUP Lp Sonet Path Cell Provisioned (Prov)
GROUP Lp Sonet Path Cell Operational (Oper)
GROUP Lp Sonet Path Cell Statistics (Stats)

Scope Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib LogicalProcessor

Common Verbs Help
List
Display

GROUP Lp Sonet Path Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

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Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path Cell **alarmActDelay (act)**

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	LogicalProcessor
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp Sonet Path Cell **scrambleCellPayload (scramble)**

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	LogicalProcessor
Values	off on
Default	No default

ATTRIBUTE Lp Sonet Path Cell **correctSingleBitHeaderErrors**

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

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Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: LogicalProcessor

Values: off
on

Default: off

ATTRIBUTE Lp Sonet Path Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp Sonet Path Cell hecSampleInterval (hSample)

Access: Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (0..25)

Units: seconds

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Default	0

ATTRIBUTE Lp Sonet Path Cell **hecErrorLimit (hLimit)**

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp Sonet Path Cell **lcdStateDelay (delay)**

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp Sonet Path Cell **hecErrorIntervalLimit (hIntLimit)**

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before

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an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..25)

Default 1

GROUP Lp Sonet Path Cell Operational (Oper)

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Path Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell*

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component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp Sonet Path Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Path Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where

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the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sonet Path Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sonet Path Cell correctableHeaderErrors (cErr)

Access Read only

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Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sonet Test (Test)

Groups
GROUP Lp Sonet Test OsiState (State)
GROUP Lp Sonet Test Setup (Setup)
GROUP Lp Sonet Test Results (Results)

Scope Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs
Help
List
Display

VERB START Lp Sonet Test

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sonet Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Lp Sonet Test OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — LogicalProcessor

ATTRIBUTE Lp Sonet Test adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — LogicalProcessor

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp Sonet Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — LogicalProcessor

Values — enabled (ena)
disabled (dis)

Default — disabled

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ATTRIBUTE Lp Sonet Test **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp Sonet Test **Setup (Setup)**

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate

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test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Sonet Test **frmSize (size)**

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

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Default	1024

ATTRIBUTE Lp Sonet Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sonet Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sonet Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds

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Default	0

ATTRIBUTE Lp Sonet Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Sonet Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Sonet Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started.

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a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Sonet Test bitsTx

Access	Read only

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Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test bytesRx

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Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the

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	link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Sonet Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sonet Sts

Instance	Decimal (0..11)
Groups	GROUP Lp Sonet Sts Provisioned (Prov) GROUP Lp Sonet Sts CustomerIdentifierData (CidData) GROUP Lp Sonet Sts OsiState (State)

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GROUP Lp Sonet Sts IfEntryProv (IfEntry)
GROUP Lp Sonet Sts OperationalStatus (OperStatus)
GROUP Lp Sonet Sts Operational (Oper)
GROUP Lp Sonet Sts Statistics (Stats)
GROUP Lp Sonet Sts Provisioned (Prov)

Scope: Device

Description:

Lp/n Sonet/n Sts/n
Laps/n Sts/n
Pbg/n Sts/n

This component controls a path signal that is carried within a SONET signal.

The instance number of the *Sts* component must be 0 for components on cards that do not support channelization.

On FPs supporting channelization. the Sts index indicates the sub-channel within the main optical payload.

Mib: SonetSdh

Opt. Subcomp.:
COMPONENT Lp Sonet Sts AtmCell (Cell)
COMPONENT Lp Sonet Sts Vt1dot5

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Sonet Sts Provisioned (Prov)

Properties: Provisioned

Description:

This group contains all of the provisioning data for the component.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts applicationFramerName (framer)

Access: Read and write

Description:

This attribute defines which application is running on the path.

Mib: SonetSdh

Values: Link

Default: No default

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GROUP Lp Sonet Sts CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet Sts OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — SonetSdh

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp Sonet Sts operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — SonetSdh

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp Sonet Sts usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sonet Sts availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

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The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — SonetSdh

Set of —
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Lp Sonet Sts proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — SonetSdh

Set of
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp Sonet Sts controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — SonetSdh

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

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ATTRIBUTE Lp Sonet Sts alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sonet Sts standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service

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but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib SonetSdh

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default notSet

ATTRIBUTE Lp Sonet Sts unknownStatus (osiUnknw)

Access Read only

Description This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib SonetSdh

Values
false
true

Default false

GROUP Lp Sonet Sts IfEntryProv (IfEntry)

Properties Provisioned

Description This group contains the provisionable attributes for the ifEntry.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts ifAdminStatus (ifState)

Access Read and write

Description The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib SonetSdh

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Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Sts ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Sts OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sonet Sts Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts lopAlarm (lop)

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Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds. The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	SonetSdh
Values	on off
Default	No default

ATTRIBUTE **Lp Sonet Sts** **rxAisAlarm (ais)**

Access	Read only
Description	This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds. The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	SonetSdh
Values	on off

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Default No default

ATTRIBUTE Lp Sonet Sts rxRfiAlarm (rfi)

Access Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sonet Sts signalLabelMismatch (slm)

Access Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect

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accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — SonetSdh

Values — on
off

Default — No default

ATTRIBUTE Lp Sonet Sts txAis

Access — Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — SonetSdh

Values — on
off

Default — No default

ATTRIBUTE Lp Sonet Sts txRdi

Access — Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — SonetSdh

Values — on
off

Default — No default

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GROUP Lp Sonet Sts Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathUnavailSec (puas)

Access	Read only
Description	This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.

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Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathErrorFreeSec (fepefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp Sonet Sts farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathAisLopSec (fepals)

Access	Read only
Description	This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathUnavailSec (fepuas)

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Access	Read only
Description	This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

GROUP Lp Sonet Sts Provisioned (ChProv)

Properties	Provisioned
Description	This group contains the provisioning data for *Sts* components provisioned under *Sonet* components that support channelization..
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts txPathTrace

Access	Read and write
Description	This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. The path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SONET frames. At the remote end, the path trace is reassembled, and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued.

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The functionality supported by this attribute is not available.

Mib	SonetSdh
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Lp Sonet Sts expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	SonetSdh
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Lp Sonet Sts concatNumber

Access	Read and write
Criticality	Process
Description	This attribute specifies the STS concatenation level for the *Sts* component on channelized cards. It must be set to a concatenation level supported by the FP upon which the *Sts* is defined, except for non-channelized cards, in which case it must be set to 0. For example, a value of 1 in this attribute would represent STS-1 concatenation, while a value of 3 would represent STS-3c, a value of 12 would represent STS-12c, and so forth. *Sts* channelization to the tributary level is supported only if this attribute is set to 1.
Mib	SonetSdh
Values	Decimal (0; 1; 3; 12; 48)
Default	No default

COMPONENT Lp Sonet Sts AtmCell (Cell)

Groups	GROUP Lp Sonet Sts Cell Provisioned (Prov) GROUP Lp Sonet Sts Cell Operational (Oper) GROUP Lp Sonet Sts Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes.

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The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib SonetSdh

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp Sonet Sts Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib SonetSdh

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp Sonet Sts Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether

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or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib SonetSdh

Values
off
on

Default No default

ATTRIBUTE Lp Sonet Sts Cell correctSingleBitHeaderErrors

Access Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib SonetSdh

Values
off
on

Default off

ATTRIBUTE Lp Sonet Sts Cell clearDelay (clear)

Access Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib SonetSdh

Values Decimal (0..60)

Units minutes

Default 0

ATTRIBUTE Lp Sonet Sts Cell hecSampleInterval (hSample)

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Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet Sts Cell **hecErrorLimit (hLimit)**

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp Sonet Sts Cell **lcdStateDelay (delay)**

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell

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Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib SonetSdh

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Lp Sonet Sts Cell hecErrorIntervalLimit (hIntLimit)

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib SonetSdh

Values Decimal (1..25)

Default 1

GROUP Lp Sonet Sts Cell Operational (Oper)

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure

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alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib — SonetSdh

Values — on
off

Default — off

GROUP Lp Sonet Sts Cell **Statistics (Stats)**

Properties — Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib — SonetSdh

ATTRIBUTE Lp Sonet Sts Cell **uncorrectableHeaderErrors (ucErr)**

Access — Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

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Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Cell **sevErroredSec (ses)**

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Cell **receiveCellUtilization (rxutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	SonetSdh
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp Sonet Sts Cell **transmitCellUtilization (txutil)**

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Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	SonetSdh
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp Sonet Sts Cell **correctableHeaderErrors (cErr)**

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sonet Sts **Vt1dot5**

Instance	l [Decimal (1..7)] m [Decimal (1..4)]
Groups	GROUP Lp Sonet Sts Vt1dot5 CustomerIdentifierData (CidData) GROUP Lp Sonet Sts Vt1dot5 OsiState (State) GROUP Lp Sonet Sts Vt1dot5 IfEntryProv (IfEntry) GROUP Lp Sonet Sts Vt1dot5 OperationalStatus (OperStatus) GROUP Lp Sonet Sts Vt1dot5 Operational (Oper) GROUP Lp Sonet Sts Vt1dot5 Statistics (Stats)
Scope	Device
Description	*Lp/n Sonet/n Sts/k Vt1dot5/l,m* *Laps/n Sts/k Vt1dot5/l,m*

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This component represents the *Vt1.5* low order path signal that is carried within a SONET signal.

Mib — SonetSdh

Opt. Subcomp. — COMPONENT Lp Sonet Sts Vt1dot5 DS1

Common Verbs
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Lp Sonet Sts Vt1dot5 CustomerIdentifierData (CidData)

Properties — Provisioned

Description — This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib — SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 customerIdentifier (cid)

Access — Read and write

Description — This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib — SonetSdh

Values — Decimal (0; 1..8191)

Default — 0

GROUP Lp Sonet Sts Vt1dot5 OsiState (State)

Properties — Operational

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Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sonet Sts Vt1dot5 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

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The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE **Lp Sonet Sts Vt1dot5** **controlStatus (osiCntrl)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

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The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — SonetSdh

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **alarmStatus (osiAlarm)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — SonetSdh

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

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Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sonet Sts Vt1dot5 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	SonetSdh
Values	false true
Default	false

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GROUP Lp Sonet Sts Vt1dot5 **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Sts Vt1dot5 **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Sts Vt1dot5 **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh

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Values	up down testing
Default	up

GROUP Lp Sonet Sts Vt1dot5 **Operational (Oper)**

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 **rxAisAlarm**

Access	Read only
Description	This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	SonetSdh
Values	on off
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **rxRdiAlarm**

Access	Read only
Description	This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	SonetSdh
Values	on off
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **rxRfiAlarm**

Access	Read only

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Description

This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **unequippedAlarm**

Access Read only

Description

This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **traceIdMismatchAlarm**

Access Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **lopAlarm**

Access Read only

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Description

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on, off

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **txAis**

Access: Read only

Description

This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency*.

Mib: SonetSdh

Values: on, off

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 **txRdi**

Access: Read only

Description

This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is *off* when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency*.

Mib: SonetSdh

Values: on, off

Default: No default

GROUP Lp Sonet Sts Vt1dot5 **Statistics (Stats)**

Properties: Operational

Description

This group contains the statistics data for the component.

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Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathSevErroredSec (pses)

Access	Read only

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Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *X* PCVs or one or more LOP or path AIS defects. The value of *X* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 **pathAisLopSec (pals)**

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 **pathUnavailSec (puas)**

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 **pathFailures (pf)**

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Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 **farEndPathErrorFreeSec (fepefs)**

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 **farEndPathCodeViolations (fepcv)**

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 **farEndPathErroredSec (fepes)**

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects.

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Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at

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the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 **farEndPathFailures (fepf)**

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sonet Sts Vt1dot5 **DS1**

Groups	GROUP Lp Sonet Sts Vt1dot5 DS1 Provisioned (Prov) GROUP Lp Sonet Sts Vt1dot5 DS1 CustomerIdentifierData (CidData) GROUP Lp Sonet Sts Vt1dot5 DS1 AdminInfo (AdminInfo) GROUP Lp Sonet Sts Vt1dot5 DS1 IfEntryProv (IfEntry) GROUP Lp Sonet Sts Vt1dot5 DS1 OperationalStatus (OperStatus) GROUP Lp Sonet Sts Vt1dot5 DS1 OsiState (State) GROUP Lp Sonet Sts Vt1dot5 DS1 Operational (Oper) GROUP Lp Sonet Sts Vt1dot5 DS1 Statistics (Stats)
Scope	Application
Description	*Lp/n DS3/n DS1/n* The *DS1* component controls and monitors a DS1 tributary of a

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channelized DS3 port on a Function Processor that supports channelization of a DS3.

Mib	SonetSdh
Subcomponents	COMPONENT Lp Sonet Sts Vt1dot5 DS1 Channel (Chan)
Dyn. Subcomp.	COMPONENT Lp Sonet Sts Vt1dot5 DS1 Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sonet Sts Vt1dot5 DS1 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *DS1* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 lineType (lineType)

Access	Read and write
Description	This attribute defines the framing of the DS1 tributary. ***d4*** defines a framing pattern of 12 frames per multiframe. ***esf*** defines a framing pattern of 24 frames per multiframe. ***d4Cas*** defines a framing pattern of 12 frames per multiframe with channel associated signalling. ***esfCas*** defines a framing pattern of 24 frames per multiframe with channel associated signalling. ***unframed*** defines an unknown framing pattern for clear channels. For the ***4pDS3ChAtm*** card, only ***d4*** and ***esf*** framing patterns are permitted. The ***4pDS3ChAal1*** card supports the ***d4*** and ***esf*** framing patterns, as well as ***unframed***.
Mib	SonetSdh
Values	d4 esf d4Cas esfCas unframed
Default	esf

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **zeroCoding (zeroCoding)**

Access	Read and write
Criticality	Component
Description	This attribute defines the zero encoding on the DS1 tributary. ***bit7Stuffing*** sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8. ***none*** does no zero encoding, it does not change any value of the bits in the timeslot. The value ***none*** is compatible with any zero coding scheme which transports all 8 data bits in a timeslot (this would include both ***ami*** and ***b8zs*** values of the *DS1 zeroCoding* attribute).
Mib	SonetSdh
Values	bit7Stuffing none
Default	none

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **clockingSource (clockingSource)**

Access	Read and write
Description	This attribute specifies the source of the transmit clock for the DS1 tributary. When the clocking source is ***local***, the crystal on the port generates the clocking for the DS1 tributary. When the clocking source is ***line***, the port synchronizes to the clock from the DS1 tributary. When the clocking source is ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP. When the clocking source is ***sameAsDs3***, the Ds1 port's clock synchronizes to the same clock source as that of its parent Ds3 port. On a ***1pDS3C*** card, if the *NetworkSynchronization (NS)* component is present, the default value of this attribute will be ***module***; otherwise it will be ***line***. On a ***2pDS3cAal*** card, the only valid values are ***local*** and ***module***. If the *NS* component is present, the default value of this attribute will be ***module***; otherwise it will be ***local***. On the ***4pDS3Ch***, ***4pDS3ChAtm***, and ***4pDS3ChAal1*** cards, the only valid value is ***sameAsDs3***. This is because a DS1 must have the same clocking source as its parent DS3.
Mib	SonetSdh
Values	local line

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module
sameAsDs3

Default — No default

GROUP Lp Sonet Sts Vt1dot5 DS1 **CustomerIdentifierData (CidData)**

Properties — Provisioned

Description — This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib — SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **customerIdentifier (cid)**

Access — Read and write

Description — This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib — SonetSdh

Values — Decimal (0; 1..8191)

Default — 0

GROUP Lp Sonet Sts Vt1dot5 DS1 **AdminInfo (AdminInfo)**

Properties — Provisioned

Description — This group contains the attributes pertaining to the vendor of the equipment.

Mib — SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **vendor**

Access — Read and write

Description — This is the name of the vendor supplying the facility.

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Mib	SonetSdh
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **commentText**

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	SonetSdh
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **includeAdminInfoInAlarm**

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	SonetSdh
Values	no yes
Default	no

GROUP Lp Sonet Sts Vt1dot5 DS1 **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Sts Vt1dot5 DS1 **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sonet Sts Vt1dot5 DS1 **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — SonetSdh

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	SonetSdh
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: SonetSdh

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: SonetSdh

Values:
false
true

Default: false

GROUP Lp Sonet Sts Vt1dot5 DS1 Operational (Oper)

Properties: Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib: SonetSdh

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **rxAisAlarm (rxAisAlarm)**

Access	Read only
Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.
Mib	SonetSdh
Values	on off
Default	off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **lofAlarm (lofAlarm)**

Access	Read only
Description	This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (2 out of 5 framing bits in error) have been detected for 3 seconds +/- 0.5 seconds. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.
Mib	SonetSdh
Values	on off
Default	off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **rxRaiAlarm (rxRaiAlarm)**

Access	Read only
Description	This attribute indicates whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/-

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0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds. The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **txAisAlarm (txAisAlarm)**

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the tributary is in a locked state.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **txRaiAlarm (txRaiAlarm)**

Access Read only

Description

This attribute indicates whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the tributary detects a LOF alarm condition.

Mib SonetSdh

Values on
off

Default off

GROUP Lp Sonet Sts Vt1dot5 DS1 **Statistics (Stats)**

Properties Operational

Description

This group contains the common statistical data for a component in a digital hierarchy interface.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **runningTime (runningTime)**

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Access	Read only
Description	This attribute counts the number of seconds since the tributary was activated.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 errorFreeSec (efs)

Access	Read only
Description	This attribute counts the number of seconds that the tributary has been in an error free state.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 erroredSec (es)

Access	Read only
Description	This attribute counts the number of errored seconds the tributary has counted since it was activated. An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 sevErroredSec (ses)

Access	Read only
Description	This attribute counts the number of severely errored seconds the tributary has counted since it was activated. A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **sevErroredFrmSec (sefs)**

Access	Read only
Description	This attribute counts the number of severely errored framing seconds the tributary has counted since it was activated A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **unavailSec**

Access	Read only
Description	This attribute counts the total number of seconds that the tributary has been in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **crcErrors (crcErrors)**

Access	Read only
Description	This attribute counts the total number of CRC-6 errors. These will only be counted when the *lineType* is ***esf***.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 **frmErrors (frmErrors)**

Access	Read only
Description	This attribute counts the total number of frame errors. A frame error is an error in the framing bits.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Channel (Chan)

Instance	Decimal (0..23)
Groups	GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Provisioned (Prov) GROUP Lp Sonet Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData) GROUP Lp Sonet Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry) GROUP Lp Sonet Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus) GROUP Lp Sonet Sts Vt1dot5 DS1 Chan OsiState (State) GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Operational (Oper) GROUP Lp Sonet Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.
Mib	SonetSdh
Opt. Subcomp.	COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan AtmCell (Cell) COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)
Dyn. Subcomp.	COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Provisioned (Prov)

Properties	Provisioned

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Description	This group contains all of the provisional data for a *Channel* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.
Mib	SonetSdh
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

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20
21
22
23
24
25
26
27
28
29
30
31

Default — No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **timeslotDataRate (dataRate)**

Access — Read and write

Criticality — Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib — SonetSdh

Values — 56k
doNotOverride

Default — doNotOverride

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **applicationFramerName**

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	SonetSdh
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan **CustomerIdentifierData (CidData)**

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **customerIdentifier (cid)**

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan **OsiState (State)**

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Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that

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prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **Lp Sonet Sts Vt1dot5 DS1 Chan** **proceduralStatus (osiProc)**

Access	Read only

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Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE **Lp Sonet Sts Vt1dot5 DS1 Chan** **controlStatus (osiCntrl)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

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The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — SonetSdh

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **alarmStatus (osiAlarm)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.

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Mib	SonetSdh
Values	false true
Default	false

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan **Operational (Oper)**

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **actualChannelSpeed**

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan **AdminInfo (AdminInfo)**

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **vendor**

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	SonetSdh
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **commentText**

Access	Read and write
Description	Any miscellaneous text about the facility.

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Mib	SonetSdh
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan **includeAdminInfoInAlarm**

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	SonetSdh
Values	no yes
Default	no

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan **Test (Test)**

Groups	GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test OsiState (State) GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test Setup (Setup) GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	SonetSdh
Common Verbs	Help List Display

VERB START Lp Sonet Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sonet Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

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GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SonetSdh

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Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test **Setup (Setup)**

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	SonetSdh
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test.

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manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: SonetSdh

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **frmSize (size)**

Access: Read and write

Description

This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: SonetSdh

Values: Decimal (4..4096)

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Units	bytes
Default	1024

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **frmPatternType (fpt)**

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	SonetSdh
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	SonetSdh
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	SonetSdh
Values	Decimal (0..1814400)
Units	seconds

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Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	SonetSdh
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started.

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a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	SonetSdh
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE **Lp Sonet Sts Vt1dot5 DS1 Chan Test** **bitsTx**

Access	Read only

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Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **bytesTx**

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **frmTx**

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **bitsRx**

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **bytesRx**

Access Read only

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Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **frmRx**

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **erroredFrmRx**

Access Read only

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame.

For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **bitErrorRate**

Access Read only

Description

This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be

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updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib — SonetSdh

Values — String (5, ASCII)

Default — No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **elapsedTime**

Access — Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib — SonetSdh

Values — Decimal (0.00..30240.00)

Units — minutes

Default — 0.00

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test **timeRemaining**

Access — Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib — SonetSdh

Values — Decimal (0.00..30240.00)

Units — minutes

Default — 0.00

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan **AtmCell (Cell)**

Groups — GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov)
GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Operational (Oper)
GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)

Scope — Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off.

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The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib SonetSdh

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell **Provisioned (Prov)**

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **alarmActDelay (act)**

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib SonetSdh

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **scrambleCellPayload (scramble)**

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

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Mib	SonetSdh
Values	off on
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **correctSingleBitHeaderErrors**

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	SonetSdh
Values	off on
Default	off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **clearDelay (clear)**

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **hecSampleInterval (hSample)**

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors

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associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib — SonetSdh

Values — Decimal (0..25)

Units — seconds

Default — 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **hecErrorLimit (hLimit)**

Access — Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib — SonetSdh

Values — Decimal (1..250000)

Default — No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **lcdStateDelay (delay)**

Access — Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.

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This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib SonetSdh

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **hecErrorIntervalLimit (hIntLimit)**

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib SonetSdh

Values Decimal (1..25)

Default 1

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell **Operational (Oper)**

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **lcdAlarm (lcd)**

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell

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Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: SonetSdh

Values:
on
off

Default: off

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)

Properties: Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access: Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **sevErroredSec (ses)**

Access: Read only

Description:

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **receiveCellUtilization (rxutil)**

Access: Read only

Description:

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: SonetSdh

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **transmitCellUtilization (txutil)**

Access: Read only

Description:

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.

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This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: SonetSdh

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell **correctableHeaderErrors (cErr)**

Access: Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan **TrunkConditioning (Tc)**

Groups: GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov)
GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Tc Operational (Op)

Scope: Device

Description

Lp/n Ds1/n Chan/n Tc
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

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When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib: SonetSdh

Common Verbs:
Help
List
Display
Add
DELete

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Tc **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains all specific provisioning data for a *Tc* component.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc **replacementData (data)**

Access: Read and write

Description: This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default

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value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib	SonetSdh
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc **signalOneDuration (duration)**

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	SonetSdh
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc **noServiceResponse (resp)**

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	SonetSdh
Values	autoConfigure tc ais noResponse

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Default	autoConfigure

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc **signalOne (sigOne)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	SonetSdh
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc **signalTwo (sigTwo)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	SonetSdh
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Tc **Operational (Op)**

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	SonetSdh

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ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc **ingressConditioning (inCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	SonetSdh
Values	off on
Default	off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc **egressConditioning (egCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the PDH line under the following conditions: bufferUnderflow (BU) AAL1 protocol errors.
Mib	SonetSdh
Values	off on

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Default	off

COMPONENT Lp Sonet Sts Vt1dot5 DS1 **Test (Test)**

Groups	GROUP Lp Sonet Sts Vt1dot5 DS1 Test OsiState (State) GROUP Lp Sonet Sts Vt1dot5 DS1 Test Setup (Setup) GROUP Lp Sonet Sts Vt1dot5 DS1 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	SonetSdh
Common Verbs	Help List Display

VERB START Lp Sonet Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sonet Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Sonet Sts Vt1dot5 DS1 Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib SonetSdh

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **operationalState (osiOper)**

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib SonetSdh

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **usageState (osiUsage)**

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

GROUP Lp Sonet Sts Vt1dot5 DS1 Test **Setup (Setup)**

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	SonetSdh
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1

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byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: SonetSdh

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **frmSize (size)**

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: SonetSdh

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **frmPatternType (fpt)**

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: SonetSdh

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Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	SonetSdh
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	SonetSdh
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	SonetSdh
Values	Decimal (0..30240)

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Units	minutes
Default	5

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Sonet Sts Vt1dot5 DS1 Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

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a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib SonetSdh

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **bitsTx**

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **bytesTx**

Access Read only

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Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **frmTx**

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **bitsRx**

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **bytesRx**

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **frmRx**

Access Read only

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Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	SonetSdh
Values	String (5, ASCII)

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Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test **timeRemaining**

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sonet **OpticalModule (Om)**

Groups	GROUP Lp Sonet Om Provisioned (Prov) GROUP Lp Sonet Om OsiState (State) GROUP Lp Sonet Om Operational (Oper)
Scope	Device
Description	*Lp/n Ethernet/n OpticalModule* This component represents the optical module device of the port. The optical module is used to identify the type of connection for a port.
Mib	SonetSdh
Common Verbs	Help List Display Add DELete

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GROUP Lp Sonet Om Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *OpticalModule* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Om type

Access	Read and write
Description	This attribute specifies the expected optical module type. The values for the *type* and *insertedType* attributes must match; otherwise, an alarm is raised and the *OpticalModule* component is disabled. ***none***: This value indicates that no optical module type is specified. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode. ***SX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode. ***OC3SmLr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC3SmIr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC3MmSr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach). ***OC12SmLr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC12SmIr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC48SmLr***: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC48SmLr2***: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-

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Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib — SonetSdh

Values
none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr
OC48SmLr2
OC48SmIr

Default — none

GROUP Lp Sonet Om OsiState (State)

Properties — Operational

Description — This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — SonetSdh

ATTRIBUTE Lp Sonet Om adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Om operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet Om usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

GROUP Lp Sonet Om Operational (Oper)

Properties	Operational

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Description	This group contains the operational data for the *OpticalModule* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Om insertedType

Access	Read only
Description	This attribute indicates the inserted optical module type. ***none***: This value indicates that there is no optical module inserted in the card. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode. ***SX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode. ***OC3SmLr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC3SmIr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC3MmSr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach). ***OC12SmLr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC12SmIr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC48SmLr***: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC48SmLr2***: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC48SmIr***: This value indicates that the optical module is an OC48 type

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	with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).
Mib	SonetSdh
Values	none LX SX OC3SmLr OC3SmIr OC3MmSr OC12SmLr OC12SmIr OC48SmLr OC48SmLr2 OC48SmIr
Default	none

ATTRIBUTE Lp Sonet Om serialNumber

Access	Read only
Description	This attribute indicates the serial number of the inserted optical module.
Mib	SonetSdh
Values	String (0..64, Extended ASCII)
Default	""

ATTRIBUTE Lp Sonet Om failureCause

Access	Read only
Description	This attribute indicates the cause for the optical module's failure. The possible values are: ***typeMismatch***: This error indicates a mismatch between the *type* and *insertedType* attributes. ***internalError***: This error indicates an internal diagnostic failure of the optical module. ***unsupportedOm:*** This error indicates that the inserted optical module is not supported on this card. ***absentOm***: This error indicates that no optical module are currently present on this port. ***noFailure***: There is no failure.
Mib	SonetSdh

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Values	typeMismatch internalError unsupportedOm absentOm noFailure
Default	noFailure

COMPONENT Lp Sdh

Instance	Decimal (0..15)
Groups	GROUP Lp Sdh Provisioned (Prov) GROUP Lp Sdh CustomerIdentifierData (CidData) GROUP Lp Sdh AdminInfo (AdminInfo) GROUP Lp Sdh IfEntryProv (IfEntry) GROUP Lp Sdh OperationalStatus (OperStatus) GROUP Lp Sdh OsiState (State) GROUP Lp Sdh Operational (Oper) GROUP Lp Sdh Statistics (Stats)
Scope	Device
Description	*Lp/n Sdh/n* This component controls a port using the SDH hierachy. In particular, it deals with SDH medium, section and line layers. A *Path* component may be automatically created when an *Sdh* component is added on a some Nortel Networks Multiservice Switch 7400 FPs. The *Path* component is used only on FPs that do not support Virtual Container (VC).
Mib	LogicalProcessor
Opt. Subcomp.	COMPONENT Lp Sdh Path COMPONENT Lp Sdh Vc4 COMPONENT Lp Sdh OpticalModule (Om)
Dyn. Subcomp.	COMPONENT Lp Sdh Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sdh Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for a *Sonet* or *Sdh* component.

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Mib	LogicalProcessor

ATTRIBUTE Lp Sdh clockingSource

Access	Read and write
Description	This attribute defines the type of clocking source used for synchronizing the transmit clock: ***local*** means direct use of the local clock oscillator at its centre frequency; ***line*** means the use of a signal phase-locked to the incoming line rate; ***module*** means the use of a signal phase-locked to the CP reference clock. When adding a *Sonet* or *Sdh* component, the *clockingSource* attribute is set to ***module*** if the *NetworkSynchronization* component has been added and is set to ***local*** otherwise. Note that the multiport cell-based cards have one common clock source for each of the three ports when either the clocking source ***local*** or ***module*** is selected. For this reason, it is not allowed to have at the same time the *clockingSource* attribute set to ***local*** on one port and ***module*** on another port. Furthermore, the *clockingSource* attribute cannot be set to ***module*** if the *NetworkSynchronization* component has not been added.
Mib	LogicalProcessor
Values	local line module
Default	No default

ATTRIBUTE Lp Sdh lineAutomaticProtectionSwitch (laps)

Access	Read and write
Criticality	Process
Description	This attribute specifies the name of the *Laps* component. In the case of intra-card configurations, the specified *Laps* component is used to provide sparing of lines which use this port and its mate; in the case of inter-card configurations, the specified *Laps* component is used to provide sparing of lines only.
Mib	LogicalProcessor
Values	Link
Default	No default

ATTRIBUTE Lp Sdh txSectionTrace

Access	Read and write

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Description	This attribute specifies the section identifier. The string must be constructed with 7-bit characters only. The section identifier is prefixed by a CRC byte and padded with null characters if necessary to form the 16-octet section trace message transmitted in byte J0 of 16 outgoing frames. At the remote end, the section trace is reassembled, the CRC is checked and the message is compared to the *expectedRxSectionTrace* attribute. If a mismatch is detected, an alarm is issued. Usage guidelines for the section trace are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format. The functionality supported by this attribute is not available.
Mib	LogicalProcessor
Values	String (0..15, Extended ASCII)
Default	""

ATTRIBUTE Lp Sdh expectedRxSectionTrace

Access	Read and write
Description	This attribute specifies the expected section trace identifier which is used to identify the fiber connected to the associated port. This attribute must match the corresponding *txSectionTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	LogicalProcessor
Values	String (0..15, Extended ASCII)
Default	""

ATTRIBUTE Lp Sdh s1RxDefault

Access	Read and write
Description	This attribute specifies the default S1 byte reported by the port when the received S1 byte is 0 (quality unknown). No default is applied when this attribute is set to ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

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ATTRIBUTE Lp Sdh s1TxOverride

Access	Read and write
Description	This attribute specifies the S1 byte transmitted on the port regardless of the Synchronization Status Message (SSM) value provided by the *NetworkSynchronization* component. Changes in SSM value from the *NetworkSynchronization* component are ignored when this attribute is set to a value other than ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sdh s1RxOverride

Access	Read and write
Description	This attribute specifies the S1 byte value reported by the port regardless of the received value. Changes in S1 byte on the port are ignored when this attribute is set to a value other than ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sdh lapsProtocol

Access	Read: Illegal Write: All
Description	This attribute stores the value of the *protocol* attribute provisioned under the *Laps* component. This hidden attribute is updated automatically via a check escape on *Laps* component.
Mib	LogicalProcessor
Values	Decimal (0..10) none
Default	none

ATTRIBUTE Lp Sdh sonetSdhOmType

Access	Read: Illegal Write: All
Description	This attribute stores the value of the *type* attribute provisioned under the

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OpticalModule component.This hidden attribute is updated automatically via the *OpticalModule* component check escape.

Mib LogicalProcessor

Values Decimal (1..256)
none

Default none

GROUP Lp Sdh CustomerIdentifierData (CidData)

Properties Provisioned

Description This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib LogicalProcessor

ATTRIBUTE Lp Sdh customerIdentifier (cid)

Access Read and write

Description This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib LogicalProcessor

Values Decimal (0; 1..8191)

Default 0

GROUP Lp Sdh AdminInfo (AdminInfo)

Properties Provisioned

Description

This group contains the attributes pertaining to the vendor of the equipment.

Mib LogicalProcessor

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ATTRIBUTE Lp Sdh vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sdh commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Sdh includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp Sdh IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

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Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp Sdh OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this

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group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — LogicalProcessor

ATTRIBUTE Lp Sdh adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — LogicalProcessor

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp Sdh operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — LogicalProcessor

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Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sdh availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

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The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — LogicalProcessor

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Lp Sdh proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sdh controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

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The value ***suspended*** indicates that the service has been administratively suspended.

Mib — LogicalProcessor

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp Sdh alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — LogicalProcessor

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

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ATTRIBUTE Lp Sdh standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sdh unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

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GROUP Lp Sdh Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for a *Sonet* or *Sdh* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh losAlarm (los)

Access	Read only
Description	This attribute indicates whether a Loss Of Signal (LOS) alarm state has been entered. An LOS alarm state is entered when LOS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds, or if an LOS defect is present when the criteria for LOF failure declaration have been met. An LOS defect is declared when 20+/-3 us of all-zeros pattern is detected. The LOS defect is cleared when two valid framing words are detected and no Loss of Signal condition is detected during an interval of 20+/-3 us. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The *Sonet/Sdh* component goes into an operational state of *disabled* until the LOS alarm condition is cleared. The LOS alarm state is cleared after LOS defects have been absent for a period of 10 seconds +/- 0.5 seconds. The *losAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sdh lofAlarm (lof)

Access	Read only
Description	This attribute displays whether a Loss Of Frame (LOF) alarm state has been entered. An LOF alarm state is entered when LOF defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds, except when an LOS defect or failure is present. An LOF defect is detected when getting contiguous errored frame alignment for at least 3 msec. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The *Sonet/Sdh* component goes into an operational state of *disabled* until the LOF alarm condition is cleared. The condition is cleared when framing

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has been achieved for a period of 10 seconds +/- 0.5 seconds.
The *lofAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default No default

ATTRIBUTE Lp Sdh rxAisAlarm (ais)

Access Read only

Description

This attribute displays whether a Line Alarm Indication Signal (L-AIS) alarm state has been entered. An L-AIS alarm state is entered when L-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The L-AIS defect is the occurrence of the L-AIS signal in five contiguous STS (STM) frames (111 pattern in bits 6,7, and 8 of the K2 bytes). If the L-AIS defects are intermittently occurring, the L-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the L-AIS alarm condition is cleared. The condition is cleared after not detecting the L-AIS signal for a period of 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default No default

ATTRIBUTE Lp Sdh rxRfiAlarm (rfi)

Access Read only

Description

This attribute displays whether a Line Remote Failure Indication (LRFI) alarm state has been entered. An L-RFI alarm state is entered when Line Remote Failure Indication (L-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The L-RDI defect is the occurrence of the L-RDI signal in five contiguous valid STS (STM) frame (110 pattern in bits 6,7, and 8 of the K2 bytes). If the L-RDI defects are intermittently occurring, the L-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the L-RFI alarm condition is cleared. The condition is cleared after not detecting the L-RDI signal for a period of 10 seconds +/- 0.5 seconds.

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The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values on
off

Default No default

ATTRIBUTE Lp Sdh txAis

Access Read only

Description

This attribute displays whether the Line Alarm Indication Signal (L-AIS) signal is being transmitted on the outgoing line. This signal is transmitted when the *Sonet/Sdh* is *locked* and left *offline*.

Mib LogicalProcessor

Values on
off

Default No default

ATTRIBUTE Lp Sdh txRdi

Access Read only

Description

This attribute displays whether the Line Remote Defect Indicator (L-RDI) signal is being transmitted over the OC-3 line. The L-RDI signal is transmitted upon the detection of the LOS, LOF or L-AIS defect. This attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values on
off

Default No default

ATTRIBUTE Lp Sdh unusableTxClockRefAlarm (utcr)

Access Read only

Description

This attribute displays whether an Unusable Transmit Clock Reference (UTCR) alarm state has been entered. A UTCR alarm state is entered when a Sonet/Sdh port provisioned to act as a transmit clock reference has received the code “do not use for synchronization” in the S1 byte (in the SONET/ SDH line overhead) for 2.5 +/- 0.5 seconds.
The condition is cleared after not detecting the “do not use for synchronization” code for a period of 10 +/- 0.5 seconds or when the port is no longer provisioned to act as a transmit clock reference.

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A port is acting as a transmit clock reference if it is provisioned with a) a *clockingSource* of *line*, or b) it has been provisioned as a primaryReference, secondaryReference or tertiaryReference in the NetworkSynchronization component.
The *unusableTxClockRefAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values on
off

Default No default

ATTRIBUTE Lp Sdh s1Rx (s1R)

Access Read only

Description
This attribute indicates the current S1 byte received on the port.

Mib LogicalProcessor

Values Decimal (0..15)

Default No default

ATTRIBUTE Lp Sdh s1Tx (s1T)

Access Read only

Description
This attribute indicates the current S1 byte transmitted on the port.

Mib LogicalProcessor

Values Decimal (0..15)

Default No default

GROUP Lp Sdh Statistics (Stats)

Properties Operational

Description
This group contains the statistics data for a *Sonet* or *Sdh* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp Sdh runningTime (time)

Access Read only

Description
This attribute indicates the total number of seconds since the *Sonet/Sdh*

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component has been activated and been in unlocked state. All the other error counts that follow can be updated when this count is active.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh errorFreeSec (efs)

Access Read only

Description

This attribute indicates the number of seconds that the *Sonet/Sdh* component has been in a near-end error free state.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh sectCodeViolations (scv)

Access Read only

Description

This attribute indicates the total number of Section Code Violations (SCVs) detected. A SCV corresponds to section BIP-8 error. SCV counting is inhibited for second intervals where a Section Severely Errored Second (SSES) is counted. The count wraps at its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh sectErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of Section Errored Seconds (SESs) that have been counted. A SES is declared for second intervals containing one or more SCVs or one or more Loss Of Signal (LOS) or Severely Errored Frame (SEF) defects. A SEF defect is the occurrence of 4 contiguous errored STS or STM frame alignment words.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

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ATTRIBUTE Lp Sdh sectSevErroredSec (sses)

Access	Read only
Description	This attribute indicates the total number of Section Severely Errored Seconds (SSESs) that have been counted. A SSES is declared for second intervals containing more than *X* SCVs or one or more LOS or SEF defects. The value of *X* is 16 for 155 Mbit/s interface.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh sectLosSec (sloss)

Access	Read only
Description	This attribute indicates the total number of Section LOS Seconds (SLOSSs) that have been counted. A SLOSS is declared for second intervals containing one or more LOS defects.
Mib	LogicalProcessor
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE Lp Sdh sectSevErroredFrmSec (ssefs)

Access	Read only
Description	This attribute indicates the total number of Section Severely Errored Frame Seconds (SSEFSs) that have been counted. A SSEFS is declared for second intervals containing one or more SEF defects.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh sectFailures (sf)

Access	Read only
Description	This attribute indicates the total number of times that a section failure (LOS or LOF failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Lp Sdh lineCodeViolations (lcv)

Access	Read only
Description	This attribute indicates the total number of Line Code Violations (LCVs) detected. A LCV corresponds to a line BIP-24 errors. LCV counting is inhibited for second intervals where a Line Severely Errored Second (LSES) is counted. Counting of LCVs is also inhibited over second intervals where a Line Unavailable Second (LUAS) is counted. The count wraps when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh lineErroredSec (les)

Access	Read only
Description	This attribute indicates the total number of Line Errored Seconds (LESs) that have been counted. A LES is declared for second intervals containing one or more LCVs or one or more line AIS defects. Counting of LES is inhibited over second intervals where a LUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh lineSevErroredSec (lses)

Access	Read only
Description	This attribute indicates the total number of Line Severely Errored Seconds (LSESs) that have been counted. A LSES is declared for second intervals containing more than ***X*** LCVs or one or more L-AIS defects. The value of ***X*** is 32 for 155 Mbits/sec interface. Counting of LSES is inhibited over second intervals where a LUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh lineAisSec (laiss)

Access	Read only

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Description	This attribute indicates the total number of Line AIS Seconds (LAISSs) that have been counted. A LAISS is declared for second intervals containing one or more L-AIS defects. Counting of LAISS is inhibited over second intervals where a LUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh lineUnavailSec (luas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the STS line is unavailable. The STS line becomes unavailable at the onset of 10 consecutive LSESs. The 10 LSESs are included in the unavailable time. Once unavailable, the STS line becomes available at the onset of 10 contiguous seconds with no LSES. The 10 seconds with no LSES are excluded from the unavailable time. For second intervals where a Line Unavailable Second (LUAS) is counted, counting of LCV, LES, LSES and LAISS is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh lineFailures (lf)

Access	Read only
Description	This attribute indicates the total number of times that a line failure (L-AIS failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineErrorFreeSec (felefs)

Access	Read only
Description	This attribute indicates the number of seconds that the *Sonet* or *Sdh* component has been in a far-end error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

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Units	seconds
Default	0

ATTRIBUTE Lp Sdh farEndLineCodeViolations (felcv)

Access	Read only
Description	This attribute indicates the total number of line FEBE detected from the incoming line. The counting of line FEBE is inhibited for second intervals where a Far-End Line Severely Errored Second (FELSES) is counted. Counting of FELCVs is also inhibited over second intervals where a Far-End Line Unavailable Second (FELUAS) is counted. The count wraps at its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineErroredSec (feles)

Access	Read only
Description	This attribute indicates the total number of Far-End Line Errored Seconds (FELESs) that have been counted. A FELES is declared for second intervals containing one or more Far-End Line CVs (FELCVs) or one or more L-RDI defects. Counting of FELES is inhibited over second intervals where a FELUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineSevErroredSec (felses)

Access	Read only
Description	This attribute indicates the total number of Far-End Line Severely Errored Seconds (FELSESs) that have been counted. A FELSES is declared for second intervals containing more than ***X*** FELCVs or one or more L-RDI defects. The value of ***X*** is 32 for 155 Mbit/s interface. Counting of FELSES is inhibited over second intervals where a FELUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp Sdh farEndLineAisSec (felaiss)

Access	Read only
Description	This attribute indicates the total number of Far-End Line AIS Seconds (FELAISSs) that have been counted. A FELAISS is declared for second intervals one or more L-RDI defects. Counting of FELAISS is inhibited over second intervals where a FELUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineUnavailSec (feluas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the STS far-end line is unavailable. The STS far-end line becomes unavailable at the onset of 10 consecutive FELSESs. The 10 FELSESs are included in the unavailable time. Once unavailable, the STS far-end line becomes available at the onset of 10 contiguous seconds with no FELSES. The 10 seconds with no FELSES are excluded from the unavailable time. For second intervals where a Far-End Line Unavailable Second (FELUAS) is counted, counting of FELCV, FELES, FELSES and FELAISS is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineFailures (felf)

Access	Read only
Description	This attribute indicates the total number of times that a far-end line failure (L-RFI failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sdh Path

Instance	Decimal (0..0)
Groups	GROUP Lp Sdh Path Provisioned (Prov) GROUP Lp Sdh Path CustomerIdentifierData (CidData)

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GROUP Lp Sdh Path OsiState (State)
GROUP Lp Sdh Path IfEntryProv (IfEntry)
GROUP Lp Sdh Path OperationalStatus (OperStatus)
GROUP Lp Sdh Path Operational (Oper)
GROUP Lp Sdh Path Statistics (Stats)

Scope: Device

Description:

Lp/n Sonet/n Path/0
Lp/n Sdh/n Path/0

This component controls a path signal that is carried within a SONET or SDH signal. The *Path* component can only be added under a *Sonet* or *Sdh* component on a Nortel Networks Multiservice Switch 7400.

The *Path* component exists only on the Nortel Networks Multiservice Switch 7400.

The equivalent components on the Nortel Networks Multiservice Switch 15000 and 20000 are the *Sts* component under a *Sonet* component and the *Vc4* component under an *Sdh* component.

On the Nortel Networks Multiservice Switch 15000 and 20000 a *Path* component is not allowed under a *Sonet* or *Sdh* component.

Mib: LogicalProcessor

Subcomponents: COMPONENT Lp Sdh Path AtmCell (Cell)

Common Verbs:

Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Sdh Path Provisioned (Prov)

Properties: Provisioned

Description:

This group contains all of the provisioning data for the component.

Mib: LogicalProcessor

ATTRIBUTE Lp Sdh Path applicationFramerName (framer)

Access: Read only

Description:

This attribute defines which application is running on the path.

Mib: LogicalProcessor

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Values	Link
Default	No default

GROUP Lp Sdh Path CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sdh Path OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sdh Path **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Path **usageState (osiUsage)**

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sdh Path availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sdh Path proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — LogicalProcessor

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp Sdh Path **controlStatus (osiCntrl)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sdh Path alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sdh Path standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sdh Path **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp Sdh Path **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

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ATTRIBUTE Lp Sdh Path ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Path ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Path OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

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GROUP Lp Sdh Path Operational (Oper)

Properties: Operational

Description:

This group contains the common operational data for the component.

Mib: LogicalProcessor

ATTRIBUTE Lp Sdh Path lopAlarm (lop)

Access: Read only

Description:

This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp Sdh Path rxAisAlarm (ais)

Access: Read only

Description:

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect

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has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — LogicalProcessor

Values — on
off

Default — No default

ATTRIBUTE Lp Sdh Path rxRfiAlarm (rfi)

Access — Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — LogicalProcessor

Values — on
off

Default — No default

ATTRIBUTE Lp Sdh Path signalLabelMismatch (slm)

Access — Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.

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The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — LogicalProcessor

Values — on
off

Default — No default

ATTRIBUTE Lp Sdh Path txAis

Access — Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — LogicalProcessor

Values — on
off

Default — No default

ATTRIBUTE Lp Sdh Path txRdi

Access — Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the

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component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib LogicalProcessor

Values on
off

Default No default

GROUP Lp Sdh Path Statistics (Stats)

Properties Operational

Description
This group contains the statistics data for the component.

Mib LogicalProcessor

ATTRIBUTE Lp Sdh Path pathErrorFreeSec (pefs)

Access Read only

Description
This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathCodeViolations (pcv)

Access Read only

Description
This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathErroredSec (pes)

Access Read only

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Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathSevErroredSec (pses)

Access Read only

Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathAisLopSec (pals)

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM

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path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathFailures (pf)

Access Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathErrorFreeSec (fepefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathCodeViolations (fepcv)

Access Read only

Description

This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over

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second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is

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declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathFailures (fepf)

Access Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sdh Path AtmCell (Cell)

Groups GROUP Lp Sdh Path Cell Provisioned (Prov)
GROUP Lp Sdh Path Cell Operational (Oper)
GROUP Lp Sdh Path Cell Statistics (Stats)

Scope Device

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Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib LogicalProcessor

Common Verbs
Help
List
Display

GROUP Lp Sdh Path Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp Sdh Path Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib LogicalProcessor

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp Sdh Path Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether

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or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib LogicalProcessor

Values
off
on

Default No default

ATTRIBUTE Lp Sdh Path Cell **correctSingleBitHeaderErrors**

Access Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib LogicalProcessor

Values
off
on

Default off

ATTRIBUTE Lp Sdh Path Cell **clearDelay (clear)**

Access Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (0..60)

Units minutes

Default 0

ATTRIBUTE Lp Sdh Path Cell **hecSampleInterval (hSample)**

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Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp Sdh Path Cell **hecErrorLimit (hLimit)**

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp Sdh Path Cell **lcdStateDelay (delay)**

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell

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Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib — LogicalProcessor

Values — Decimal (1..50)

Units — msec

Default — No default

ATTRIBUTE Lp Sdh Path Cell hecErrorIntervalLimit (hIntLimit)

Access — Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib — LogicalProcessor

Values — Decimal (1..25)

Default — 1

GROUP Lp Sdh Path Cell Operational (Oper)

Properties — Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib — LogicalProcessor

ATTRIBUTE Lp Sdh Path Cell lcdAlarm (lcd)

Access — Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure

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alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib — LogicalProcessor

Values — on
off

Default — off

GROUP Lp Sdh Path Cell Statistics (Stats)

Properties — Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib — LogicalProcessor

ATTRIBUTE Lp Sdh Path Cell uncorrectableHeaderErrors (ucErr)

Access — Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

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Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path Cell **sevErroredSec (ses)**

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path Cell **receiveCellUtilization (rxutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp Sdh Path Cell **transmitCellUtilization (txutil)**

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Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp Sdh Path Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sdh Test (Test)

Groups	GROUP Lp Sdh Test OsiState (State) GROUP Lp Sdh Test Setup (Setup) GROUP Lp Sdh Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

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VERB START Lp Sdh Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sdh Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Sdh Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

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Default	unlocked

ATTRIBUTE Lp Sdh Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp Sdh Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Test purpose (purpose)

Access	Read and write

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Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib LogicalProcessor

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp Sdh Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib LogicalProcessor

Values
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop

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lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp Sdh Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp Sdh Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Lp Sdh Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

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Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sdh Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Sdh Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Sdh Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes

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Default	1.00

GROUP Lp Sdh Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima*

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component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Sdh Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

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Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame.

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For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Sdh Test bitErrorRate

Access Read only

Description

This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib LogicalProcessor

Values String (5, ASCII)

Default No default

ATTRIBUTE Lp Sdh Test elapsedTime

Access Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

ATTRIBUTE Lp Sdh Test timeRemaining

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Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sdh Vc4

Instance	Decimal (0..3)
Groups	GROUP Lp Sdh Vc4 Provisioned (Prov) GROUP Lp Sdh Vc4 CustomerIdentifierData (CidData) GROUP Lp Sdh Vc4 OsiState (State) GROUP Lp Sdh Vc4 IfEntryProv (IfEntry) GROUP Lp Sdh Vc4 OperationalStatus (OperStatus) GROUP Lp Sdh Vc4 Operational (Oper) GROUP Lp Sdh Vc4 Statistics (Stats)
Scope	Device
Description	*Lp/n Sdh/n Vc4/n* *Laps/n Vc4/n* This component controls a VC4 path signal that is carried within an SDH signal. The instance number of the *Vc4* component is 0. The *Vc4* component may only be defined on Nortel Networks Multiservice Switch FPs that support STM.
Mib	SonetSdh
Opt. Subcomp.	COMPONENT Lp Sdh Vc4 AtmCell (Cell) COMPONENT Lp Sdh Vc4 Vc12
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sdh Vc4 Provisioned (Prov)

Properties	Provisioned

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Description

This group contains all of the provisioning data for the component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 applicationFramerName (framer)

Access Read and write

Description

This attribute defines which application is running on the path.

Mib SonetSdh

Values Link

Default No default

ATTRIBUTE Lp Sdh Vc4 pathTraceLength

Access Read and write

Description

This attribute specifies the transmitted path trace message length. The *pathTraceLength* attribute at transmitting and receiving end must match.

Mib SonetSdh

Values 16
64

Default 16

ATTRIBUTE Lp Sdh Vc4 txPathTrace

Access Read and write

Description This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. If *pathTraceLength* is 16, the path identifier is prefixed with a CRC byte and padded by null characters if necessary to form a 16-octet path trace message transmitted in byte J1 of 16 outgoing SDH frames. If *pathTraceLength* is 64, the path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SDH frames. At the remote end, the path trace is reassembled, the CRC is checked if necessary and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued.

Usage guidelines for path trace message are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format.

The functionality supported by this attribute is not available.

Mib SonetSdh

Values String (0..64, Extended ASCII)

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Default	""

ATTRIBUTE Lp Sdh Vc4 expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	SonetSdh
Values	String (0..64, Extended ASCII)
Default	""

ATTRIBUTE Lp Sdh Vc4 concatNumber

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of contiguous Administration Unit 4 (AU-4) concatenated together. AU-4s can be concatenated together to form an AU-4-4c or AU-4-16c (4 or 16 concatenated AU-4s) which can transport payloads requiring greater capacity than one Container-4 capacity. Only *Vc4/0* can have *concatNumber* set to 16 and only *Vc4/0*, *Vc4/4*, *Vc4/8* or *Vc4/12* can have *concatNumber* set to 4. When a *Vc4* uses concatenation, the other concatenated *Vc4* instance number cannot be used. For example, if *Vc4/0 concatNumber* is 4, the next provisionable *Vc4* is *Vc4/4*. *Vc4* channelization, indicated by provisioning subcomponents such as *Vc12*, is allowed only if this attribute is set to 1. This value must be set to 0 for card types which do not support the use of this attribute.
Mib	SonetSdh
Values	0 1 4 16
Default	No default

GROUP Lp Sdh Vc4 CustomerIdentifierData (CidData)

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sdh Vc4 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Sdh Vc4 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sdh Vc4 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sdh Vc4 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually,

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the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sdh Vc4 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sdh Vc4 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	SonetSdh
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sdh Vc4 alarmStatus (osiAlarm)

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Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sdh Vc4 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same

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	information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sdh Vc4 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	SonetSdh
Values	false true
Default	false

GROUP Lp Sdh Vc4 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh

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Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Vc4 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Vc4 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sdh Vc4 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 lopAlarm (lop)

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Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds. The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	SonetSdh
Values	on off
Default	No default

ATTRIBUTE Lp Sdh Vc4 **rxAisAlarm (ais)**

Access	Read only
Description	This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds. The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.
Mib	SonetSdh
Values	on off

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Default No default

ATTRIBUTE Lp Sdh Vc4 rxRfiAlarm (rfi)

Access Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 signalLabelMismatch (slm)

Access Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect

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accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — SonetSdh

Values — on
off

Default — No default

ATTRIBUTE Lp Sdh Vc4 txAis

Access — Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — SonetSdh

Values — on
off

Default — No default

ATTRIBUTE Lp Sdh Vc4 txRdi

Access — Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — SonetSdh

Values — on
off

Default — No default

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GROUP Lp Sdh Vc4 Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathUnavailSec (puas)

Access	Read only
Description	This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.

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Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathErrorFreeSec (fepefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp Sdh Vc4 farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathAisLopSec (fepals)

Access	Read only
Description	This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathUnavailSec (fepuas)

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Access	Read only
Description	This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sdh Vc4 AtmCell (Cell)

Groups	GROUP Lp Sdh Vc4 Cell Provisioned (Prov) GROUP Lp Sdh Vc4 Cell Operational (Oper) GROUP Lp Sdh Vc4 Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM

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cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib SonetSdh

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp Sdh Vc4 Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib SonetSdh

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp Sdh Vc4 Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

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Mib	SonetSdh
Values	off on
Default	No default

ATTRIBUTE Lp Sdh Vc4 Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	SonetSdh
Values	off on
Default	off

ATTRIBUTE Lp Sdh Vc4 Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp Sdh Vc4 Cell hecSampleInterval (hSample)

Access	Read and write

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Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Lp Sdh Vc4 Cell **hecErrorLimit (hLimit)**

Access: Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Lp Sdh Vc4 Cell **lcdStateDelay (delay)**

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The

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valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	SonetSdh
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp Sdh Vc4 Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	SonetSdh
Values	Decimal (1..25)
Default	1

GROUP Lp Sdh Vc4 Cell Operational (Oper)

Properties	Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Cell lcdAlarm (lcd)

Access	Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects

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have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib — SonetSdh

Values — on
off

Default — off

GROUP Lp Sdh Vc4 Cell Statistics (Stats)

Properties — Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib — SonetSdh

ATTRIBUTE Lp Sdh Vc4 Cell uncorrectableHeaderErrors (ucErr)

Access — Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib — SonetSdh

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Cell **sevErroredSec (ses)**

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Cell **receiveCellUtilization (rxutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	SonetSdh
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp Sdh Vc4 Cell **transmitCellUtilization (txutil)**

Access	Read only

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Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: SonetSdh

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Lp Sdh Vc4 Cell correctableHeaderErrors (cErr)

Access: Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp Sdh Vc4 Vc12

Instance:
k [Decimal (1..3)]
l [Decimal (1..7)]
m [Decimal (1..3)]

Groups:
GROUP Lp Sdh Vc4 Vc12 Provisioned (Prov)
GROUP Lp Sdh Vc4 Vc12 CustomerIdentifierData (CidData)
GROUP Lp Sdh Vc4 Vc12 OsiState (State)
GROUP Lp Sdh Vc4 Vc12 IfEntryProv (IfEntry)
GROUP Lp Sdh Vc4 Vc12 OperationalStatus (OperStatus)
GROUP Lp Sdh Vc4 Vc12 Operational (Oper)
GROUP Lp Sdh Vc4 Vc12 Statistics (Stats)

Scope: Device

Description

Lp/n Sdh/n Vc4/n Vc12/k,l,m
Laps/n Vc4/n Vc12/k,l,m
This component controls the VC12 low order path signal that is carried within an SDH signal.

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The *Vc12* component may only be provisioned on Nortel Networks Multiservice Switch FPs that support STM and channelization.

Mib: SonetSdh

Opt. Subcomp.: COMPONENT Lp Sdh Vc4 Vc12 E1

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Sdh Vc4 Vc12 Provisioned (Prov)

Properties: Provisioned

Description:
This group contains all of the provisioning data for the component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 txPathTrace

Access: Read and write

Description:
This attribute specifies the low order path identifier. The string must be constructed with 7-bit characters only. The path identifier is prefixed with a CRC byte and padded by null characters if necessary to form a 16-octet path trace message transmitted in byte J2 of 16 outgoing SDH frames. At the remote end, the path trace is reassembled, the CRC is checked and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected and the *expectedRxPathTrace* attribute is not an empty string (default value), an alarm is issued.

Usage guidelines for path trace message are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format.

The functionality supported by this attribute is available on the *4pOC3Ch* functional processor.

Mib: SonetSdh

Values: String (0..15, Extended ASCII)

Default: ""

ATTRIBUTE Lp Sdh Vc4 Vc12 expectedRxPathTrace

Access: Read and write

Description:
This attribute specifies the expected path trace identifier which is used to identify the low order path. This attribute must match the corresponding

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txPathTrace provisioned at the transmitting equipment end. If it does not, an alarm is issued. If an empty string (default value) is provisioned, the Low Order Path Trace Identification Mismatch (LP-TIM) defect is ignored.

The functionality supported by this attribute is available on the *4pOC3Ch* functional processor.

Mib	SonetSdh
Values	String (0..15, Extended ASCII)
Default	""

GROUP Lp Sdh Vc4 Vc12 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sdh Vc4 Vc12 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations

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described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib SonetSdh

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib SonetSdh

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Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sdh Vc4 Vc12 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

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The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — SonetSdh

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Lp Sdh Vc4 Vc12 proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — SonetSdh

Set of
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp Sdh Vc4 Vc12 **controlStatus (osiCntrl)**

Access — Read only

Description

If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

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The value ***suspended*** indicates that the service has been administratively suspended.

Mib — SonetSdh

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp Sdh Vc4 Vc12 alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — SonetSdh

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp Sdh Vc4 Vc12 standbyStatus (osiStby)

Access — Read only

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Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sdh Vc4 Vc12 **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	SonetSdh
Values	false true
Default	false

GROUP Lp Sdh Vc4 Vc12 **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.

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Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Vc4 Vc12 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Vc4 Vc12 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

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GROUP Lp Sdh Vc4 Vc12 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 rxAisAlarm

Access	Read only
Description	This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	SonetSdh
Values	on off
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 rxRdiAlarm

Access	Read only
Description	This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	SonetSdh
Values	on off
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 rxRfiAlarm

Access	Read only
Description	This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a

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RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 rxReiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Error Indicator (LP-REI) alarm state has been entered. An LP-REI alarm state is entered when LP-REI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-REI defect occurs when a REI condition is detected. This alarm is cleared after no LP-REI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 bip2Alarm

Access Read only

Description

This attribute indicates whether a Low Order Path Error Monitoring (BIP-2) alarm state has been entered. An BIP-2 alarm state is entered when BIP-2 defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The BIP-2 defect occurs when a mismatch between the calculated and received BIP-2 is detected. This alarm is cleared after no BIP-2 defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 unequippedAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an

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unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 traceIdMismatchAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 lopAlarm

Access Read only

Description

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 txAis

Access Read only

Description

This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS

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signal is transmitted when the component *adminState* is ***locked*** or *operationalState* is ***disabled*** and *availabilityStatus* is *dependency*.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 txRdi

Access Read only

Description

This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is ***off*** when the component *adminState* is ***locked*** or *operationalState* is ***disabled*** and *availabilityStatus* is ***dependency***.

Mib SonetSdh

Values on
off

Default No default

GROUP Lp Sdh Vc4 Vc12 Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathCodeViolations (pcv)

Access Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each

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PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathErroredSec (pes)

Access Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathSevErroredSec (pses)

Access Read only

Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathAisLopSec (pals)

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP

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defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathFailures (pf)

Access Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathErrorFreeSec (fepefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

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The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathCodeViolations (fepcv)

Access Read only

Description

This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is

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inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathFailures (fepf)

Access Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

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The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sdh Vc4 Vc12 E1

Groups
GROUP Lp Sdh Vc4 Vc12 E1 Provisioned (Prov)
GROUP Lp Sdh Vc4 Vc12 E1 CustomerIdentifierData (CidData)
GROUP Lp Sdh Vc4 Vc12 E1 AdminInfo (AdminInfo)
GROUP Lp Sdh Vc4 Vc12 E1 IfEntryProv (IfEntry)
GROUP Lp Sdh Vc4 Vc12 E1 OperationalStatus (OperStatus)
GROUP Lp Sdh Vc4 Vc12 E1 OsiState (State)
GROUP Lp Sdh Vc4 Vc12 E1 Operational (Oper)
GROUP Lp Sdh Vc4 Vc12 E1 E1Operational (E1Oper)
GROUP Lp Sdh Vc4 Vc12 E1 Statistics (Stats)

Scope Device

Description
Lp/n E1/n
Lp/n Sdh/i Vc4/j Vc12/k,l,m E1
The *E1* component controls and monitors an E1 port or tributary on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pE1Aal1: 4 port. The lowest instance value is usually ***0***, except for the ***32pE1Aal*** card when it is ***1***.
No instance value is used when the E1 is a STM tributary.
Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (An E1 “ATM UNI port” is an *E1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.)
The instance number of an *E1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.

Mib SonetSdh

Subcomponents COMPONENT Lp Sdh Vc4 Vc12 E1 Channel (Chan)

Dyn. Subcomp.
COMPONENT Lp Sdh Vc4 Vc12 E1 Test (Test)
COMPONENT Lp Sdh Vc4 Vc12 E1 Dsp
COMPONENT Lp Sdh Vc4 Vc12 E1 Audio

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

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GROUP Lp Sdh Vc4 Vc12 E1 **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains all of the provisioning data for an E1 component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **lineType (lineType)**

Access	Read and write
Description	This attribute specifies the framing of the E1 line. When ***cas*** (channel associated signalling) is selected, timeslot 16 is reserved for multiframe signalling and only 30 timeslots are available for data. The signalling bits are not interpreted. When ***ccs*** (common channel signalling) is selected, timeslot 16 is not reserved for multiframe signalling and 31 timeslots are available for data. The signalling bits are not interpreted. When ***unframed*** is selected, a clear channel is defined whereby data from all timeslots including the framing data (in timeslot 0) and timeslot 16 are passed transparently. This value is valid only for AAL1 cards. For cell-based cards the ATM Forum specifies that timeslot 16 be reserved, leaving 30 timeslots available for data. The ***8pE1Atm*** and ***1pStm1ChSmIr*** cards support the ***ccs*** value only. The ***4pOC3ChSmIr*** card only supports the ***ccs*** and ***unframed*** values. For both these cards, the default value is ***ccs***. For all other cards, the default value is ***cas***.
Mib	SonetSdh
Values	ccs cas unframed
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **clockingSource (clockingSource)**

Access	Read and write
Description	This attribute defines the source of the transmit clock for the E1 line. When ***local*** is selected, the crystal on the port generates the clocking for the line. When ***line*** is selected, the port synchronizes to the clock from the facility. When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP. When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***.

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When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network.

When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network.

A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured***

If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pE1Atm*** card, which it defaults to ***local***.
On a ***3pE1Atm*** card all ports must have the same value, and be either ***local*** or ***module***.

otherPort is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards.

On ***4E1Aal1*** cards either:

all four ports' *clockingSource* values must be ***local*** OR
all four ports' *clockingSource* values must be ***module*** OR
one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. The ***srtsMode*** clocking source is not supported for this card type.

Mib: SonetSdh

Values:
local
line
module
otherPort
srtsMode
adaptiveMode

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **crc4Mode**

Access: Read and write

Description

This attribute defines whether the CRC-4 checking and generation on the E1 line is enabled or disabled.

The default CRC-4 mode is ***off*** except for the cell-based cards which default to ***on*** as per the ATM Forum.

Mib: SonetSdh

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Values	on off
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **sendRaiOnAis**

Access	Read and write
Description	This attribute defines whether the Remote Alarm Indicator (RAI) will be sent when receiving an AIS alarm. The value is ***yes*** by default; it can be changed to ***no*** only for ports on J2MV cards.
Mib	SonetSdh
Values	no yes
Default	yes

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **raiDeclareAlarmTime**

Access	Read and write
Description	This attribute specifies the period of time that a Remote Alarm Indicator (RAI) must be present before declaring an RAI alarm. The value of ***auto*** sets the RAI declare time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiClearAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.
Mib	SonetSdh
Values	Decimal (1..20000) auto
Units	msec
Default	100

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **raiClearAlarmTime**

Access	Read and write
Description	This attribute specifies the period of time that a Remote Alarm Indicator (RAI) has been absent before clearing an RAI alarm. The value of ***auto*** sets the RAI clear time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiDeclareAlarmTime* attribute is ignored and ***auto*** is used. This attribute is

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for E1 and E1C card types only. For all other card types, the default value must be used.

Mib SonetSdh

Values Decimal (1..20000)
auto

Units msec

Default 100

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **ssmE1SaNumber**

Access Read and write

Description

This attribute specifies which of the five available Sa bits (Sa4 to Sa8) recommended in ITU G.704 is to be used for Synchronization Status Messages (SSM). If set to ***none***, the transmission of SSM is disabled on this port.

Mib SonetSdh

Values Decimal (4..8)
none

Default none

GROUP Lp Sdh Vc4 Vc12 E1 **CustomerIdentifierData (CidData)**

Properties Provisioned

Description This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **customerIdentifier (cid)**

Access Read and write

Description This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component.

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Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib SonetSdh

Values Decimal (0; 1..8191)

Default 0

GROUP Lp Sdh Vc4 Vc12 E1 AdminInfo (AdminInfo)

Properties Provisioned

Description

This group contains the attributes pertaining to the vendor of the equipment.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 vendor

Access Read and write

Description

This is the name of the vendor supplying the facility.

Mib SonetSdh

Values String (0..20, ASCII)

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 commentText

Access Read and write

Description

Any miscellaneous text about the facility.

Mib SonetSdh

Values String (0..60, ASCII)

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 includeAdminInfoInAlarm

Access Read and write

Description

This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.

Mib SonetSdh

Values no
yes

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Default	no

GROUP Lp Sdh Vc4 Vc12 E1 **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Vc4 Vc12 E1 **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

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Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sdh Vc4 Vc12 E1 **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **operationalState (osiOper)**

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **controlStatus (osiCntrl)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	SonetSdh
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — SonetSdh

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **standbyStatus (osiStby)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	SonetSdh
Values	false true
Default	false

GROUP Lp Sdh Vc4 Vc12 E1 **Operational (Oper)**

Properties	Operational
Description	This group contains the common operational data for a component in a digital hierarchy interface.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **losAlarm (losAlarm)**

Access	Read only
Description	This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOS alarm state.

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The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **rxAisAlarm (rxAisAlarm)**

Access Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms £ T £ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **lofAlarm (lofAlarm)**

Access Read only

Description

This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state

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The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 rxRaiAlarm (rxRaiAlarm)

Access Read only

Description

This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time).
The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 txAisAlarm (txAisAlarm)

Access Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 txRaiAlarm (txRaiAlarm)

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Access Read only

Description

This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).

Mib SonetSdh

Values
on
off

Default off

GROUP Lp Sdh Vc4 Vc12 E1 **E1Operational (E1Oper)**

Properties Operational

Description

This group contains all of the operational data for a E1 component that are not defined in the DSCommonOp group.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **multifrmLofAlarm (multiLofAlarm)**

Access Read only

Description

This attribute indicates whether a multiframe LOF (loss of frame) alarm state is entered. A multiframe LOF alarm state is entered when a multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe LOF defects are intermittently occurring, the multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds. When the multiframe LOF alarm is on, a multiframe RAI alarm indicator is transmitted on the line.

The ***8pE1Atm*** card does not support the multiframe LOF alarm.

Mib SonetSdh

Values
on
off

Default off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **rxMultifrmRaiAlarm (rxMultiRaiAlarm)**

Access Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator)

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alarm state has been entered. A multiframe RAI alarm state is entered when a multiframe RAI alarm indicator (bit 6 of timeslot 16 in frame 0 is set to a one) is observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe RAI indicator is intermittently received, the multiframe RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The multiframe RAI alarm condition is cleared when the multiframe RAI alarm indication is not received for 10 seconds +/- 0.5 seconds. The multiframe RAI alarm is usually an indication that the far end facility is unable to gain multiframe synchronization.

The ***8pE1Atm*** card does not support the multiframe RAI alarm.

Mib — SonetSdh

Values — on
off

Default — off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **txMultifrmRaiAlarm (txMultiRaiAlarm)**

Access — Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm is being sent on the E1 line. This is transmitted when the E1 port detects a multiframe LOF condition.

The ***8pE1Atm*** card does not generate the multiframe RAI alarm.

Mib — SonetSdh

Values — on
off

Default — off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **ssmE1Tx**

Access — Read only

Description

This attribute indicates the current Synchronization Status Message (SSM) transmitted on the E1 port within the Sa byte defined in ITU G.704.
This attribute is filtered when *ssmE1SaNumber* is set to ***none***.

Mib — SonetSdh

Values — Decimal (0..15)

Default — No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **multifrmCRC4LofAlarm (multiCRC4LofAlarm)**

Access — Read only

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Description

This attribute indicates whether E1 CRC-4 multiframe LOF (loss of frame) alarm state is entered. A CRC-4 multiframe LOF alarm state is entered when a CRC-4 multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the CRC-4 multiframe LOF defects are intermittently occurring, the CRC-4 multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds.
The *multifrmCRC4LofAlarm* is not implemented for the ***E1***, ***1pE1V***, ***1pE1Mvp***, ***1pE1Mvpe***, ***4pE1Mvpe***, ***8pE1Atm***, ***E1C*** and ***4pE1Aal1*** cards.

Mib: SonetSdh

Values: on
off

Default: off

GROUP Lp Sdh Vc4 Vc12 E1 **Statistics (Stats)**

Properties: Operational

Description

This group contains the common statistical data for a component in a digital hierarchy interface.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **runningTime (runningTime)**

Access: Read only

Description

The number of seconds since the port component was activated.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **errorFreeSec (efs)**

Access: Read only

Description

The number of seconds that the port has been in an error free state.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **erroredSec (es)**

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Access	Read only
Description	An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **sevErroredSec (ses)**

Access	Read only
Description	A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **sevErroredFrmSec (sefs)**

Access	Read only
Description	A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **unavailSec**

Access	Read only
Description	The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **bpvErrors (bpvErrors)**

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Access	Read only
Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **crcErrors (crcErrors)**

Access	Read only
Description	If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **frmErrors (frmErrors)**

Access	Read only
Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **losStateChanges (losChanges)**

Access	Read only
Description	The total number of times that the line lost signal.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 **slipErrors (slipErrors)**

Access	Read only

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Description

The total number of times that the line experienced a controlled frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sdh Vc4 Vc12 E1 Channel (Chan)

Instance Decimal (0..31)

Groups
GROUP Lp Sdh Vc4 Vc12 E1 Chan Provisioned (Prov)
GROUP Lp Sdh Vc4 Vc12 E1 Chan CustomerIdentifierData (CidData)
GROUP Lp Sdh Vc4 Vc12 E1 Chan IfEntryProv (IfEntry)
GROUP Lp Sdh Vc4 Vc12 E1 Chan OperationalStatus (OperStatus)
GROUP Lp Sdh Vc4 Vc12 E1 Chan OsiState (State)
GROUP Lp Sdh Vc4 Vc12 E1 Chan Operational (Oper)
GROUP Lp Sdh Vc4 Vc12 E1 Chan AdminInfo (AdminInfo)

Scope Application

Description

Channel
The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port.
Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots.

Mib SonetSdh

Opt. Subcomp.
COMPONENT Lp Sdh Vc4 Vc12 E1 Chan AtmCell (Cell)
COMPONENT Lp Sdh Vc4 Vc12 E1 Chan TrunkConditioning (Tc)
COMPONENT Lp Sdh Vc4 Vc12 E1 Chan FrameLinkMonitoring (Flm)

Dyn. Subcomp. COMPONENT Lp Sdh Vc4 Vc12 E1 Chan Test (Test)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Sdh Vc4 Vc12 E1 Chan Provisioned (Prov)

Properties Provisioned

Description

This group contains all of the provisional data for a *Channel* component.

Mib SonetSdh

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ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **timeslots (ts)**

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.
Mib	SonetSdh
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **timeslotDataRate (dataRate)**

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Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s. When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s. On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***. One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.
Mib	SonetSdh
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **applicationFramerName**

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	SonetSdh
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Sdh Vc4 Vc12 E1 Chan **CustomerIdentifierData (CidData)**

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **customerIdentifier (cid)**

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sdh Vc4 Vc12 E1 Chan **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **ifIndex (ifI)**

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Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Vc4 Vc12 E1 Chan **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sdh Vc4 Vc12 E1 Chan **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — SonetSdh

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **operationalState (osiOper)**

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — SonetSdh

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **availabilityStatus (osiAvail)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions,

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the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — SonetSdh

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **proceduralStatus (osiProc)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: SonetSdh

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **controlStatus (osiCntrl)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: SonetSdh

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

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Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

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The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: SonetSdh

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: SonetSdh

Values:
false
true

Default: false

GROUP Lp Sdh Vc4 Vc12 E1 Chan Operational (Oper)

Properties: Operational

Description: This group contains all of the operational data for a *Channel* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan actualChannelSpeed

Access: Read only

Description: This attribute displays the measured link speed of the *Channel* component.

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Mib	SonetSdh
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Lp Sdh Vc4 Vc12 E1 Chan **AdminInfo (AdminInfo)**

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **vendor**

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	SonetSdh
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **commentText**

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	SonetSdh
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan **includeAdminInfoInAlarm**

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	SonetSdh
Values	no yes
Default	no

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COMPONENT Lp Sdh Vc4 Vc12 E1 Chan **Test (Test)**

Groups	GROUP Lp Sdh Vc4 Vc12 E1 Chan Test OsiState (State) GROUP Lp Sdh Vc4 Vc12 E1 Chan Test Setup (Setup) GROUP Lp Sdh Vc4 Vc12 E1 Chan Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	SonetSdh
Common Verbs	Help List Display

VERB START Lp Sdh Vc4 Vc12 E1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sdh Vc4 Vc12 E1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Sdh Vc4 Vc12 E1 Chan Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — SonetSdh

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **operationalState (osiOper)**

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — SonetSdh

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — SonetSdh

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Values	idle active (activ) busy
Default	idle

GROUP Lp Sdh Vc4 Vc12 E1 Chan Test **Setup (Setup)**

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **purpose (purpose)**

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	SonetSdh
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte

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inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: SonetSdh

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **frmSize (size)**

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: SonetSdh

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **frmPatternType (fpt)**

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: SonetSdh

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Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	SonetSdh
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	SonetSdh
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	SonetSdh
Values	Decimal (0..30240)
Units	minutes

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Default	5

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Sdh Vc4 Vc12 E1 Chan Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been

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looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: SonetSdh

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **bitsTx**

Access: Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: SonetSdh

Values: Long Integer

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **bytesTx**

Access: Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib: SonetSdh

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Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **frmTx**

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **bitsRx**

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **bytesRx**

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **frmRx**

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh

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Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	SonetSdh
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an

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externalLoop test. For a data test, it indicates time since test data was first transmitted.

Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test **timeRemaining**

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sdh Vc4 Vc12 E1 Chan **AtmCell (Cell)**

Groups	GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Provisioned (Prov) GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Operational (Oper) GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	SonetSdh
Common Verbs	Help List Display Add DELete

GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.

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Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **alarmActDelay (act)**

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	SonetSdh
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **scrambleCellPayload (scramble)**

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	SonetSdh
Values	off on
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **correctSingleBitHeaderErrors**

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

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Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: SonetSdh

Values: off
on

Default: off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **clearDelay (clear)**

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **hecSampleInterval (hSample)**

Access: Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (0..25)

Units: seconds

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Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **hecErrorLimit (hLimit)**

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **lcdStateDelay (delay)**

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **hecErrorIntervalLimit (hIntLimit)**

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before

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an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib SonetSdh

Values Decimal (1..25)

Default 1

GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell **Operational (Oper)**

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **lcdAlarm (lcd)**

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when

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the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib SonetSdh

Values on
off

Default off

GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

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Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **receiveCellUtilization (rxutil)**

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib SonetSdh

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **transmitCellUtilization (txutil)**

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib SonetSdh

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell **correctableHeaderErrors (cErr)**

Access Read only

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Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sdh Vc4 Vc12 E1 Chan TrunkConditioning (Tc)

Groups GROUP Lp Sdh Vc4 Vc12 E1 Chan Tc Provisioned (Prov)
GROUP Lp Sdh Vc4 Vc12 E1 Chan Tc Operational (Op)

Scope Device

Description

Lp/n Ds1/n Chan/n Tc
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:

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bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib	SonetSdh
Common Verbs	Help List Display Add DELete

GROUP Lp Sdh Vc4 Vc12 E1 Chan Tc **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc **replacementData (data)**

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions. The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values: DS1 MUX Out Of Service Code = 0x1A E1 MUX Out Of Service Code = 0xFF On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***. On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.
Mib	SonetSdh
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc **signalOneDuration (duration)**

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses

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CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits.

If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions.

The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.

Mib	SonetSdh
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc **noServiceResponse (resp)**

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	SonetSdh
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc **signalOne (sigOne)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

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Mib	SonetSdh
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc **signalTwo (sigTwo)**

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	SonetSdh
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Lp Sdh Vc4 Vc12 E1 Chan Tc **Operational (Op)**

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc **ingressConditioning (inCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***.

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Trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

Mib: SonetSdh

Values:
off
on

Default: off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc **egressConditioning (egCon)**

Access: Read only

Description: This attribute indicates the status of locally generated trunk conditioning towards the PDH line.

When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib: SonetSdh

Values:
off
on

Default: off

COMPONENT Lp Sdh Vc4 Vc12 E1 Chan **FrameLinkMonitoring (Flm)**

Groups:
GROUP Lp Sdh Vc4 Vc12 E1 Chan Flm Provisioned (Prov)
GROUP Lp Sdh Vc4 Vc12 E1 Chan Flm Operational (Op)

Scope: Device

Description: *Lp/n E1/n Chan/n FrameLinkMonitoring*

This component provides a monitoring function specific to a Frame Relay

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Channel on an E1 line. It combines the status of E1 channel-associated-signalling A-bits and HDLC frame defect.

Mib SonetSdh

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp Sdh Vc4 Vc12 E1 Chan Flm **Provisioned (Prov)**

Properties Provisioned

Description
This group contains all specific provisioning data for an *Flm* component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Flm **aBitMonitoring (aBit)**

Access Read and write

Description This attribute controls the monitoring of A-bit defects.

Mib SonetSdh

Values
disabled
enabled

Default enabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Flm **hdlcMonitoring (hdlc)**

Access Read and write

Description This attribute controls the monitoring of HDLC defect.

Mib SonetSdh

Values
disabled
enabled

Default No default

GROUP Lp Sdh Vc4 Vc12 E1 Chan Flm **Operational (Op)**

Properties Operational

Description This group contains all specific operational data for an *Flm* component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Flm **flmStatus (status)**

Access Read only

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Description	This attribute indicates the status of a Frame Relay channel on an E1 line. By combining the E1 channel-associated-signalling (CAS) A-bits status, and HDLC defect, a single value indicates the likely cause of the failure. This mechanism assumes that the far end equipment loops back signaling A-bits for some or all of the timeslots in a channel. The A-bits in channel are transmitted as '0'. If they are all received as '0', it is assumed that the E1 link is up in both directions. The presence of HDLC frames indicates that the service is connected. When A-bits and HDLC frames are correctly received, ***frameLinkUp*** is indicated. When neither are received, ***frameLinkDown*** is indicated. When HDLC frames are not receive but A-bits are not at fault, ***lossOfHdlc*** is indicated. When HDLC frames are received, but there is a fault in any of timeslot's A-bits on a channel ***lossOfAbit*** is indicated.
Mib	SonetSdh
Values	notMonitoring frameLinkUp frameLinkDown lossOfHdlc lossOfAbit
Default	No default

COMPONENT Lp Sdh Vc4 Vc12 E1 **Test (Test)**

Groups	GROUP Lp Sdh Vc4 Vc12 E1 Test OsiState (State) GROUP Lp Sdh Vc4 Vc12 E1 Test Setup (Setup) GROUP Lp Sdh Vc4 Vc12 E1 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	SonetSdh
Common Verbs	Help List Display

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VERB START Lp Sdh Vc4 Vc12 E1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sdh Vc4 Vc12 E1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Sdh Vc4 Vc12 E1 Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

GROUP Lp Sdh Vc4 Vc12 E1 Test **Setup (Setup)**

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **purpose (purpose)**

Access	Read and write

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Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib SonetSdh

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib SonetSdh

Values
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error

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	sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **frmSize (size)**

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	SonetSdh
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **frmPatternType (fpt)**

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	SonetSdh
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **customizedPattern (cp)**

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	SonetSdh
Values	Hex (H.0..H.ffffffff)

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Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **dataStartDelay (dsd)**

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	SonetSdh
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **displayInterval (di)**

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	SonetSdh
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

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GROUP Lp Sdh Vc4 Vc12 E1 Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the

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conditions described by these values.

Mib	SonetSdh
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **bitsTx**

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **bytesTx**

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **frmTx**

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh

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Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **bitsRx**

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **bytesRx**

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **frmRx**

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

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Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	SonetSdh
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test **timeRemaining**

Access	Read only

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Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sdh Vc4 Vc12 E1 Dsp

Scope	Device
Description	*LogicalProcessor/n E1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Dsp* components cannot be added or deleted.
Mib	SonetSdh
Common Verbs	Help List Display

COMPONENT Lp Sdh Vc4 Vc12 E1 Audio

Scope	Device
Description	*LogicalProcessor/n E1/0 Audio* The *Audio* component presents the audio status of the channels on a voice card. A voice card's *Audio* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Audio* components cannot be added or deleted.
Mib	SonetSdh
Common Verbs	Help List Display

COMPONENT Lp Sdh OpticalModule (Om)

Groups	GROUP Lp Sdh Om Provisioned (Prov) GROUP Lp Sdh Om OsiState (State) GROUP Lp Sdh Om Operational (Oper)
Scope	Device

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Description	*Lp/n Ethernet/n OpticalModule* This component represents the optical module device of the port. The optical module is used to identify the type of connection for a port.
Mib	SonetSdh
Common Verbs	Help List Display Add DELete

GROUP Lp Sdh Om Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *OpticalModule* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Om type

Access	Read and write
Description	This attribute specifies the expected optical module type. The values for the *type* and *insertedType* attributes must match; otherwise, an alarm is raised and the *OpticalModule* component is disabled. ***none***: This value indicates that no optical module type is specified. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode. ***SX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode. ***OC3SmLr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC3SmIr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC3MmSr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach). ***OC12SmLr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-

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Mode, Reach = 80Km (Long Reach).

OC12SmIr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib — SonetSdh

Values
none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr
OC48SmLr2
OC48SmIr

Default — none

GROUP Lp Sdh Om OsiState (State)

Properties — Operational

Description — This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — SonetSdh

ATTRIBUTE Lp Sdh Om adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: SonetSdh

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Sdh Om operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: SonetSdh

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sdh Om usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

GROUP Lp Sdh Om Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *OpticalModule* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Om insertedType

Access	Read only
Description	This attribute indicates the inserted optical module type. ***none***: This value indicates that there is no optical module inserted in the card. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode. ***SX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode. ***OC3SmLr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC3SmIr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC3MmSr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach). ***OC12SmLr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC12SmIr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

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OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib — SonetSdh

Values
none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr
OC48SmLr2
OC48SmIr

Default — none

ATTRIBUTE Lp Sdh Om serialNumber

Access — Read only

Description — This attribute indicates the serial number of the inserted optical module.

Mib — SonetSdh

Values — String (0..64, Extended ASCII)

Default — ""

ATTRIBUTE Lp Sdh Om failureCause

Access — Read only

Description — This attribute indicates the cause for the optical module's failure. The possible values are:

typeMismatch: This error indicates a mismatch between the *type* and *insertedType* attributes.

internalError: This error indicates an internal diagnostic failure of the optical module.

unsupportedOm: This error indicates that the inserted optical module is not supported on this card.

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absentOm: This error indicates that no optical module are currently present on this port.

noFailure: There is no failure.

Mib	SonetSdh
Values	typeMismatch internalError unsupportedOm absentOm noFailure
Default	noFailure

COMPONENT Lp JT2

Instance	Decimal (0..1)
Groups	GROUP Lp JT2 CustomerIdentifierData (CidData) GROUP Lp JT2 Provisioned (Prov) GROUP Lp JT2 IfEntryProv (IfEntry) GROUP Lp JT2 OperationalStatus (OperStatus) GROUP Lp JT2 OsiState (State) GROUP Lp JT2 Operational (Oper) GROUP Lp JT2 Statistics (Stats) GROUP Lp JT2 AdminInfo (AdminInfo)
Scope	Device
Description	*Lp/n JT2/n* The *JT2* component controls and monitors a JT2 port on a 2pJ6MAtm Function Processor. Up to two ports may be provisioned on the 2pJ6MAtm interface card.
Mib	Jt2
Subcomponents	COMPONENT Lp JT2 AtmCell (Cell)
Dyn. Subcomp.	COMPONENT Lp JT2 Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp JT2 CustomerIdentifierData (CidData)

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Jt2

ATTRIBUTE Lp JT2 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Jt2
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp JT2 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the JT2 specific provisioning data for a JT2 component.
Mib	Jt2

ATTRIBUTE Lp JT2 clockingSource (clockingSource)

Access	Read and write
Description	This attribute defines the source of the transmit clock for the JT2 line. When the clocking source is selected from ***local***, the oscillator on the port generates the clocking for the line. When the clocking source is selected from ***line***, the port synchronizes to the clock recovered from the incoming line signal. When the clocking source is selected from ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP. Note:- that when one port is set to ***local***, the other port must also be set to

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local, and when one port is set to ***module***, the other port must also be set to ***module***. If one of the ports is set to ***line***, the other port must be set to ***otherPort***.
Also, if a CP reference clock is available when the JT2 component is added, the clocking source defaults to ***module***, whereas if a CP reference clock is not available when the component is added, the clocking source defaults to ***local***.

Mib	Jt2
Values	local line module otherPort
Default	No default

ATTRIBUTE Lp JT2 lineLength (length)

Access	Read and write
Description	This attribute defines the line length for equalization calculations for the JT2 line. The range is between 0 and 480 feet (1 metre = 3.28 feet).
Mib	Jt2
Values	Decimal (0..480)
Units	feet
Default	0

ATTRIBUTE Lp JT2 applicationFramerName

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of the *JT2* component.
Mib	Jt2
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp JT2 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Jt2

ATTRIBUTE Lp JT2 ifAdminStatus (ifState)

Access	Read and write

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Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Jt2
Values	up down testing
Default	up

ATTRIBUTE Lp JT2 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Jt2
Values	Decimal (1..65535)
Default	No default

GROUP Lp JT2 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Jt2

ATTRIBUTE Lp JT2 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Jt2
Values	up down testing
Default	up

GROUP Lp JT2 OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Jt2

ATTRIBUTE Lp JT2 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Jt2
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp JT2 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Jt2
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp JT2 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Jt2
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp JT2 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

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The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Jt2
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp JT2 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Jt2
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp JT2 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

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The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — Jt2

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp JT2 alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Jt2

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

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Default	No default

ATTRIBUTE Lp JT2 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Jt2
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp JT2 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Jt2
Values	false true
Default	false

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GROUP Lp JT2 Operational (Oper)

Properties	Operational
Description	This group contains the JT2 specific operational data for a JT2 component in a digital hierarchy interface.
Mib	Jt2

ATTRIBUTE Lp JT2 losAlarm (los)

Access	Read only
Description	This attribute displays whether a LOS (Loss of Signal) alarm state is entered. An LOS alarm state is entered when LOS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOS defect is declared at the JT2 line interface when the input data is zero for 20 - 32 clock cycles. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. An LOS failure alarm is cleared when the LOS defect is absent for a period of 10 seconds +/- 0.5 seconds. The JT2 port goes into an *operationalState* of ***disabled*** for the duration of the LOS alarm condition. While the port is in the LOS alarm state, the port also transmits the far-end RAI defect indicator on the out-going JT2 line.
Mib	Jt2
Values	on off
Default	off

ATTRIBUTE Lp JT2 lofAlarm (lof)

Access	Read only
Description	This attribute indicates whether a LOF (Loss of Frame) alarm state is entered. A LOF alarm state is entered when LOF defects are observed and accumulated for 2.5 seconds +/- 0.5 seconds or more. A LOF defect occurs when seven or more consecutive incorrect frame alignment patterns (4 multiframes) are received. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The LOF alarm is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds. The port goes into an *operationalState* of ***disabled*** for the duration of the LOF alarm condition. While the port is in the LOF alarm state, the node also transmits the far-end RAI defect indicator on the out-going JT2 line.

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Mib	Jt2
Values	on off
Default	off

ATTRIBUTE Lp JT2 rxAisPhysicalAlarm (rxAisPhys)

Access	Read only
Description	This attribute indicates whether a Physical AIS alarm state is entered. A Physical AIS alarm state is entered when a Physical AIS defect is observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A Physical AIS defect is declared when the incoming signal has two or less zeros in a sequence of 3,156 bits (0.5 ms). If the physical AIS defects are intermittently occurring, the physical AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. A Physical AIS alarm is cleared when the Physical AIS defect is absent for a period of 10 seconds +/- 0.5 seconds. The port goes into an *operationalState* of ***disabled*** until the AIS alarm condition is cleared. While the port is in the Physical AIS alarm state, the node also transmits the far-end RAI defect indicator on the out-going JT2 line.
Mib	Jt2
Values	on off
Default	off

ATTRIBUTE Lp JT2 rxAisPayloadAlarm (rxAisPayld)

Access	Read only
Description	This attribute indicates whether a Payload AIS alarm state is entered. A Payload AIS alarm state is entered when a Payload AIS defect persists for a period of 2.5 seconds +/- 0.5 seconds. A Payload AIS defect is declared when the incoming signal of the 6312 kbit/s frame payload (TS1 - TS96) has two or less zeros in a sequence of 3,072 bits (0.5 ms). If the payload AIS defects are intermittently occurring, the payload AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. A Payload AIS failure alarm is cleared when the Payload AIS defect is absent for a period of 10 seconds +/- 0.5 seconds. The port goes into an *operationalState* of ***disabled*** until the AIS alarm condition is cleared. While the port is in the Payload AIS alarm state, the node also transmits the far-end RAI defect indicator on the out-going JT2 line.
Mib	Jt2

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Values	on off
Default	off

ATTRIBUTE Lp JT2 rxRaiAlarm (rxRai)

Access	Read only
Description	This attribute indicates whether a Received RAI alarm state is entered. A received RAI alarm state is entered when the RAI signal is detected on the incoming JT2 Line (when 16 or more consecutive RAI patterns of 1111111100000000 are received on the 4 kbit/s data channel (m-bits) within the framing bits of the JT2 frame). The JT2 port goes into an *operationalState* of ***Disabled*** until the RAI alarm condition is cleared. The RAI alarm is cleared when four or more consecutive non-RAI patterns (anything other than 1111111100000000) are received.
Mib	Jt2
Values	on off
Default	off

ATTRIBUTE Lp JT2 txAisPhysicalAlarm (txAisPhys)

Access	Read only
Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the outgoing JT2 line. Currently the JT2 port only transmits a Physical AIS (no Payload AIS) on the outgoing JT2 line. Since there is no Idle signal defined for JT2, the AIS signal is transmitted when the JT2 port is in the *operationalState* of ***locked.*** The AIS signal may also be transmitted for diagnostic testing.
Mib	Jt2
Values	on off
Default	off

ATTRIBUTE Lp JT2 txRaiAlarm (txRai)

Access	Read only
Description	This attribute indicates whether an RAI defect indication pattern is being sent on the out-going JT2 line. The RAI alarm pattern is transmitted in the 4 kbit/s data channel (m-bits) when the port detects a LOS, AIS or LOF alarm condition.
Mib	Jt2

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Values	on off
Default	off

GROUP Lp JT2 Statistics (Stats)

Properties	Operational
Description	This group contains the statistical data for a JT2 component in a digital hierarchy interface.
Mib	Jt2

ATTRIBUTE Lp JT2 runningTime (runningTime)

Access	Read only
Description	This attribute indicates the number of seconds since the JT2 component was activated and placed in an ***unlocked*** state or used for operational testing. All the other error counts that follow as well as each *JT2* subcomponent's error counts can be updated when this count is active.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds that the JT2 port has been in an error free state.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 erroredSec (es)

Access	Read only
Description	This attribute indicates the total number of errored seconds for the JT2 port. An errored second is declared when a second with one or more Code Violation Error events, or one or more LOF or LOS defects occur. A code violation error may be a cyclic redundancy check (CRC) error or a bipolar violation (BPV) error.
Mib	Jt2

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of severely errored seconds for the JT2 port. A severely errored second occurs when a second with 255 or more Code Violation Error events or one or more LOF or LOS defects occur.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 sevErroredFrmSec (sefs)

Access	Read only
Description	This attribute indicates the total number of severely errored framing seconds for the JT2 port. A severely errored framing second occurs when a second with one or more Framing Errors occur.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 unavailSec

Access	Read only
Description	This attribute indicates the total number of seconds that the interface has been in an unavailable state. An unavailable state occurs at the onset of 10 consecutive Severely Errored Seconds. When the unavailable state is entered, the 10 Severely Errored Seconds are immediately transfered to the count of unavailableSeconds by incrementing the count of unavailSec by 10 and decrementing the count of sevErroredSec by 10. Whilst in the unavailable state, an unavailableSecond is counted for each SES or SEFS that occurs, and the count of SES and SEFS are both inhibited. The unavailable state is cleared at the onset of 10 consecutive seconds which are not Severely Errored Seconds.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Lp JT2 bpvErrors (bpv)

Access	Read only
Description	This attribute indicates the total count of bipolar violations (BPV). A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line. The value of this attribute will wrap to zero when it reaches its maximum value.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 crcErrors (crcErr)

Access	Read only
Description	This attribute indicates the total number of cyclic redundancy check (CRC-5) errors detected on the incoming JT2 line. The value of this attribute will wrap to 0 when its maximum value is reached.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 frameErrors (frmErr)

Access	Read only
Description	This attribute indicates the total number of Framing Errors that have occured on the JT2 port. A Framing Error is an error in the framing bits. The value of this attribute will wrap to 0 when its maximum value is reached.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 losStateChanges (losChanges)

Access	Read only
Description	This attribute indicates the total number of times that the incoming signal on the JT2 line has been lost. The value of this attribute will wrap to 0 when its maximum value is reached.
Mib	Jt2

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Values	Decimal (0..4294967295)
Default	0

GROUP Lp JT2 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Jt2

ATTRIBUTE Lp JT2 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Jt2
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp JT2 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Jt2
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp JT2 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	Jt2
Values	no yes
Default	no

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COMPONENT Lp JT2 Test (Test)

Groups	GROUP Lp JT2 Test OsiState (State) GROUP Lp JT2 Test Setup (Setup) GROUP Lp JT2 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	Jt2
Common Verbs	Help List Display

VERB START Lp JT2 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp JT2 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp JT2 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Jt2

ATTRIBUTE Lp JT2 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock*

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command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Jt2

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp JT2 Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Jt2

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp JT2 Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	Jt2
Values	idle active (activ) busy
Default	idle

GROUP Lp JT2 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Jt2

ATTRIBUTE Lp JT2 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Jt2
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp JT2 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1

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byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Jt2

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp JT2 Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Jt2

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp JT2 Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

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Mib	Jt2
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp JT2 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Jt2
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp JT2 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Jt2
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp JT2 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Jt2

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Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp JT2 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Jt2
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp JT2 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Jt2

ATTRIBUTE Lp JT2 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has

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failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib Jt2

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp JT2 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Jt2

Values Long Integer

Default No default

ATTRIBUTE Lp JT2 Test bytesTx

Access Read only

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Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test frmRx

Access	Read only

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Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Jt2
Values	String (5, ASCII)

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Default	No default

ATTRIBUTE Lp JT2 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Jt2
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp JT2 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Jt2
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp JT2 AtmCell (Cell)

Groups	GROUP Lp JT2 Cell Provisioned (Prov) GROUP Lp JT2 Cell Operational (Oper) GROUP Lp JT2 Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	Jt2
Common Verbs	Help List Display

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GROUP Lp JT2 Cell Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.
Mib	Jt2

ATTRIBUTE Lp JT2 Cell alarmActDelay (act)

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	Jt2
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp JT2 Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	Jt2
Values	off on
Default	No default

ATTRIBUTE Lp JT2 Cell correctSingleBitHeaderErrors

Access	Read and write

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Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: Jt2

Values: off
on

Default: off

ATTRIBUTE Lp JT2 Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Jt2

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp JT2 Cell hecSampleInterval (hSample)

Access: Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.

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This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Jt2

Values Decimal (0..25)

Units seconds

Default 0

ATTRIBUTE Lp JT2 Cell hecErrorLimit (hLimit)

Access Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Jt2

Values Decimal (1..250000)

Default No default

ATTRIBUTE Lp JT2 Cell lcdStateDelay (delay)

Access Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Jt2

Values Decimal (1..50)

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Units	msec
Default	No default

ATTRIBUTE Lp JT2 Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Jt2
Values	Decimal (1..25)
Default	1

GROUP Lp JT2 Cell Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes for the *AtmCell* component.
Mib	Jt2

ATTRIBUTE Lp JT2 Cell lcdAlarm (lcd)

Access	Read only
Description	This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute. In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected. For an *AtmCell* component located under a *DS3* or *E3* component with

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mapping = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib Jt2

Values on
off

Default off

GROUP Lp JT2 Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib Jt2

ATTRIBUTE Lp JT2 Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib Jt2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp JT2 Cell sevErroredSec (ses)

Access Read only

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Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: Jt2

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp JT2 Cell receiveCellUtilization (rxutil)

Access: Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: Jt2

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Lp JT2 Cell transmitCellUtilization (txutil)

Access: Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or

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Channel component has been *suspended* since its parent has been *locked*.

Mib	Jt2
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp JT2 Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Hssi

Instance	Decimal (0..0)
Groups	GROUP Lp Hssi Provisioned (Prov) GROUP Lp Hssi CustomerIdentifierData (CidData) GROUP Lp Hssi AdminInfo (AdminInfo) GROUP Lp Hssi IfEntryProv (IfEntry) GROUP Lp Hssi OperationalStatus (OperStatus) GROUP Lp Hssi OsiState (State) GROUP Lp Hssi Operational (Oper)
Scope	Application
Description	*Lp/m Hssi/0*

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The *Hssi* component controls an HSSI interface.

Mib LogicalProcessor

Dyn. Subcomp. COMPONENT Lp Hssi Test (Test)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Hssi Provisioned (Prov)

Properties Provisioned

Description

This group contains the specific provisioning data for an *Hssi* component.

Mib LogicalProcessor

ATTRIBUTE Lp Hssi linkMode (mode)

Access Read and write

Description

This attribute defines the intended gender of the HSSI port. The actual gender of the port is determined by the hardware setup.

In ***dte*** mode, the *ta* line signal is driven as specified by the attribute *readyLineState* when the HSSI port passes its diagnostics. The *ta* line signal is then driven as specified by the attribute *dataTransferLineState* when the application is ready to transfer data. On the other hand, the input line signal *ca* is compared against those specified in the attributes *readyLineState* and *dataTransferLineState*. The application will be notified when the specified input line states are observed.

In ***dce*** mode, the ***Hssi*** component behaves similarly as when it is in ***dte*** mode. However, it will be driving the ***dce*** line signal ***(ca)*** and monitoring the ***dte*** line signal (*ta*) as specified by the attributes *readyLineState* and *dataTransferLineState*.

Mib LogicalProcessor

Values
dte
dce

Default dce

ATTRIBUTE Lp Hssi readyLineState (rls)

Access Read and write

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Description	This attribute specifies the line signal originating from the HSSI interface that will always be turned on, provided the HSSI interface passes it diagnostics. This set of signal is generally required for maintaining the connection. Note that both *dte* and *dce* signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the operational attribute *actualLinkMode.* See also *linkMode*.
Mib	LogicalProcessor
Set of	ca ta
Default	(ca, ta)

ATTRIBUTE Lp Hssi dataTransferLineState (dtls)

Access	Read and write
Description	This attribute specifies the line signals required to indicate that the external equipment is in a good state (that is, data transfer can proceed). Note that both ***dte*** and ***dce*** signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the operational attribute *actualLinkMode*. The value of this attribute must be a superset of that of the *readyLineState* attribute. See also *linkMode*.
Mib	LogicalProcessor
Set of	ca ta
Default	(ca, ta)

ATTRIBUTE Lp Hssi lineSpeed (speed)

Access	Read and write
Description	This attribute specifies the speed of the line for source clocking. This attribute is ignored if the interface is not providing a clock. Note that the actual clock rate are available in the operational attributes *actualTxLineSpeed* and *actualRxLineSpeed*.
Mib	LogicalProcessor
Values	Decimal (1000000..50000000)
Units	bit/s
Default	45000000

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ATTRIBUTE Lp Hssi applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies the component name of a *Framer* which is associated with the *Hssi* component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Hssi CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Hssi AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.

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Mib	LogicalProcessor

ATTRIBUTE Lp Hssi vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Hssi commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Hssi includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LogicalProcessor
Values	no yes
Default	no

GROUP Lp Hssi IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi ifAdminStatus (ifState)

Access	Read and write

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Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Hssi ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Hssi OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp Hssi OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Hssi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Hssi usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Hssi availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

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The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Hssi proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Hssi controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

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The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — LogicalProcessor

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp Hssi alarmStatus (osiAlarm)

Access — Read only

Description

If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — LogicalProcessor

Set of
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

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Default	No default

ATTRIBUTE Lp Hssi standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Hssi unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

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GROUP Lp Hssi Operational (Oper)

Properties	Operational
Description	This group contains all specific operational data for a *Hssi* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi actualLinkMode

Access	Read only
Description	This attribute indicates the actual link mode defined by the hardware. Note that the hardware overrides the provisionable data. The port behaves as a ***dce*** or ***dte*** according to the *actualLinkMode*.
Mib	LogicalProcessor
Values	dte dce
Default	No default

ATTRIBUTE Lp Hssi lineState

Access	Read only
Description	This attribute indicates the state of the interface signals.
Mib	LogicalProcessor
Set of	ca ta tm la lb
Default	No default

ATTRIBUTE Lp Hssi actualTxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the transmit clock. Note the reported transmit speed is in an error of +/- 10000 bit/s
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

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ATTRIBUTE Lp Hssi actualRxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the receive clock. Note the reported receive speed is in an error of +/- 10000 bit/s
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp Hssi dataXferStateChanges

Access	Read only
Description	This attribute counts the line transitions from and to data transfer state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Hssi Test (Test)

Groups	GROUP Lp Hssi Test OsiState (State) GROUP Lp Hssi Test Setup (Setup) GROUP Lp Hssi Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp Hssi Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

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VERB STOP Lp Hssi Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Hssi Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Hssi Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Hssi Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Hssi Test Setup (Setup)

Properties: Operational

Description: This group contains all of the operational data for a *Test* component.

Mib: LogicalProcessor

ATTRIBUTE Lp Hssi Test purpose (purpose)

Access: Read and write

Description: This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib: LogicalProcessor

Values: String (0..40, ASCII)

Default: No default

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ATTRIBUTE Lp Hssi Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	LogicalProcessor
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp Hssi Test frmSize (size)

Access	Read and write

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Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	LogicalProcessor
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Hssi Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Hssi Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Hssi Test dataStartDelay (dsd)

Access	Read and write

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Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Hssi Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Hssi Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Hssi Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.

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Mib	LogicalProcessor

ATTRIBUTE Lp Hssi Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.
Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown

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neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp Hssi Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Hssi Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Hssi Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Hssi Test bitsRx

Access Read only

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Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Hssi Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Hssi Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Hssi Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

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ATTRIBUTE Lp Hssi Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Hssi Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Hssi Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)

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Units	minutes
Default	0.00

COMPONENT Lp IlsForwarder (IlsFwdr)

Instance	Decimal (0)
Groups	GROUP Lp IlsFwdr Provisioned (Prov) GROUP Lp IlsFwdr IfEntryProv (IfEntry) GROUP Lp IlsFwdr OsiState (State) GROUP Lp IlsFwdr OperationalStatus (OperStatus) GROUP Lp IlsFwdr Statistics (Stats)
Scope	Device
Description	*Lp/n IlsForwarder/0* This component defines an instance of a IlsForwarder. At least one instance of this component must be provisioned if there is any *AtmMpe* component provisioned.
Mib	LanDrivers
Subcomponents	COMPONENT Lp IlsFwdr LanTest (Lt) COMPONENT Lp IlsFwdr Test
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp IlsFwdr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for *IlsForwarder* component.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr linkToTrafficSource

Access	Read only
Description	This attribute contains a list of components that are using this *IlsForwarder*.
Mib	LanDrivers
List of	Link (Service, ilsForwarder)
List Size	256
Default	No default

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GROUP Lp IlsFwdr IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE Lp IlsFwdr ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP Lp IlsFwdr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp IlsFwdr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp IlsFwdr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

GROUP Lp IlsFwdr OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP Lp IlsFwdr Statistics (Stats)

Properties	Operational
Description	This group contains the operational frame statistics related attributes of the *IlsForwarder* component.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr framesReceived

Access	Read only
Description	This attribute counts the total number of frames that have been received by this card. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Long Integer

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Default	No default

ATTRIBUTE Lp IlsFwdr processedCount

Access	Read only
Description	This attribute counts the number of frames successfully processed by this card. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr errorCount

Access	Read only
Description	This attribute counts the number of internal errors detected in transferring frames from an ATM card to this card. A continuous increment of this count indicates that the hardware may probably be defective. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr framesDiscarded

Access	Read only
Description	This attribute counts the number of frames which are discarded due to local buffer congestion. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp IlsFwdr LanTest (Lt)

Groups	GROUP Lp IlsFwdr Lt TestOp (Top)
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This

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	includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	LanDrivers
Dyn. Subcomp.	COMPONENT Lp IlsFwdr Lt FrameCompare (FrmCmp) COMPONENT Lp IlsFwdr Lt FrameCopy (FrmCpy) COMPONENT Lp IlsFwdr Lt PortConfig (PrtCfg) COMPONENT Lp IlsFwdr Lt FrameBuild (Fb) COMPONENT Lp IlsFwdr Lt Control (Cntl)
Common Verbs	Help List Display

VERB Start Lp IlsFwdr Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp IlsFwdr Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp IlsFwdr Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp IlsFwdr Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp IlsFwdr Lt **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt **tData (td)**

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Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt FrameCompare (FrmCmp)

Groups	GROUP Lp IlsFwdr Lt FrmCmp TestOp (Top)
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

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COMPONENT Lp IlsFwdr Lt FrameCopy (FrmCpy)

Groups	GROUP Lp IlsFwdr Lt FrmCpy TestOp (Top)
Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt PortConfig (PrtCfg)

Groups	GROUP Lp IlsFwdr Lt PrtCfg TestOp (Top)
Scope	Device

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Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp IlsFwdr Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt PrtCfg **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt PrtCfg **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt **FrameBuild (Fb)**

Groups	GROUP Lp IlsFwdr Lt Fb TestOp (Top)
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the

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	LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	LanDrivers
Dyn. Subcomp.	COMPONENT Lp IlsFwdr Lt Fb TransmitInfo (TxInfo) COMPONENT Lp IlsFwdr Lt Fb FddiMac (MacFddi) COMPONENT Lp IlsFwdr Lt Fb EthernetMac (MacEnet) COMPONENT Lp IlsFwdr Lt Fb TokenRingMac (MacTr) COMPONENT Lp IlsFwdr Lt Fb DataField (Data) COMPONENT Lp IlsFwdr Lt Fb IpHeader (IpH) COMPONENT Lp IlsFwdr Lt Fb LlcHeader (Llch) COMPONENT Lp IlsFwdr Lt Fb AppleHeader (AppleH) COMPONENT Lp IlsFwdr Lt Fb IpxHeader (IpxH)
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb **TransmitInfo (TxInfo)**

Groups	GROUP Lp IlsFwdr Lt Fb TxInfo TestOp (Top)

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Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb TxInfo **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb TxInfo **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb **FddiMac (MacFddi)**

Groups	GROUP Lp IlsFwdr Lt Fb MacFddi TestOp (Top)
Scope	Device

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Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb MacFddi **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb MacFddi **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb **EthernetMac (MacEnet)**

Groups	GROUP Lp IlsFwdr Lt Fb MacEnet TestOp (Top)
Scope	Device

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Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb MacEnet **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb MacEnet **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb **TokenRingMac (MacTr)**

Groups	GROUP Lp IlsFwdr Lt Fb MacTr TestOp (Top)
Scope	Device

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Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb MacTr **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb MacTr **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb **DataField (Data)**

Groups	GROUP Lp IlsFwdr Lt Fb Data TestOp (Top)
Scope	Device
Description	This component adds a data field to frame.
Mib	LanDrivers
Common Verbs	Help List Display

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VERB Get Lp IlsFwdr Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb Data **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb Data **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb **IpHeader (IpH)**

Groups	GROUP Lp IlsFwdr Lt Fb IpH TestOp (Top)
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

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VERB Tlist Lp IlsFwdr Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb IpH **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb IpH **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb **LlcHeader (Llch)**

Groups	GROUP Lp IlsFwdr Lt Fb Llch TestOp (Top)
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp IlsFwdr Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb Llch **TestOp (Top)**

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Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb Llch tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb AppleHeader (AppleH)

Groups	GROUP Lp IlsFwdr Lt Fb AppleH TestOp (Top)
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb AppleH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

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Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb IpxHeader (IpxH)

Groups	GROUP Lp IlsFwdr Lt Fb IpxH TestOp (Top)
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Control (Cntl)

Groups	GROUP Lp IlsFwdr Lt Cntl TestOp (Top)
Scope	Device

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Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Cntl **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Cntl **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr **Test**

Groups	GROUP Lp IlsFwdr Test PortTestOp (PTO) GROUP Lp IlsFwdr Test Results (Results)
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or*

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Lp/n IlsForwarder/n Test
The Test component is used to do StartUp port test for LAN cards.

Mib	LanDrivers
Common Verbs	Help List Display

VERB Start **Lp IlsFwdr Test**

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop **Lp IlsFwdr Test**

Impact	Service
Description	This verb is used to stop a test.

VERB Reset **Lp IlsFwdr Test**

Impact	Service
Description	This verb is used to reset the Test component.

GROUP **Lp IlsFwdr Test** **PortTestOp (PTO)**

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	LanDrivers

ATTRIBUTE **Lp IlsFwdr Test** **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	LanDrivers
Values	onCard normal wrapA

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	wrapB thruA thruB extWrapA extWrapB extThruA extThruB extWrapAB extWrapBA
Default	No default

ATTRIBUTE Lp llsFwdr Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes.
Mib	LanDrivers
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp llsFwdr Test duration (duration)

Access	Read and write
Description	This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.
Mib	LanDrivers
Values	Decimal (1..30240)
Units	minutes
Default	1

GROUP Lp llsFwdr Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the Test component.
Mib	LanDrivers

ATTRIBUTE Lp llsFwdr Test elapsedTime

Access	Read only
Description	This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.

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Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp IlsFwdr Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp IlsFwdr Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	LanDrivers
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning
Default	neverStarted

ATTRIBUTE Lp IlsFwdr Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.

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Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp InverseMultiplexerAtm (Ima)

Instance	Decimal (0..113)
Groups	GROUP Lp Ima Provisioned (Prov) GROUP Lp Ima Operational (Oper) GROUP Lp Ima Statistics (Stats) GROUP Lp Ima CustomerIdentifierData (CidData) GROUP Lp Ima OsiState (State)
Scope	Device

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Description	*Lp/n InverseMultiplexerAtm/n* *Lp/n Ds3/n InverseMultiplexerAtm/n* This component is used to define an inverse multiplexing for ATM (IMA) group. IMA provides a data rate greater than DS1 E1 in increments of DS1 E1. To use IMA on an 8pDS1E1, MSA32, MSA8, 2pSTM1eCh or 2pSTM1Ch function processor, add an *Lp/n InverseMultiplexerAtm/n* component. To use IMA on a 4pDS3ChAtm function processor, add an *Lp/n Ds3/n InverseMultiplexerAtm/n* component. To use IMA in a protected configuration on the 2pSTM1Ch, add a *Laps/n InverseMultiplexerAtm/n* component. The instance range 0..7 applies to 8pDS1Atm, 8pE1Atm, 8pDS1Msa and 8pE1Msa cards. The instance range 0..13 applies to 4pDS3ChAtm cards. The instance range 0..29 applies to MSA32 cards. The instance range 0..113 applies to the 2pStm1eCh and 2pSTM1Ch cards. The instance number of an *IMA* group must not be the same as the instance number of a *DS1*/*E1* "ATM UNI port" under the same *Lp*. An "ATM UNI port" is a *DS1* or *E1* component with a single *Chan* whose *applicationFramer* attribute is linked to an *AtmIf* component. On an MSA32 card, ports that are used as IMA links have two immiscible sub-ranges: 0..15 and 16..31. The instance number of an *IMA* group must be in the same sub-range as all of its ports. IMA sub-ranges also exist on the 2pStm1eCh and 2pSTM1Ch cards, instances 0..56 are allowed on port SDH 0, and instances 57..113 are allowed on port SDH 1.
Mib	Ima
Opt. Subcomp.	COMPONENT Lp Ima Link (Lk)
Dyn. Subcomp.	COMPONENT Lp Ima Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Ima Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Ima* component. The default values of *linkSelectionCriterion* and *linkRetryTimeout* depend on card type.
Mib	Ima

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ATTRIBUTE Lp Ima linkSelectionCriterion (select)

Access	Read and write
Description	This attribute specifies the method to be used by the IMA group when selecting links to be activated. This comes into effect only when the configured links do not respect the maximum differential delay (otherwise all links are accepted). If ***leastDelay*** is chosen, first the link having the smallest delay is selected as the reference link. The IMA group includes all links which respect the maximum differential delay relative to the reference link. If ***maxBandwidth*** is chosen, the IMA group selects the maximum possible number of links, with each selected link respecting the maximum differential delay relative to every other selected link. When more than one possibility exists, the combination which offers the least delay is selected. The default value for Multi-Service Access cards is ***leastDelay***, and for all other cards is ***maxBandwidth***. On Multi-Service Access cards ***leastDelay*** is the only acceptable provisionable value.
Mib	Ima
Values	leastDelay maxBandwidth
Default	No default

ATTRIBUTE Lp Ima maxDiffDelay (delay)

Access	Read and write
Description	This attribute specifies the maximum differential delay between links acceptable in the IMA group. If a link violates that maximum differential delay, it will not be active in the IMA group and an alarm will be generated. For the 4pDS3ChAtm card, the value must not exceed 70.
Mib	Ima
Values	Decimal (1..100)
Units	msec
Default	25

ATTRIBUTE Lp Ima linkRetryTimeout (retry)

Access	Read and write
Description	This attribute specifies the amount of time before reactivation of a link is attempted after it recovers from a failure condition. The default value for Multi-Service Access cards is ***1***, and for all other

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cards is ***10***. On Multi-Service Access cards ***1*** is the only acceptable provisionable value.

Mib	Ima
Values	Decimal (0..1000)
Units	seconds
Default	No default

ATTRIBUTE Lp Ima applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the *AtmIf* component using the *Ima*. An example is *AtmIf/31.*
Mib	Ima
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp Ima transmitClockMode (clock)

Access	Read and write
Description	This attribute specifies the transmit clocking mode. If ***itc*** (Independent Transmit Clock) is chosen, the physical ports used by the IMA group may have different clocking sources. If ***ctc*** (Common Transmit Clock) is chosen, it is recommended that the physical ports used by the IMA group have the same clocking source. However, if the physical ports have different clocking sources, the operator should ensure that all the clocking sources have the same rate.
Mib	Ima
Values	itc ctc
Default	itc

ATTRIBUTE Lp Ima protocol (prot)

Access	Read and write
Criticality	Component
Description	This attribute specifies which IMA protocol the component should run. If ***atmForum10*** is chosen, the ATM Forum's IMA protocol (version 1.0) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA also uses the ATM Forum's IMA protocol 1.0. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If ***atmForum11*** is chosen, the ATM Forum's IMA protocol (version 1.1) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The

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IMA group will come up only if the far end IMA uses the ATM Forum's IMA protocol 1.0 or 1.1. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If the far end is 1.0, then the near end downgrades to 1.0. After the downgrade, this attribute continues to specify the provisioned protocol version, while the *activeProtocol* operational attribute of the IMA component specifies the protocol version effectively running.
If ***proprietary*** is chosen, Nortel's proprietary IMA protocol will be used. This protocol version is not currently supported as the IMA group will not inter-operate with IMA implementations from other vendors. Feature ***ima*** must be provisioned on the LP for this protocol to be used.

The DEFAULT on the 2pStm1eCh and 2pSTM1Ch function processors is atmForum11.

Mib: Ima

Values:
atmForum10
proprietary
atmForum11

Default: No default

GROUP Lp Ima Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *Ima* component.

Mib: Ima

ATTRIBUTE Lp Ima failureCause (cause)

Access: Read only

Description: This attribute indicates the cause of the current local end failure experienced by the IMA group. The failure may have occurred during a start-up procedure or during normal operation. Possible values are:
noFailure: no local end failure.
noGoodLinksInStartup: no good links were available during IMA start-up.
badGidInStartup: during start-up, different group identifiers (GIDs) were received on the links.
badLidInStartup: during start-up, duplicate link identifiers (LIDs) were received on the links.
unsupportedFrameLengthInStartup: during start-up, an unsupported frame length was received.
timeoutInStartup: a time-out has occurred during start-up.
noGoodLinks: no good links are available in the IMA group.
remoteFailure: the far end is down.
unsupportedSymmetryInStartup: the symmetry proposed by the far end is not supported on the near-end. This value will occur when the IMA group is running the ATM Forum protocol and the far end is proposing a group symmetry other than "symmetric configuration and operation".

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unsupportedVersionInStartup: the ima version proposed by the far end is not supported on the near-end.

Mib	Ima
Values	noFailure noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks remoteFailure unsupportedSymmetryInStartup unsupportedVersionInStartup
Default	No default

ATTRIBUTE Lp Ima remoteDefect (remDef)

Access	Read only
Description	This attribute indicates the cause of the current far end defect experienced by the IMA group. For the ATM Forum IMA protocol, possible values are: ***noDefect***: no defect. ***unsupportedFrameLengthInStartup***: during the far end's start-up, an unsupported frame length was received. ***unsupportedSymmetryInStartup***: during the far end's start-up, an unsupported symmetry configuration was received. ***otherAbortStartup***: the far end has aborted its start-up for another reason. This could be because different Gids were received on the links or if duplicate link identifiers (LIDs) were received. ***insufficientLinks***: the far end does not have sufficient links active. This value will be displayed if the far end IMA group is locked. ***blocked***: the far end IMA group is blocked. For the proprietary IMA protocol, possible values are: ***noDefect***: no defect. ***noGoodLinksInStartup***: no good links were available during the far end's start-up. ***badGidInStartup***: during the far end's start-up, different GIDs were received on the links. ***badLidInStartup***: during the far end's start-up, duplicate link identifiers (LIDs) were received on the links. ***unsupportedFrameLengthInStartup***: during the far end's start-up, an unsupported frame length was received. ***timeoutInStartup***: a time out has occurred during the far end's start-up. ***noGoodLinks***: no good links are available in the far end IMA group. ***blocked***: the far end IMA group is locked. ***unsupportedVersionInStartup***: the ima version proposed by the far end is not supported on the near-end.

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Mib	Ima
Values	noDefect noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks locked unsupportedSymmetryInStartup otherAbortStartup insufficientLinks blocked unsupportedVersionInStartup
Default	No default

ATTRIBUTE Lp Ima remoteLidsConfig (remConf)

Access	Read only
Description	This attribute indicates all the links which have been configured in the remote IMA group. For example, if links 1, 3 and 5 have been configured in the remote IMA group, this attribute would contain ***1 3 5***.
Mib	Ima
Set of	Decimal (0..31)
Default	No default

ATTRIBUTE Lp Ima remoteLidsActive (remAct)

Access	Read only
Description	This attribute indicates all the links which are active in the remote IMA group. For example, if links 1 and 5 are active in the remote IMA, this attribute would contain ***1 5***.
Mib	Ima
Set of	Decimal (0..31)
Default	No default

ATTRIBUTE Lp Ima cellCapacity (cap)

Access	Read only
Description	This attribute indicates the total cell capacity (in cells per second) which is provided to the ATM layer. This cell capacity takes into account the physical and IMA level overheads.
Mib	Ima
Values	Decimal (0..4294967295)

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Units	cell/s
Default	No default

ATTRIBUTE Lp Ima remoteGid (remGid)

Access	Read only
Description	This attribute indicates the IMA group identifier (GID) used by the remote IMA. A value of 0 will be displayed if the group is not receiving IMA Control Protocol (ICP) cells.
Mib	Ima
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Lp Ima clockingModeMismatch (mismatch)

Access	Read only
Description	This attribute indicates whether or not both ends of the IMA group are using the same transmit clocking mode (***itc***/***ctc***). Its value will be ***yes*** if both ends are not using the same transmit clocking mode. A clocking mode mismatch does not prevent an IMA group from coming up and can be corrected by using the same clocking mode at both ends.
Mib	Ima
Values	no yes
Default	No default

ATTRIBUTE Lp Ima activeProtocol (activeProt)

Access	Read only
Description	This attribute indicates which IMA protocol the *Ima* component is effectively running. This attribute is supported on the 8pDs1Atm, 8pE1Atm, 4pDS3ChAtm, 2pStm1eCh and 2pSTM1Ch cards. This attribute is not supported on the MSA32 and MSA8 cards. The value of this attribute is the same as the provisioned *protocol* attribute if the IMA is operating at the provisioned protocol version. The value of this attribute indicates the dongraded protocol version if the IMA has gone through a protocol version downgrade upon IMA 1.1 to IMA 1.0 interworking.
Mib	Ima
Values	atmForum10 proprietary atmForum11

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Default	No default

GROUP Lp Ima Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Ima* component.
Mib	Ima

ATTRIBUTE Lp Ima runningTime (running)

Access	Read only
Description	This attribute indicates the length of time (in seconds) for which the *Ima* component has been in the unlocked state or has been used for operational testing.
Mib	Ima
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Ima unavailSec (unavail)

Access	Read only
Description	This attribute indicates the number of one second intervals during which the *Ima* component has been unlocked and out of service.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima failures (fail)

Access	Read only
Description	This attribute indicates the number of complete failures, during start-up or normal operation, that the *Ima* component has experienced since being added. It must be noted that a service degradation, such as 1 of the 3 links in an IMA group being down, is not counted as a failure. If an *Ima* component is in a failure loop and does not come up, this count will only increase by 1.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima receiveCellUtilization (rxutil)

Access	Read only

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Description	This attribute indicates the ratio of the number of valid, assigned user cells received on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period.
Mib	Ima
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Ima transmitCellUtilization (txutil)

Access	Read only
Description	This attribute indicates the ratio of the number of user cells transmitted on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period.
Mib	Ima
Values	Decimal (0..100)
Units	%
Default	No default

GROUP Lp Ima CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Ima

ATTRIBUTE Lp Ima customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component.

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Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib Ima

Values Decimal (0; 1..8191)

Default 0

GROUP Lp Ima OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Ima

ATTRIBUTE Lp Ima adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Ima

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp Ima operationalState (osiOper)

Access Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Ima usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Ima availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	Ima
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Ima proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Ima
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Ima controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Ima
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Ima alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Ima

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp Ima standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Ima
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Ima unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ima
Values	false true
Default	false

COMPONENT Lp Ima Test (Test)

Groups	GROUP Lp Ima Test OsiState (State) GROUP Lp Ima Test Setup (Setup) GROUP Lp Ima Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	Ima
Common Verbs	Help List Display

VERB START Lp Ima Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

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VERB STOP Lp Ima Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Ima Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp Ima Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ima
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Ima Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Ima
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Ima Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ima
Values	idle active (activ) busy
Default	idle

GROUP Lp Ima Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Ima

ATTRIBUTE Lp Ima Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Ima
Values	String (0..40, ASCII)
Default	No default

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ATTRIBUTE Lp Ima Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	Ima
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp Ima Test frmSize (size)

Access	Read and write

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Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Ima
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Ima Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Ima
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Ima Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Ima
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Ima Test dataStartDelay (dsd)

Access	Read and write

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Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Ima
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Ima Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Ima
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Ima Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Ima
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Ima Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.

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Mib	Ima

ATTRIBUTE Lp Ima Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.
Mib	Ima
Values	testTimeExpired stoppedByOperator unknown

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neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp Ima Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test bitsRx

Access Read only

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Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp Ima Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp Ima Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp Ima Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ima
Values	Long Integer
Default	No default

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ATTRIBUTE Lp Ima Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Ima
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Ima Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Ima
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Ima Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Ima
Values	Decimal (0.00..30240.00)

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Units	minutes
Default	0.00

COMPONENT Lp Ima Link (Lk)

Instance	Decimal (0..31)
Groups	GROUP Lp Ima Lk Provisioned (Prov) GROUP Lp Ima Lk Operational (Oper) GROUP Lp Ima Lk Statistics (Stats) GROUP Lp Ima Lk OsiState (State)
Scope	Device
Description	*Lp/n Ima/n Link/n* *Lp/n Ds3/n Ima/n Link/n* This component is used to define a DS1/E1 link belonging to an IMA group. The instance number of the *Link* subcomponent corresponds to the link identifier (LID) used by the link in IMA Control Protocol (ICP) cells. To use Ima on an 8pDS1E1 function processor, add *Lp/n Ima/n Link/n*. To use Ima on a 4pDS3ChAtm function processor, add *Lp/n Ds3/n Ima/n Link/n*.
Mib	Ima
Common Verbs	Help List Display Add DELete

GROUP Lp Ima Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp Ima Lk interfaceName

Access	Read and write
Criticality	Component
Description	This attribute associates the *Link* subcomponent with a specific interface on a function processor, for example *Lp/5 E1/3 Chan/0*. If IMA groups and independent links coexist on a card running IMA and per-VC queueing is enabled, plan the selection of DS1 or E1 ports to be used by the IMA group carefully. For a 4pDS3ChAtm function processor there is no per-VC queueing.
Mib	Ima

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Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Lp Ima Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp Ima Lk failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause on this link. Possible values are: ***noFailure***: there is no failure on this link. ***interfaceDown***: the physical port used by the link is down. ***lif***: the link is in loss of IMA frame (LIF) state. ***lods***: the link is in loss of delay synchronization (LODS) state; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group. It must be noted that hysteresis is used for the LODS condition. ***protocolError***: the link is down because of a time-out or because bad values are being received in IMA Control Protocol (ICP) cells. ***remoteFailure***: the far end link is down. ***misconnected***: the link is down because the IMA group has declared, after using its transmit test pattern procedure, that this link is not properly connected. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***unsupportedFrameLength***: the link is down because it is receiving from the far end a frame length which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***unsupportedSymmetry***: the link is down because it is receiving from the far end a group symmetry which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***noIcp***: the link is down because it is not receiving IMA Control Protocol (ICP) cells. This value can occur only if the *protocol* for the IMA group is ***atmForum10***. ***unsupportedVersion***: the link is down because it is receiving from the far end a group version that is not supported by the local IMA group.
Mib	Ima
Values	noFailure interfaceDown lif lods protocolError remoteFailure

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misconnected
unsupportedFrameLength
unsupportedSymmetry
unsupportedVersion
noIcp

Default — No default

ATTRIBUTE Lp Ima Lk remoteDefect (remDef)

Access — Read only

Description — This attribute indicates the IMA remote defect indicator (RDI) currently being received on this link. Possible values are:
noDefect: no defect.
physicalLayerDefect: the interface used by the remote link has a physical layer defect. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
interfaceDown: the physical interface used by the remote link is down.This value can occur only if the *protocol for the IMA group is* ***proprietary.***
lif: the remote link has a loss of IMA frame (LIF) defect.
lods: the remote link has a loss of delay synchronization (LODS) defect; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group.

Mib — Ima

Values — noDefect
interfaceDown
lif
lods
physicalLayerDefect

Default — No default

ATTRIBUTE Lp Ima Lk remoteLid (remLid)

Access — Read only

Description — This attribute indicates the link identifier (LID) used by the remote IMA group on the physical link. A value of 0 will be displayed if the link is not receiving IMA Control Protocol (ICP) cells or if the physical layer is down.

Mib — Ima

Values — Decimal (0..31)

Default — No default

ATTRIBUTE Lp Ima Lk relativeDelay (rel)

Access — Read only

Description — This attribute indicates the latest measured differential delay (rounded up in milliseconds) between this link and the link, in the same IMA group,

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having the least delay. A value of 4294967295 indicates that the relative delay could not be measured. This can be due to physical layer problems or to no IMA Control Protocol (ICP) cells being received on the link.

Mib	Ima
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Lp Ima Lk lastOifCause (oif)

Access	Read only
Description	This attribute indicates the cause of the last out of IMA frame (OIF) anomaly on the link. Possible values are: ***noOif***: no OIF was detected. ***badFrameLength***: an IMA Control Protocol (ICP) cell with an unexpected frame length was received. ***badGid***: an ICP cell with an unexpected group identifier (GID) was received. ***badLid***: an ICP cell with an unexpected link identifier (LID) was received. ***badOffset***: an ICP cell with an unexpected cell offset was received. ***badSequenceNumber***: an ICP cell with an unexpected frame sequence number was received. ***stuffError***: an illegal stuffing sequence was received. ***missingIcp***: an expected ICP cell was not received. ***unexpectedIcp***: an unexpected ICP cell was received. ***erroredIcp***: two consecutive errored ICP cells were received. ***noCells***: no cells are being received on the link. ***idleCell***: an idle cell was received on the link. ***badOamLabel***: an ICP cell with an unexpected oam label was received.
Mib	Ima
Values	noOif badFrameLength badGid badLid badOffset badSequenceNumber stuffError missingIcp unexpectedIcp erroredIcp noCells idleCell badOamLabel
Default	No default

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GROUP Lp Ima Lk Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp Ima Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time (in seconds) for which the *Link* component has been running.
Mib	Ima
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Ima Lk unavailSec (unavail)

Access	Read only
Description	For an IMA group whose *protocol* is ***atmForum10***, this attribute counts the number of unavailable seconds. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) and ends at the start of 10 contiguous seconds with no SES.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk failures (fail)

Access	Read only
Description	This attribute counts the number of failures, during link addition or normal operation, that the link has experienced.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk unusableSec (uus)

Access	Read only
Description	This attribute counts the number of one second intervals during which the near end has been in an unusable state.

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Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk sevErroredSec (ses)

Access	Read only
Description	This attribute counts the number of one second intervals in which at least 30 percent of the IMA Control Protocol (ICP) cells were counted as ICP violations or at least one link defect (physical layer, LIF and LODS defects) was detected. This attribute will not increment during UAS (Unavailable Second) conditions.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk farEndUnusableSec (feUus)

Access	Read only
Description	This attribute counts the number of one second intervals during which the “Tx/Rx Unusable” condition has been received from the far end.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk farEndSevErroredSec (feSes)

Access	Read only
Description	This attribute counts the number of one second intervals containing one or more RDI defects. This attribute will not increment during FEUAS (Far-End Unavailable Second) conditions.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk farEndUnavailSec (feUnavail)

Access	Read only
Description	This attribute counts the number of unavailable seconds at the far end. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) at the far end and ends at the start of 10 contiguous seconds at the far end with no SES.
Mib	Ima

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk icpViolations (iv)

Access	Read only
Description	This attribute counts the number of errored, invalid or missing IMA Control Protocol (ICP) cells during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk txStuffEvents (txStuff)

Access	Read only
Description	This attribute counts the number of Stuff events transmitted during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk rxStuffEvents (rxStuff)

Access	Read only
Description	This attribute counts the number of Stuff events received during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk idleCellSec (idle)

Access	Read only
Description	This attributes counts the number of one second intervals during which one or more idle cells was received. The reception of idle cells is an abnormal condition which could be caused by the remote IMA using the Common Transmit Clock mode with ports whose clock sources are not synchronized.
Mib	Ima
Values	Decimal (0..4294967295)

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Default	No default

GROUP Lp Ima Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp Ima Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Ima Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ima

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Ima Lk usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ima

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Ima Lk availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be

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present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ima
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

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ATTRIBUTE Lp Ima Lk proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Ima
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Ima Lk controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — Ima

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp Ima Lk alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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Mib	Ima
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Ima Lk standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Ima
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Ima Lk unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

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The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Ima

Values: false
true

Default: false

COMPONENT Lp Engineering (Eng)

Scope: Device

Description: *Lp Engineering*
This component has various subcomponents which hold engineering/ control parameters and corresponding indicator statistics for this LP. The subcomponents can be defined for selected services or be common to a number of services.

This component has no data of its own.

Mib: LogicalProcessor

Dyn. Subcomp.: COMPONENT Lp Eng ApplicationResourceControl (AppRc)

Dyn. Subcomp.: COMPONENT Lp Eng DataStream (Ds)
COMPONENT Lp Eng FrameRelaySystem (Frs)
COMPONENT Lp Eng HuntGroupService (Hgs)
COMPONENT Lp Eng AtmResourceControl (Arc)
COMPONENT Lp Eng FrameCoreResourceControl (Fcrc)
COMPONENT Lp Eng AtmPathTrace (PTrace)
COMPONENT Lp Eng ActiveAlarmList (AAList)

Common Verbs: Help
List
Display

COMPONENT Lp Eng ApplicationResourceControl (AppRc)

Scope: Application

Description: *Lp/n Eng ApplicationResourceControl*

This component represents Layer 3 engineering resources for the LP.

Mib: LogicalProcessor

Dyn. Subcomp.: COMPONENT Lp Eng AppRc Ip

Common Verbs: Help
List
Display

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COMPONENT Lp Eng AppRc Ip

Groups	GROUP Lp Eng AppRc Ip Operational (Oper)
Scope	Application
Description	*Lp/n Eng AppRc Ip* This component holds IP operational engineering attributes.
Mib	LogicalProcessor
Common Verbs	Help List Display

GROUP Lp Eng AppRc Ip Operational (Oper)

Properties	Operational
Description	This group contains IP operational engineering attributes for this LogicalProcessor.
Mib	LogicalProcessor

ATTRIBUTE Lp Eng AppRc Ip policerPoolCapacity (polCap)

Access	Read only
Description	This attribute indicates the maximum number of policers for which resources could be allocated on this LP.
Mib	LogicalProcessor
Values	Decimal (0..150)
Default	No default

ATTRIBUTE Lp Eng AppRc Ip policerPoolUsage (polUsage)

Access	Read only
Description	This attribute indicates the number of policers currently configured on this Lp. The value of this attribute can be less than or equal to the value of the attribute *policerPoolCapacity*. The value of this attribute may not reach the *policerPoolCapacity* attribute value if some of the hardware resources identified under the *Lp Eng FrameCoreResourceControl* component are already exhausted.
Mib	LogicalProcessor
Values	Decimal (0..150)

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Default	No default

ATTRIBUTE Lp Eng AppRc Ip meterPoolCapacity (metCap)

Access	Read only
Description	This attribute indicates the maximum number of meters that can be configured on this Lp.
Mib	LogicalProcessor
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Lp Eng AppRc Ip meterPoolUsage (metUsage)

Access	Read only
Description	This attribute indicates the number of meters currently configured on this Lp. The value of this attribute can be less than or equal to the value of the attribute *meterPoolCapacity*. The value of this attribute may not reach the *meterPoolCapacity* attribute value if some of the hardware resources identified under the *Lp Eng FrameCoreResourceControl* component are already exhausted.
Mib	LogicalProcessor
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Lp Eng AppRc Ip policerRequests (polReq)

Access	Read only
Description	This attribute indicates the number of requests to configure policers on this Lp. Corresponding to each policer, there could be one policer request; per protocol port per direction. When the value of this attribute is less than or equal to the value of the attribute *policerPoolCapacity*, resources would be allocated for all the policer configuration requests. When the value of this attribute is greater than the value of the attribute *policerPoolCapacity*, the resources would not be allocated to the excess requests and all the meters under those policers would be disabled.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Lp Eng AppRc Ip meterRequests (metReq)

Access	Read only
Description	This attribute indicates the number of requests to configure meters on this Lp. When the value of this attribute is less than or equal to the value of the attribute *meterPoolCapacity*, resources would be allocated for all meter configuration requests. When the value of this attribute is greater than the value of the attribute *meterPoolCapacity*, the resources would not be allocated to the excess meter requests and the excess meters would be disabled.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng AppRc Ip classificationRuleSetPoolCapacity (ruleCap)

Access	Read only
Description	This attribute indicates the maximum number of rule sets mapped onto this Lp.
Mib	LogicalProcessor
Values	Decimal (0..1023)
Default	No default

ATTRIBUTE Lp Eng AppRc Ip classificationRuleSetPoolUsage (ruleUsage)

Access	Read only
Description	This attribute indicates the total number of rule sets currently mapped onto this Lp. The value of this attribute can be less than or equal to the value of the attribute *classificationRuleSetPoolCapacity*. When the value of this attribute is greater than the value of the attribute *classificationRuleSetPoolCapacity*, then the resources would not be allocated to the excess rule set entries.
Mib	LogicalProcessor
Values	Decimal (0..1023)
Default	No default

ATTRIBUTE Lp Eng AppRc Ip classificationFlowCacheCapacity (cacheCap)

Access	Read only

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Description	This attribute indicates the maximum number of flow cache entries that can be mapped onto this Lp.
Mib	LogicalProcessor
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Lp Eng AppRc Ip classificationFlowCacheUsage (cacheUsage)

Access	Read only
Description	This attribute indicates the number of flow cache entries currently mapped onto this Lp. The value of this attribute can be less than or equal to the value of the attribute *classificationFlowCacheCapacity*. When the value of this attribute is greater than the value of the attribute *classificationFlowCacheCapacity*, then the resources would not be allocated to the excess flow cache entries.
Mib	LogicalProcessor
Values	Decimal (0..65535)
Default	No default

COMPONENT Lp Eng DataStream (Ds)

Instance	accounting (acc) alarm (ala) log debug (deb) scn trap stats rtStats (rts) applicationSpecific (appl)
Groups	GROUP Lp Eng Ds Operational (Oper)
Scope	Device

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Description	*Lp Eng DataStream/<type>* This component holds engineering parameters used by DCS on this LP for a particular DCS stream.
Mib	LogicalProcessor
Opt. Subcomp.	COMPONENT Lp Eng Ds Override (Ov)
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Ds Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the *DataStream* components under *Lp Engineering*.
Mib	LogicalProcessor

ATTRIBUTE Lp Eng Ds agentQueueSize (agentQ)

Access	Read only
Description	This attribute indicates the maximum size of the DCS Agent queue size maximum for a DCS data stream on the LP. It is the maximum size to which the *Agent*'s *currentQueueSize* can grow. When the queue is full and more data is offered to the *Agent*, it will be discarded. The following are the system defaults (in number of records): - alarm: 100 - accounting: 10000 - debug: 0 - log: 50 - scn: 200 - trap: 50 - stats: 0 - rtStats: 0 - applicationSpecific: 200 To override the system defaults, see *Lp Eng Ds Ov*'s *agentQueueSize* attribute.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eng Ds Override (Ov)

Groups	GROUP Lp Eng Ds Ov Provisioned (Prov)

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Scope	Device
Description	*Lp Eng Ds/<type> Override* This component holds provisionable engineering parameters used by DCS on this LP for a particular DCS stream.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Ds Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *DataStream Ov* components under *Lp Engineering*.
Mib	LogicalProcessor

ATTRIBUTE Lp Eng Ds Ov agentQueueSize (agentQ)

Access	Read and write
Description	This attribute specifies the maximum size of the DCS Agent's queue for this data stream on this LP. For more details on the defaults and other information, refer to the parent component's *agentQueueSize* attribute. The size should be set to 0 if absolutely no data is to be accepted from applications. There are threshold alarms based on the value of the Agent's *currentQueueSize* attribute (a Set when the queue becomes 75% full and a Clear after dropping back to 50% full). To properly determine what to set this to, consult the "Nortel Networks Multiservice Switch Engineering Notes and Guidelines". The size should not be 0 for the log stream. A semantic check prevents a user from setting the value of this attribute to 0 for the log stream. For security reasons, only a system administrator is allowed to set the value of this attribute for the log stream.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eng FrameRelaySystem (Frs)

Groups	GROUP Lp Eng Frs Operational (Oper)
Scope	Device

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Description	*Lp Eng FrameRelaySystem* This component holds engineering parameters and statistics used by Frame Relay on this LP.
Mib	FrameRelayEng
Opt. Subcomp.	COMPONENT Lp Eng Frs Override (Ov)
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Frs Operational (Oper)

Properties	Operational
Description	This group contains the Frame Relay default or current engineering parameters and statistics for this LP.
Mib	FrameRelayEng

ATTRIBUTE Lp Eng Frs maxCalls

Access	Read only
Description	This attribute indicates the maximum number of Frame Relay (FR) calls of any type (PVC, SPVC, or SVC) which can be simultaneously “current” on the LP. Note that “current” doesn’t necessarily mean that the call is in data transfer. It minimally means that such a call can subsequently generate accounting records. When the value of *currentCalls* reaches the value of *maxCalls* for FR on this LP, subsequent call attempts are rejected by the FR service.
Mib	FrameRelayEng
Values	Decimal (0..1000000)
Default	1000000

ATTRIBUTE Lp Eng Frs headroomCalls

Access	Read only
Description	This attribute indicates a number which allows a network engineer to do some statistical multiplexing for admitting calls when certain overload conditions are reached. For setting this, refer to the Engineering Guidelines. It depends on conditions such as the expected sustained SVC call setup/clear rates and how conservative one wants to be in certain “error” conditions where many calls are cleared simultaneously.
Mib	FrameRelayEng
Values	Decimal (0..1000000)

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Default	1000000

ATTRIBUTE Lp Eng Frs currentCalls

Access	Read only
Description	This attribute counts the total number of Frame Relay calls (initially just FrUni and FrNni) which are “current”. Note that “current” doesn’t necessarily mean that the call is in data transfer. It minimally means that such a call can subsequently generate accounting records.
Mib	FrameRelayEng
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng Frs callsRefused

Access	Read only
Description	This attribute counts the total number of call connections (including calls from the link as well as calls from the subnet) that have been refused because *currentCalls* has reached the limits, as specified by the engineering formulas for *Frs* on this LP.
Mib	FrameRelayEng
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eng Frs Override (Ov)

Groups	GROUP Lp Eng Frs Ov Provisioned (Prov)
Scope	Device
Description	*Lp Eng Frs Override* This component holds provisionable engineering parameters used by Frame Relay on this LP.
Mib	FrameRelayEng
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Frs Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Frame Relay provisionable engineering parameters for this LP.

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Mib	FrameRelayEng

ATTRIBUTE Lp Eng Frs Ov maxCalls

Access	Read and write
Description	This attribute specifies the maximum number of Frame Relay calls of any type (PVC, SPVC, or SVC) which can be simultaneously “current” on this LP. Note that “current” doesn’t necessarily mean that the call is in data transfer. It minimally means that such a call can subsequently generate accounting records. When the value of *currentCalls* reaches the value of *maxCalls* for FR on this LP, subsequent call attempts are rejected by the FR services.
Mib	FrameRelayEng
Values	Decimal (0..1000000)
Default	1000000

ATTRIBUTE Lp Eng Frs Ov headroomCalls

Access	Read and write
Description	This attribute specifies a number which allows a network engineer to do some statistical multiplexing for admitting calls when certain overload conditions are reached. For setting this, refer to the Engineering Guidelines. It depends on conditions such as the expected sustained SVC call setup/clear rates and how conservative one wants to be in certain “error” conditions where many calls are cleared simultaneously.
Mib	FrameRelayEng
Values	Decimal (0..1000000)
Default	1000000

COMPONENT Lp Eng HuntGroupService (Hgs)

Groups	GROUP Lp Eng Hgs Operational
Scope	Device
Description	*Lp Eng HuntGroupService* The *HuntGroupService* component contains engineering statistics for all hunt groups on the FP.
Mib	HuntGroupEng
Common Verbs	Help List Display Add DELete

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GROUP Lp Eng Hgs Operational

Properties	Operational
Description	The *Operational* group contains attributes for all hunt groups on the LP.
Mib	HuntGroupEng

ATTRIBUTE Lp Eng Hgs huntGroups

Access	Read only
Description	This attribute indicates the number of hunt groups provisioned on the LP.
Mib	HuntGroupEng
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Lp Eng Hgs huntAttempts

Access	Read only
Description	This attribute counts the total number of hunt attempts made by all hunt groups. The count includes both initial and subsequent hunt attempts. Individual hunt groups maintain this counter within the *huntAttempts* attribute of the *Hg/n* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroupEng
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Eng AtmResourceControl (Arc)

Groups	GROUP Lp Eng Arc Operational (Oper)
Scope	Device
Description	*Lp/n Eng AtmResourceControl* This component describes the usage of ATM-specific resources on an FP running ATM services. This component is always dynamically created under any *LP Eng* which supports an FP. The *Lp Eng Arc* component is used to provision and display the main connection capacity in the FPs. On an ATM FP, this main connection space is used exclusively as an ATM-specific resource. For the non-ATM

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FPs, this connection space is used mainly as a channel space for all frame services supported on the FP.

Mib	AtmBase
Opt. Subcomp.	COMPONENT Lp Eng Arc Override (Ov)
Opt. Subcomp.	COMPONENT Lp Eng Arc Cqc (Cqc) COMPONENT Lp Eng Arc Aqm (Aqm) COMPONENT Lp Eng Arc Apc (Apc)
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Arc Operational (Oper)

Properties	Operational
Description	This group describes the usage of ATM-specific resources on a Logical Processor running ATM services. The attributes contained in thsi group represent Queue Controller resource usage for all ATM cards (CQC for CQC-based cards and PQC for ATM IP cards).
Mib	AtmBase

ATTRIBUTE Lp Eng Arc multicastBranchesAvailable (mcastAvail)

Access	Read only
Description	This attribute indicates the total number of available multicast branches for un-spared *AtmIf*s on this FP.
Mib	AtmBase
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Lp Eng Arc multicastBranchesUsage (mcastUsage)

Access	Read only
Description	This attribute indicates the total number of multicast branches that are in use on this FP for un-spared *AtmIf*s.
Mib	AtmBase
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Lp Eng Arc txCellMemoryAllocation (txCell)

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Access	Read only
Description	This attribute indicates the fraction of the transmit memory that is allocated for the transmission of cells on the FP. Cell memory is used for ATM Bearer Services, ATM SVCs and ATM PVCs. The remaining transmit memory is allocated for the transmission of frames. Frame memory is used for trunks, ATM VCC testing and for inter-card communication. This attribute is not available on APC-based and QRD-based FPs. On APC-based and QRD-based FPs, Tx cell memory is completely separated among individual ports.
Mib	AtmBase
Values	Decimal (1..99)
Units	%
Default	No default

ATTRIBUTE Lp Eng Arc txCellMemoryCongestionState (txCellCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit cell memory for this FP. This attribute indicates which *txCellMemoryThresholds* corresponds to the current value of *txCellMemoryUsage*. The congestion state is used to determine if cells of a particular discard priority (DP) are discarded before being queued for transmit. The congestion state of transmit cell memory is indicated by a numeric value ranging from 3 to 0. When transmit cell memory is in congestion state “x”, traffic with DP > “x” is discarded before transmit. Traffic with DP < “x” may be queued for transmit, depending on the congestion level of the connection transmit queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *txCellMemoryUsage* is to the next threshold as displayed in *txCellMemoryThresholds*. For example, CLP1 traffic is queued until the value indicated by *txCellMemoryUsage* equals the value indicated in *txCellMemoryThresholds* 3. At that point, CLP1 traffic is discarded. This attribute is not displayed on APC-based and QRD-based FPs.
Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryAllocation (rxCell)

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Access	Read only
Description	This attribute indicates the fraction of the receive memory which is allocated for the reception of cells on the FP. Cell memory is used for ATM Bearer Services, ATM SVCs, and ATM PVCs. The remaining receive memory is allocated to the reception of frames. Frame memory is used for trunks, ATM VCC testing, and for inter-card communication. This attribute is not available on APC-based and QRD-based FPs.
Mib	AtmBase
Values	Decimal (1..99)
Units	%
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryCongestionState (rxCellCong)

Access	Read only
Description	This attribute indicates the congestion state of the receive cell memory on this FP. This attribute indicates which *rxCellMemoryThresholds* corresponds to the current value of *rxCellMemoryUsage*. The congestion state is used to determine if cells of a particular discard priority (DP) are discarded before being queued for processing on this FP. The congestion state of receive cell memory is indicated by a numeric value ranging from 3 to 0. When receive cell memory is in congestion state “x”, traffic with DP > “x” is discarded before processing. Traffic with DP < “x” may be queued for processing, depending on the congestion level of the processor or bus queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *rxCellMemoryUsage* is to the next threshold as displayed in *rxCellMemoryThresholds*. For example, CLP1 traffic is queued until the value indicated by *rxCellMemoryUsage* equals the value indicated in *rxCellMemoryThresholds* 3. At that point, CLP1 traffic is discarded. This attribute is not displayed on APC-based and QRD-based FPs.
Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Arc protectedConnectionPoolAvailable (protConnAvail)

Access	Read only

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Description	This attribute indicates the number of available connection resources for spared *AtmIfs* (VCC and VPC) that can be used on this FP. One resource is used for VCC and VPC connections.
Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

ATTRIBUTE Lp Eng Arc **protectedConnectionPoolUsage (protConnUsage)**

Access	Read only
Description	This attribute indicates the number of connection resources in use on this FP for spared *AtmIfs* (VCC and VPC).
Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

ATTRIBUTE Lp Eng Arc **protectedMcastBranchesAvailable (protMcastAvail)**

Access	Read only
Description	This attribute indicates the total number of available multicast branches for spared *AtmIfs* on this FP.
Mib	AtmBase
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Lp Eng Arc **protectedMcastBranchesUsage (protMcastUsage)**

Access	Read only
Description	This attribute indicates the total number of multicast branches that are in use on this FP for spared *AtmIfs*.
Mib	AtmBase
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Lp Eng Arc **connectionPoolAvailable (connAvail)**

Access	Read only
Description	This attribute indicates the number of available connection resources for use by un-spared *AtmIfs* (VCC, VPC, and VPT) and for spared *AtmIfs* (VPT only) on this FP.

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One resource is used for VCC and VPC connections, two resources for a basic VPT and three resources for a standard VPT.

Mib AtmBase

Values Decimal (0..64000)

Default No default

ATTRIBUTE Lp Eng Arc connectionPoolUsage (connUsage)

Access Read only

Description This attribute indicates the number of connection resources in use on this FP for un-spared *AtmIfs* (VCC, VPC, and VPT) and for spared *AtmIfs* (VPT only).

Mib AtmBase

Values Decimal (0..64000)

Default No default

ATTRIBUTE Lp Eng Arc txCellMemoryMaxUsage (txCellMaxUsage)

Access Read only

Description On CQC-based ATM FPs, this attribute indicates the maximum usage of transmit cells for all ports on this FP.

On ATM IP FPs, this attribute indicates the maximum usage of transmit cells in the PQC. Queuing of ATM cells for transmit normally occurs in the AQM, that is indicated in the *Lp Eng Arc Aqm/x txCellMemoryUsage* attribute. Transmit cells should only be queued in the PQC under circumstances of extreme transient congestion.

This attribute is not available on APC-based and QRD-based FPs. On APC-based and QRD-based FPs, Tx cell memory is completely separated among individual ports. The maximum Tx cell memory usage is available on a per-APC basis under each individual *Lp Eng Arc Apc/x* component.

This value is reset to the current usage every 15 minutes and when the card is reset.

Mib AtmBase

Values Decimal (0..163839)

Units cells

Default No default

ATTRIBUTE Lp Eng Arc txCellMemoryUsage (txCellUsage)

Access Read only

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Description	This attribute indicates the current number of transmit cells that are in use for this FP. On CQC-based ATM FPs, this number indicates the total transmit cells that are in use for all ports on this FP. On ATM IP FPs, this number indicates the number of transmit cells that are in use in the PQC. Queuing of ATM cells for transmit normally occurs in the AQM, that is indicated in the *Lp Eng Arc Aqm/x txCellMemoryUsage* attribute. Transmit cells should only be queued in the PQC under circumstances of extreme transient congestion. This attribute is not available on APC-based and QRD-based FPs. On APC-based FPs, Tx cell memory is completely separated among individual ports.
Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryMaxUsage (rxCellMaxUsage)

Access	Read only
Description	This attribute indicates the maximum usage of receive cells for all ports on this FP. Receive cell memory is used for storing ATM cells received by this FP which are currently queued either for handling by the processor on this FP or queued for transmitting over the backplane to other FPs. This value is reset to the current usage every 15 minutes and when the card is reset. This attribute is not displayed on APC-based and QRD-based FPs.
Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryUsage (rxCellUsage)

Access	Read only
Description	This attribute indicates the current number of receive cells which are in use for all ports on this FP. Receive cell memory is used for storing ATM cells received by this FP which are currently queued either for handling by the processor on this FP or queued for transmitting over the backplane to other FPs on this switch.

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This attribute is not displayed on APC-based and QRD-based FPs.

Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc perVcQueueAvailable (queueAvail)

Access	Read only
Description	This attribute indicates the number of available per-VC queue resources for use by connections on this FP. Whether or not a connection requires a per-VC queue resource is determined by the connection's ATM service category provisioning. A per-VC queue resource is required when the ATM service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc*** and also when the ATM service category has the *unshapedTransmitQueueing* attribute provisioned with a value of ***perVc***. This attribute is only applicable to ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, and is filtered from the display on all other cards
Mib	AtmBase
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Lp Eng Arc perVcQueueUsage (queueUsage)

Access	Read only
Description	This attribute indicates the number of per-VC queue resources in use by connections on this FP. Whether or not a connection requires a per-VC queue resource is determined by the connection's ATM service category provisioning. A per-VC queue resource is required when the ATM service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc*** and also when the ATM service category has the *unshapedTransmitQueueing* attribute provisioned with a value of ***perVc***. This attribute is only applicable to ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, and is filtered from the display on all other cards.
Mib	AtmBase
Values	Decimal (0..32767)
Default	No default

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ATTRIBUTE Lp Eng Arc txCellMemoryThresholds (txCellThresh)

Access	Read only
Description	This attribute is a vector that indicates the size and three discard thresholds for transmit cell memory for this FP. The transmit cell memory is used for storing ATM cells to be transmitted by this FP. This attribute is not applicable and is not displayed on APC-based and QRD-based FPs. The first value indicates the transmit cell memory size. This is derived based on the total transmit memory capacity of this FP, and the value of the *connectionPoolCapacity* and the *txCellMemoryAllocation* attributes. The current value of *txCellMemoryUsage* together with the vector of values in *txCellMemoryThresholds* determines the *txCellMemoryCongestionState*. The congestion state determines whether cells of a given discard priority (DP) are discarded or queued for transmit. When the *txCellMemoryUsage* attribute is between threshold 0 and threshold 1, the *txCellMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total transmit cell memory size. When the *txCellMemoryUsage* attribute is between threshold 1 and threshold 2, the *txCellMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total transmit cell memory size. When the *txCellMemoryUsage* attribute is between threshold 2 and threshold 3, the *txCellMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total transmit cell memory size. When the *txCellMemoryUsage* attribute is below threshold 3, the *txCellMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.
Mib	AtmBase
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryThresholds (rxCellThresh)

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Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for receive cell memory for this FP. Receive cell memory is used for storing ATM cells received by this FP which are queued either for handling by the processor on this FP or queued for transmitting over the backplane to other FPs on this switch. The first value indicates the receive cell memory size. This is derived based on the total receive memory capacity of this FP, and the value of the *connectionPoolCapacity* and the *rxCellMemoryAllocation* attributes. The current value of *rxCellMemoryUsage* together with the vector of values in *rxCellMemoryThresholds* determines the *rxCellMemoryCongestionState*. The congestion state determines whether cells of a given discard priority (DP) are discarded or queued. When the *rxCellMemoryUsage* attribute is between threshold 0 and threshold 1, the *rxCellMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total receive cell memory size. When the *rxCellMemoryUsage* attribute is between threshold 1 and threshold 2, the *rxCellMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total receive cell memory size. When the *rxCellMemoryUsage* attribute is between threshold 2 and threshold 3, the *rxCellMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total receive cell memory size. When the *rxCellMemoryUsage* attribute is below threshold 3, the *rxCellMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued. This attribute is not displayed on APC-based and QRD-based FPs.
Mib	AtmBase
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..3)
Default	No default

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COMPONENT Lp Eng Arc Override (Ov)

Groups	GROUP Lp Eng Arc Ov Provisioned (Prov)
Scope	Device
Description	*Lp/n Eng Arc Override* This component is used to configure the usage of ATM-specific resources on a Logical Processor running ATM services. The attributes listed represent Queue Controller resource configuration for all ATM cards (CQC for CQC based cards and PQC for ATM IP cards). This component is only permitted under the Logical Processors which are linked to ATM card types.
Mib	AtmBase
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Arc Ov Provisioned (Prov)

Properties	Provisioned
Description	This group specifies the configuration of processor-wide ATM-specific resources on a Logical Processor running ATM services on ATM cards. Note that altering any of these parameters will result in a card reboot.
Mib	AtmBase

ATTRIBUTE Lp Eng Arc Ov multicastBranchesCapacity (mcastCap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of multicast branches that can be established for all un-spared *AtmIfs* on this FP. A multicast branch is used for cell replication on a VCC connection whose *Vcc distributionType* attribute is set to a value of ***pointToMultipoint***. A branch represents one ATM destination for the replicated cells. Increasing the value of this attribute reduces the memory available for the cell and frame memory. This attribute is ignored for the ***1pOC48ChSmIrAtm*** card as it does not support multicast connections. For CQC-based ATM FPs, the maximum value for this attribute is 10752.
Mib	AtmBase

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Values	Decimal (0..16384)
Default	0

ATTRIBUTE Lp Eng Arc Ov txCellMemoryAllocation (txCell)

Access	Read and write
Criticality	Process
Description	This attribute specifies the fraction of the transmit memory which should be allocated to the transmission of cells on an FP. The remaining memory is allocated for the transmission of frames. Frame memory is used for trunks, ATM VCC testing and for inter-card communication. Cell memory is used for ATM Bearer Service, ATM SVCs and ATM PVCs. There is an absolute minimum quantity of frame buffers which is required by ATM software on the FP. If the value of this attribute is smaller than the absolute minimum, the ATM software allocates the minimum required, rather than the actual number requested. The actual percentage of the transmit memory allocated to the transmit cell memory is indicated by the *Arc txCellMemoryAllocation* attribute. A difference between the provisioned and the operational values may exist due to the requirement for a minimum number of frame buffers or rounding during computation within the FP.
Mib	AtmBase
Values	Decimal (1..99)
Units	%
Default	50
Flags	HCA_SUPPORT

ATTRIBUTE Lp Eng Arc Ov rxCellMemoryAllocation (rxCell)

Access	Read and write
Criticality	Process
Description	This attribute specifies the fraction of the receive memory which should be allocated to the reception of cells on an FP. The remaining receive memory is allocated for the reception of frames. Frame memory is used for trunks, ATM VCC testing and for inter-card communication. Cell memory is used for ATM Bearer Service, ATM SVCs and ATM PVCs. There is an absolute minimum quantity of frame buffers which is required by ATM software on the FP. If the value of this attribute is smaller than the absolute minimum, the ATM software allocates the minimum required, rather than the actual number requested. The actual percentage of the receive memory allocated to the receive cell memory is indicated by the *Arc rxCellMemoryAllocation* attribute. A

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	difference between the provisioned and the operational values may exist due to the requirement for a minimum number of frame buffers or rounding during computation within the FP.
Mib	AtmBase
Values	Decimal (1..99)
Units	%
Default	20
Flags	HCA_SUPPORT

ATTRIBUTE Lp Eng Arc Ov protectedMcastBranchesCapacity (protMcastCap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of multicast branches that can be established for all spared *AtmIfs* on this FP. A multicast branch is used for cell replication on a VCC connection whose *Vcc distributionType* attribute is set to a value of ***pointToMultipoint***. A branch represents one ATM destination for the replicated cells. This attribute can only be non-zero if the Logical Processor is associated with a card of one of the following card types: ***4pOC3SmIrAtm***, ***4pOC3MmAtm***, ***12pDS3Atm***, ***12pE3Atm***, or ***1pOC12SmLrAtm***. If any port on the Logical Processor is provisioned in an inter-card *LAPS* configuration, then this attribute must have the same value on both associated Logical Processors. Increasing the value of this attribute reduces the memory available for the cell and frame memory.
Mib	AtmBase
Values	Decimal (0..16384)
Default	0

ATTRIBUTE Lp Eng Arc Ov connectionPoolCapacity (connCap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of un-spared *AtmIf* connections (VCC, VPC, and VPT) that can be established on this FP. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.

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If the Logical Processor is associated with a card of a card type other than one of the following: ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***; the value of the attribute restricts the sum of the (*maxVccs* + *maxVpcs+ (maxVpts * 3) + 1)* for all *AtmIfs* bound to this Logical Processor.

If the Logical Processor is associated with a card of one of the following card types: ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***; the number of available connections are distributed equally across the ports on the FP. The number of connections associated to a particular port limits the size of the VCC space which can be defined by the *ConnMap* of the *AtmIf* linked to the port. If the *ConnMap* component does not exist, its default settings are used for this check. Furthermore, the value of this attribute is restricted based on the number of ports on the card. For one port cards, the minimum is 512, the maximum is 4096 and the value must be divisible by 256. For two port cards, the minimum is 1024, the maximum is 8192 and the value must be divisible by 512. For three port cards, the minimum is 1536, the maximum is 7680 and the value must be divisible by 768.

If the Logical Processor is associated with a card of one of the following card types: ***8pE1Atm*** *or* ***8pDS1Atm***, the maximum value for this attribute is 10752.

If the Logical Processor is associated with a card of one of the following card types: ***32pDS1Msa*** or ***32pE1Msa***, the default value of the attribute is 4096.

If the Logical Processor is associated with a card of one of the following card types: ***1pOC48SmSrPos*** or ***1pOC48SmIrPos***, the maximum value for this attribute is 24000.

If the Logical Processor is associated with a card of one of the following card types: ***32pDS1MsaMtp***, ***32pE1MsaMtp***, ***32pDS1MsaMt, 32pE1MsaMt, 32pDS1MsaStp, 32pE1MsaStp, 32pDS1MsaSt*** *or* ***32pE1MsaSt***; the default value of the attribute is 8192.

The default value of the attribute is 3072 for Logical Processor associated with all other card types.

The maximum number of supported connections per APC is 16000 for ***16pOC3SmIrAtm, 4pOC12SmIrAtm,*** and ***4pOC12SmLrAtm*** cards.

For ATM IP cards, the *Connmap* attributes are set to their default values.

Increasing the value of this attribute reduces the memory available for cell and frame memory.

This attribute must be set to 0 if the *connectionPoolCapacity* attribute of the *Arc Cqc Ov* component is set to non-zero values.

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The actual size of the pool is reflected in the *Lp Eng Arc connnectionPoolAvailable* attribute.

If the Logical Processor is associated with a card of one of the following card types: ***16pOC3SmIrAtm, 4pOC12SmIrAtm***, ***4pOC12SmLrAtm, 1pOC48ChSmIrAtm***, the maximum value for operational attribute *connectionPoolAvailable* is 56000.

To achieve the maximum *connectionPoolAvailable*, the *Lp Eng Fcrc Pqc* Ov *ipRoutesPoolCapacity* must be provisioned to 0. This requires there to be no IP features in the relevant *sw lpt featureList.*

If the total number of connections defined by adding the values of the *protectedConnectionPoolCapacity* and the *connectionPoolCapacity* attributes can not be satisfied, then the *protectedConnectionPoolCapacity* requirements are satisfied before the requirements of the *connectionPoolCapacity*.

Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

ATTRIBUTE Lp Eng Arc Ov protectedConnectionPoolCapacity (protConnCap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of spared *AtmIf* connections (VCC, VPC, and VPT) that can be established on this FP. One connection resource is used for VCC and VPC connections. Three connection resources are used for a VPT connection. This attribute can only be non-zero if the logical Processor is associated with a card of one of the following card types: ***4pOC3SmIrAtm***, ***4pOC3MmAtm***, ***12pDS3Atm***, ***12pE3Atm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pDS3ChAtm***, or ***2pSTM1eCh***. If the Logical Processor is associated with ***2pSTM1eCh***, the default value of the attribute is 3072. The default value of the attribute is 0 for Logical Processor associated with all other card types. If any port on the Logical Processor is provisioned in an inter-card *LAPS* configuration, then this attribute must have the same value on both associated Logical Processors.

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The value of the attribute restricts the sum of the (*maxVccs* + *maxVpcs* + 3**maxVpts* + 1) across all spared *AtmIfs* bound to this Logical Processor.

The maximum number of supported connections per APC is 16000 for ***16pOC3SmIrAtm, 4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards.

Increasing the value of this attribute reduces the memory available for cell and frame memory.

The actual size of the pool is reflected in the *Lp Eng Arc protectedConnectionPoolAvailable* attribute.

If the Logical Processor is associated with a card of one of the following card types: ***16pOC3SmIrAtm, 4pOC12SmIrAtm***, ***4pOC12SmLrAtm, 1pOC48ChSmIrAtm,*** the maximum value for operational attribute *protectedConnectionPoolAvailable* is 56000.

To achieve the maximum *protectedConnectionPoolAvailable*, the *Lp Eng Fcrc Pqc* Ov *ipRoutesPoolCapacity* must be provisioned to 0. This requires there to be no IP features in the relevant *sw lpt featurelist.*

If the total number of connections defined by adding the values of the *protectedConnectionPoolCapacity* and the *connectionPoolCapacity* attributes can not be satisfied, then the *protectedConnectionPoolCapacity* requirements are satisfied before the requirements of the *connectionPoolCapacity*.

Mib	AtmBase
Values	Decimal (0..64000)
Default	No default
Flags	HCA_SUPPORT

COMPONENT Lp Eng Arc Cqc (Cqc)

Groups	GROUP Lp Eng Arc Cqc Operational (Oper)
Scope	Device
Description	*Lp/n Eng Arc Cqc* The *Cqc* component describes the usage of ATM-specific resources on a Logical Processor running ATM services on CQC-based ATM cards. This

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component is always dynamically created under the *LP Eng Arc* which supports a CQC-based FP.

Mib: AtmBase

Subcomponents: COMPONENT Lp Eng Arc Cqc Override (Ov)

Common Verbs: Help, List, Display, Add, DELete

GROUP Lp Eng Arc Cqc Operational (Oper)

Properties: Operational

Description: This group describes the usage of ATM-specific resources on a Logical Processor running ATM services on a CQC-based card.

Mib: AtmBase

ATTRIBUTE Lp Eng Arc Cqc cdvReduction (cdv)

Access: Read only

Criticality: Process

Description: This attribute indicates if the reduction of the maximum Cell Delay Variation (CDV) of shaped transmit traffic is applicable.

When the value of this attribute is ***disabled,*** the CDV value can be determined by the following equation:

CDV <= 2/ASR + 1/LS

where ASR is the Actual Shaping Rate of the connection and LS is the Link Speed of the interface.

When the value of this attribute is ***enabled,*** the CDV relationship changes to the following equation:

CDV <= 1/ASR + 1/LS

Mib: AtmBase

Values: disabled, enabled, cardDependent

Default: No default

COMPONENT Lp Eng Arc Cqc Override (Ov)

Groups: GROUP Lp Eng Arc Cqc Ov Provisioned (Prov)

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Scope	Device
Description	*Lp/n Eng Arc Cqc Override* This component is used to configure the usage of ATM-specific resources on a Logical Processor running ATM services on CQC-based cards. (This component is only permitted under Logical Processors which are linked to ATM card types.)
Mib	AtmBase
Common Verbs	Help List Display

GROUP Lp Eng Arc Cqc Ov Provisioned (Prov)

Properties	Provisioned
Description	This group specifies the configuration of processor-wide ATM-specific resources on a Logical Processor running ATM services. Note that altering any of these parameters will result in a card reboot.
Mib	AtmBase

ATTRIBUTE Lp Eng Arc Cqc Ov perVcQueueInterfaces (perVcIf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of independent ports or IMA components which support shaping and per-VC queuing on this FP. When this attribute is not zero, at most 4 independent ports or 4 *Ima* virtual links are supported, regardless of whether or not traffic shaping is enabled on the associated *AtmIf* components. In this case only independent port instances 0-3 or *Ima* instances 0-3 can be supported on an associated *AtmIf* component. For 2 ports cards, the valid values for this attribute are 0, 1, or 2. For 3 ports cards, the valid values for this attribute are 0, 1, 2 or 3. For 8 ports cards, the valid values for this attribute are 0, 1, 2, or 4.
Mib	AtmBase
Values	Decimal (0..4)
Default	0

ATTRIBUTE Lp Eng Arc Cqc Ov shapingScalingFactor (scFactor)

Access	Read and write
Criticality	Process
Description	This attribute specifies the scaling factor which is to be applied to all shaping rates for this FP. The scaling factor is an inverse factor which is

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applied to the chosen shaping rate to produce an actual shaping rate. For example, if a shaping rate of 25 Mbit/s is used with a scaling factor of 2, the actual shaping rate is 12.5 Mbit/s.

Mib AtmBase

Values Decimal (1.0; 1.4; 2.0; 2.8; 4.0; 5.6)

Default 1.0

ATTRIBUTE Lp Eng Arc Cqc Ov **cdvReduction (cdv)**

Access Read and write

Criticality Process

Description This attribute specifies the reduction of the maximum Cell Delay Variation (CDV) of shaped transmit traffic.

When the value of this attribute is set to ***disabled,*** the CDV value can be determined by the following equation:

CDV <= 2/ASR + 1/LS

where ASR is the Actual Shaping Rate of the connection and LS is the Link Speed of the interface.

When the value of this attribute is set to ***enabled,*** the CDV relationship changes to the following equation:

CDV <= 1/ASR + 1/LS

As can be noted from the equations above, setting this attribute to ***enabled*** can reduce the CDV significantly. CDV reduction may be used to conform to policers which have strict Cell Delay Variance Tolerance (CDVT). However using this function reduces the transmit bandwidth utilization of the following cards: ***3pDS3Atm***, ***3pOC3Atm***, ***2pJ6MAtm.***

When the value is ***cardDependent***, CDV reduction is disabled for card types ***3pDS3Atm***, ***3pOC3Atm***, ***2pJ6MAtm***, ***4pDs1Aal1***, ***4pE1Aal1*** and enabled for all other cards.

Mib AtmBase

Values disabled
enabled
cardDependent

Default cardDependent

ATTRIBUTE Lp Eng Arc Cqc Ov **portCongestionPolicy (portCong)**

Access Read and write

Criticality Process

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Description	This attribute specifies the congestion behavior of all ports on this FP. It applies only to transmit traffic served on the common queues and does not apply to per-VC queues. When the value is ***aggregate***, the enqueue decision of cells or frames to a common queue is based upon the congestion state of the entire port to which the queue belongs. A port is defined to be as congested as the most congested queue amongst all its common queues: the low, medium and high emission priority queues. Thus, for example, if the low priority queue is congested, the high priority queue also experiences discards even though the high priority queue may itself not be congested. Setting this attribute to ***aggregate*** assures that the low priority queues are also serviced in the event of congestion. When the value of this attribute is set to ***individualQueue***, the enqueue decision of cells or frames to a common queue is based solely upon the congestion state of that queue, not the port. This setting assures that the absolute priority of the traffic is taken into account, regardless of whether the lower priority queues are being served.
Mib	AtmBase
Values	aggregate individualQueue
Default	aggregate

ATTRIBUTE Lp Eng Arc Cqc Ov **connectionPoolCapacity (connCap)**

Access	Read and write
Criticality	Process
Description	This attribute is provided for backward compatibility and can only be used if the Logical Processor is associated with a card of one of the following card types: ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***. This attribute can be used when the desired distribution of connections across ports cannot be achieved using the *connectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. This attribute defines the maximum number of connections (VCC, VPC and VPT) that are available on each port. VCC and VPC connections use one resource, whereas a basic *VPT* uses two connection resources. The entries are indexed by port number. This number limits the range of the *ConnMap* entries. If the *Connmap* component does not exist, its default settings are used for this check. Note that the value of this attribute must be evenly divisible by 256, and that port 2 supports at most 2560 connections, not the full 4096. The connection pool for each port must be set to 0 if the

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	connectionPoolCapacity attribute in the *Lp Eng Arc Ov* component is set to a non-zero value.
Mib	AtmBase
Vector of	Decimal (0; 512..4096)
Index	Decimal (0..2)
Default	([3] 0)

COMPONENT Lp Eng Arc Aqm (Aqm)

Instance	Decimal (0..3)
Groups	GROUP Lp Eng Arc Aqm Operational (Oper)
Scope	Device
Description	*Lp/n Eng Arc Aqm/n* The *Aqm* component describes the usage of ATM-specific resources on a Logical Processor running ATM services for a specific ATM Queue Manager. This component is always dynamically created under any *LP Eng* which supports an ATM IP FP. The number of instances depends upon the type of card. For the 4-port OC3 cards, in unprotected mode one *AQM* instance is used per *Sonet* or *SDH* port, where the *AQM* instance is the same as the *Sonet* or *SDH* port instance. For example, Sonet/0 uses AQM/0. In protected mode, ports 0 and 1 work together and ports 2 and 3 work together. If ports 0 and 1 are a protection pair, then AQM/0 is used. AQM/1 is dormant. If ports 2 and 3 are a protection pair, then AQM/2 is used. AQM/3 is dormant. For the ***32pE1MsaMtp, 32pE1MsaMt, 32pDS1MsaMtp, 32pDS1MsaMt, 32pE1MsaStp, 32pE1MsaSt, 32pDS1MsaStp*** *and* ***32pDS1MsaSt*** cards, AQM/0 exists for the *E1* or *DS1* electrical ports and AQM/1 exists for the *Sonet* or *SDH* optical ports. Optical ports 0 and 1 can only both exist, as a protected pair. For the ***32pE1Msa*** *and* ***32pDS1Msa*** cards, only AQM/0 exists for the *E1* or *DS1* electrical ports. For the ***1pOC12SmLrAtm*** card, only AQM/0 exists. Two physical ports exist, but if both ports are provisioned the second may be used for protection only. For ***12pDS3Atm*** and ***12pE3Atm*** cards, an *AQM* instance exists for each set of three ports. As clarification, DS3/0, DS3/1, and DS3/2 use AQM/0.

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DS3/3, DS3/4, and DS3/5 use AQM/1. DS3/6, DS3/7, and DS3/8 use AQM/2. DS3/9, DS3/10, and DS3/11 use AQM/3.

Mib AtmBase

Subcomponents COMPONENT Lp Eng Arc Aqm Override (Ov)

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp Eng Arc Aqm Operational (Oper)

Properties Operational

Description This group describes the usage of ATM-specific resources for a specific AQM or APC on a Logical Processor running ATM services.

Mib AtmBase

ATTRIBUTE Lp Eng Arc Aqm connectionPoolAvailable (connPoolAvail)

Access Read only

Description This attribute indicates the number of connection resources available (VCC, VPC and VPT) that can be configured on the AQM or APC instance of the Logical Processor.

One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.

Mib AtmBase

Values Decimal (0..16000)

Default No default

ATTRIBUTE Lp Eng Arc Aqm connectionPoolUsage (connPoolUsage)

Access Read only

Description This attribute indicates the total number of configured VCCs and VPCs in *AtmIf components* associated with the AQM or APC instance of the Logical Processor.

One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.

Mib AtmBase

Values Decimal (0..16000)

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Default	No default

ATTRIBUTE Lp Eng Arc Aqm **txCellMemoryCongestionState (txCellCong)**

Access	Read only
Description	This attribute indicates the congestion state of the transmit cell memory for the ATM Queue Manager (AQM) ASIC on this FP. This attribute indicates which *txCellMemoryThresholds* corresponds to the current value of *txCellMemoryUsage*. The congestion state is used to determine if cells of a particular discard priority (DP) are discarded before being queued for transmit. The congestion state of transmit cell memory is indicated by a numeric value ranging from 3 to 0. When transmit cell memory is in congestion state “x”, traffic with DP > “x” is discarded before transmit. Traffic with DP < “x” may be queued for transmit, depending on the congestion level of the connection transmit queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *txCellMemoryUsage* is to the next threshold as displayed in *txCellMemoryThresholds*. For example, CLP1 traffic is queued until the value indicated by *txCellMemoryUsage* equals the value indicated in *txCellMemoryThresholds* 3. At that point, CLP1 traffic is discarded. This attribute is not available on APC-based and QRD-based FPs since the txCellMemoryUsage attribute is not available.
Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Arc Aqm **txCellMemoryMaxUsage (txCellMaxUsage)**

Access	Read only
Description	This attribute indicates the maximum number which has recently occurred for the *txCellMemoryUsage* attribute. Transmit cell memory is used for storing ATM cells to be transmitted by connections for the ATM Queue Manager (AQM) or APC ASIC on this FP. It includes all cells in all connections at all service categories. This attribute is not available on APC-based and QRD-based FPs. This attribute is reset to the current usage every 15 minutes and when the card is reset.
Mib	AtmBase
Values	Decimal (0..163839)
Units	cells

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Default	No default

ATTRIBUTE Lp Eng Arc Aqm txCellMemoryUsage (txCellUsage)

Access	Read only
Description	This attribute indicates the current number of transmit cells which are in use on this FP. Transmit cell memory is used for storing ATM cells to be transmitted by connections for the ATM Queue Manager (AQM) ASIC on this FP. It includes all cells in all connections at all service categories. This attribute is not available on APC-based and QRD-based FPs. On APC-based FPs, Tx cell memory per APC device is completely partitioned among emission priorities (and also among the ports per-APC). The usage of cell memory per APC device does not adequately reflect the usage of cell memory for individual emission priorities.
Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc Aqm txCellMemoryThresholds (txCellThresh)

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for transmit cell memory for the ATM Queue Manager (AQM) ASIC on this FP. Transmit cell memory is used for storing ATM cells to be transmitted by connections. It includes all cells in all connections at all service categories. The first value indicates the transmit cell memory size. It is the amount of transmit memory which is available for cell queuing, after the amount of memory specified by *connectionPoolCapacity*. The current value of *txCellMemoryUsage* together with the vector of values in *txCellMemoryThresholds* determines the *txCellMemoryCongestionState*. The congestion state determines whether cells of a given discard priority (DP) are discarded or queued for transmit. When the *txCellMemoryUsage* attribute is between threshold 0 and threshold 1, the *txCellMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total transmit cell memory size. When the *txCellMemoryUsage* attribute is between threshold 1 and threshold 2, the *txCellMemoryCongestionState* indicates the value 1. In

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congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is between threshold 2 and threshold 3, the *txCellMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is below threshold 3, the *txCellMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

This attribute is not available on APC-based and QRD-based FPs since the *txCellMemoryUsage* attribute is not available.

Mib	AtmBase
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..3)
Default	No default

COMPONENT Lp Eng Arc Aqm Override (Ov)

Groups	GROUP Lp Eng Arc Aqm Ov Provisioned (Prov)
Scope	Device
Description	*Lp/n Eng Arc Aqm/n Override* The *Aqm Override* component is used to configure the usage of ATM-specific resources for a specific AQM on a Logical Processor running ATM services. (This component is only permitted under Logical Processors which are linked to AQM-based FPs.)
Mib	AtmBase
Common Verbs	Help List Display

GROUP Lp Eng Arc Aqm Ov Provisioned (Prov)

Properties	Provisioned
Description	This group specifies the configuration of processor-wide ATM-specific resources on a Logical Processor running ATM services on AQM-based cards. Note that altering any of these parameters results in a card reboot.
Mib	AtmBase

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ATTRIBUTE Lp Eng Arc Aqm Ov **connectionPoolCapacity (connCap)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections (VCC, VPC, and VPT) that can be configured on the AQM instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT. The value of this attribute restricts the sum of the (maxVccs + maxVpcs + (maxVpts * 3) + 1) across all *AtmIf components* bound to this AQM instance. Note that 3 connections are used for each standard VPT and 2 for each basic VPT. The value of this attribute should be less than or equal to the sum of the *connectionPoolCapacity* plus the *protectedConnectionPoolCapacity* attributes of the *Arc* component. The default value ***derivedFromArc*** is obtained using the following equation: *(connectionPoolCapacity + protectedConnectionPoolCapacity)/* number of AQM components on the FP.)
Mib	AtmBase
Values	Decimal (1..16000) derivedFromArc
Default	derivedFromArc
Flags	HCA_SUPPORT

ATTRIBUTE Lp Eng Arc Aqm Ov **highPriorityEpdOffset (hiEpdO)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the high priority Early Packet Discard (EPD) offset for connection queues. On ATM IP FPs a given connection queue is associated with one of eight emission priorities (EP). These include six unshaped EPs, one exclusive VBR shaper EP and one ABR/VBR shaper EP. This attribute specifies the EPD offset for the exclusive VBR shaper EP and the first four (higher priority) unshaped EPs. This offset is used to derive a connection EPD threshold for a given Congestion Control (CC) level by subtracting the offset from the All Packet Discard (APD) threshold at the same CC level. The APD thresholds are themselves derived from the transmit queue limit. The EPD threshold only applies to a connection if the Packet-Wise Discard

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feature is requested. The Packet-Wise Discard feature can be enabled only if the transmit queue limit is at least 5.71 times the EPD offset. This ensures that the derived EPD threshold will never be less than 17.5% of the transmit queue limit. If this condition is not satisfied, the Packet-Wise Discard feature for the connection is automatically disabled.

Due to the above constraint, if the operator wishes to decrease the transmit queue limit and still have Packet-Wise Discard feature enabled on the connection then this offset must be set to a lower value that meets the above requirement.

Due to hardware granularity the actual value of the EPD offset may not match exactly the value provisioned. The actual value is displayed under the ATM Connection Administrator service category subcomponents on ATM IP FPs.

This attribute does not apply to CQC FPs.

Mib	AtmBase
Values	Decimal (5..1024)
Units	cells
Default	28
Flags	HCA_SUPPORT

ATTRIBUTE Lp Eng Arc Aqm Ov **lowPriorityEpdOffset (loEpdO)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the low priority Early Packet Discard (EPD) offset for connection queues. On ATM IP FPs a given connection queue is associated with one of eight emission priorities (EP). These include six unshaped EPs, one exclusive VBR shaper EP and one ABR/VBR shaper EP. This attribute specifies the EPD offset for the exclusive ABR/VBR shaper EP and the last two (lower priority) unshaped EPs. This offset is used to derive a connection EPD threshold for a given Congestion Control (CC) level by subtracting the offset from the All Packet Discard (APD) threshold at the same CC level. The APD thresholds are themselves derived from the transmit queue limit. The EPD threshold only applies to a connection if the Packet-Wise Discard feature is requested. The Packet-Wise Discard feature can be enabled only if the transmit queue limit is at least 5.71 times the EPD offset. This ensures that the derived EPD threshold will never be less than 17.5% of the transmit queue limit. If this condition is not satisfied, the Packet-Wise Discard feature for the connection is automatically disabled. Due to the above constraint, if the operator wishes to decrease the

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transmit queue limit and still have the Packet-Wise Discard feature enabled on the connection then this offset must be set to a lower value that meets the above requirement.

Due to hardware granularity the actual value of the EPD offset may not match exactly the value provisioned. The actual value is displayed under the ATM Connection Administrator service category subcomponents on ATM IP FPs.

This attribute does not apply to CQC FPs.

Mib	AtmBase
Values	Decimal (5..1024)
Units	cells
Default	200
Flags	HCA_SUPPORT

ATTRIBUTE Lp Eng Arc Aqm Ov **portCongestionPolicy (portCong)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the congestion behavior of all ports on this FP. It applies only to transmit traffic and does not apply to the CBR service category. When the value is ***aggregate***, the enqueue decision of cells or frames to a queue is based upon the congestion state of the entire port to which the queue belongs. A port is defined to be as congested as the most congested queue amongst all its queues. Thus, for example, if an nrt-VBR queue is congested, the rt-VBR queue also experiences discards even though the rt-VBR queue may itself not be congested. Setting this attribute to ***aggregate*** assures that the low priority queues are also serviced in the event of congestion. If this attribute is set to ***aggregate*** then rt-VBR must not be configured to do common queuing and its emission priority should be set to a number numerically smaller than or equal to 3. Another impact of setting this attribute to ***aggregate*** is that the per connection queue limits for nrt-VBR and UBR connections will be increased to the link pool size and their discard thresholds will be modified to be aligned with the free list discard thresholds. When the value of this attribute is set to ***individualQueue***, the enqueue decision of cells or frames to a queue is based solely upon the congestion state of that queue, not the port. This setting assures that the absolute priority of the traffic is taken into account, regardless of whether the lower priority queues are being served. On 3pOC3SmAtm2 and 3pOC3MmAtm2 cards, if more than one override component exists, they must have the same setting for this attribute. Otherwise, setting the attribute under one override component applies to the entire card.

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Mib	AtmBase
Values	aggregate individualQueue
Default	individualQueue
Flags	HCA_SUPPORT

COMPONENT Lp Eng Arc Apc (Apc)

Instance	Decimal (0..3)
Groups	GROUP Lp Eng Arc Apc Operational (Oper)
Scope	Device
Description	*Lp/n Eng Arc Apc/n* The *Apc* component is similar to the Aqm component. Apc has an additional provisional attribute, Lp/n Eng Arc Apc/n Ov bufferLimitPerEP used to specify the maximum buffer spaces allowed to the emission priorities on an Apc instance.
Mib	AtmBase
Subcomponents	COMPONENT Lp Eng Arc Apc Override (Ov)
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Arc Apc Operational (Oper)

Properties	Operational
Description	This group describes the usage of ATM-specific resources for a specific AQM or APC on a Logical Processor running ATM services.
Mib	AtmBase

ATTRIBUTE Lp Eng Arc Apc connectionPoolAvailable (connPoolAvail)

Access	Read only
Description	This attribute indicates the number of connection resources available (VCC, VPC and VPT) that can be configured on the AQM or APC instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.
Mib	AtmBase
Values	Decimal (0..16000)

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Default	No default

ATTRIBUTE Lp Eng Arc Apc **connectionPoolUsage (connPoolUsage)**

Access	Read only
Description	This attribute indicates the total number of configured VCCs and VPCs in *AtmIf components* associated with the AQM or APC instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.
Mib	AtmBase
Values	Decimal (0..16000)
Default	No default

ATTRIBUTE Lp Eng Arc Apc **txCellMemoryCongestionState (txCellCong)**

Access	Read only
Description	This attribute indicates the congestion state of the transmit cell memory for the ATM Queue Manager (AQM) ASIC on this FP. This attribute indicates which *txCellMemoryThresholds* corresponds to the current value of *txCellMemoryUsage*. The congestion state is used to determine if cells of a particular discard priority (DP) are discarded before being queued for transmit. The congestion state of transmit cell memory is indicated by a numeric value ranging from 3 to 0. When transmit cell memory is in congestion state “x”, traffic with DP > “x” is discarded before transmit. Traffic with DP < “x” may be queued for transmit, depending on the congestion level of the connection transmit queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *txCellMemoryUsage* is to the next threshold as displayed in *txCellMemoryThresholds*. For example, CLP1 traffic is queued until the value indicated by *txCellMemoryUsage* equals the value indicated in *txCellMemoryThresholds* 3. At that point, CLP1 traffic is discarded. This attribute is not available on APC-based and QRD-based FPs since the txCellMemoryUsage attribute is not available.
Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Arc Apc **txCellMemoryMaxUsage (txCellMaxUsage)**

Access	Read only

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Description	This attribute indicates the maximum number which has recently occurred for the *txCellMemoryUsage* attribute. Transmit cell memory is used for storing ATM cells to be transmitted by connections for the ATM Queue Manager (AQM) or APC ASIC on this FP. It includes all cells in all connections at all service categories. This attribute is not available on APC-based and QRD-based FPs. This attribute is reset to the current usage every 15 minutes and when the card is reset.
Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc Apc **txCellMemoryUsage (txCellUsage)**

Access	Read only
Description	This attribute indicates the current number of transmit cells which are in use on this FP. Transmit cell memory is used for storing ATM cells to be transmitted by connections for the ATM Queue Manager (AQM) ASIC on this FP. It includes all cells in all connections at all service categories. This attribute is not available on APC-based and QRD-based FPs. On APC-based FPs, Tx cell memory per APC device is completely partitioned among emission priorities (and also among the ports per-APC). The usage of cell memory per APC device does not adequately reflect the usage of cell memory for individual emission priorities.
Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc Apc **txCellMemoryThresholds (txCellThresh)**

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for transmit cell memory for the ATM Queue Manager (AQM) ASIC on this FP. Transmit cell memory is used for storing ATM cells to be transmitted by connections. It includes all cells in all connections at all service categories. The first value indicates the transmit cell memory size. It is the amount of

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transmit memory which is available for cell queuing, after the amount of memory specified by *connectionPoolCapacity*.

The current value of *txCellMemoryUsage* together with the vector of values in *txCellMemoryThresholds* determines the *txCellMemoryCongestionState*. The congestion state determines whether cells of a given discard priority (DP) are discarded or queued for transmit.

When the *txCellMemoryUsage* attribute is between threshold 0 and threshold 1, the *txCellMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is between threshold 1 and threshold 2, the *txCellMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is between threshold 2 and threshold 3, the *txCellMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is below threshold 3, the *txCellMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

This attribute is not available on APC-based and QRD-based FPs since the *txCellMemoryUsage* attribute is not available.

Mib	AtmBase
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..3)
Default	No default

COMPONENT Lp Eng Arc Apc Override (Ov)

Groups	GROUP Lp Eng Arc Apc Ov Provisioned (Prov)
Scope	Device
Description	*Lp/n Eng Arc Apc/n Override* The *Apc Override* component is used to configure the usage of ATM-specific resources for a specific APC on a Logical Processor running ATM

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services. (This component is only permitted under Logical Processors which are linked to APC-based FPs)

Mib	AtmBase
Common Verbs	Help List Display

GROUP Lp Eng Arc Apc Ov **Provisioned (Prov)**

Properties	Provisioned
Description	This group specifies the configuration of processor-wide ATM-specific resources on a Logical Processor running ATM services on APC-based cards. Note that altering any of these parameters results in a card reboot.
Mib	AtmBase

ATTRIBUTE Lp Eng Arc Apc Ov **connectionPoolCapacity (connCap)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections (VCC, VPC, and VPT) that can be configured on the APC instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT. The value of this attribute restricts the sum of the (maxVccs + maxVpcs + (maxVpts * 3) + 1) across all *AtmIf* components bound to this APC instance. Note that three connections are used for each standard VPT and two for each basic VPT. The value of this attribute should be less than or equal to the sum of the *connectionPoolCapacity* plus the *protectedConnectionPoolCapacity* of the *Arc* component. The default value ***derivedFromArc*** is obtained using the following equation: *(connectionPoolCapacity* + p*rotectedConnectionPoolCapacity)*/ number of APC components on the FP.
Mib	AtmBase
Values	Decimal (1..16000) derivedFromArc
Default	derivedFromArc
Flags	HCA_SUPPORT

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ATTRIBUTE Lp Eng Arc Apc Ov **highPriorityEpdOffset (hiEpdO)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the high priority Early Packet Discard (EPD) offset for connection queues. On ATM IP FPs a given connection queue is associated with one of eight emission priorities (EP). These include six unshaped EPs, one exclusive VBR shaper EP and one ABR/VBR shaper EP. This attribute specifies the EPD offset for the exclusive VBR shaper EP and the first four (higher priority) unshaped EPs. This offset is used to derive a connection EPD threshold for a given Congestion Control (CC) level by subtracting the offset from the All Packet Discard (APD) threshold at the same CC level. The APD thresholds are themselves derived from the transmit queue limit. The EPD threshold only applies to a connection if the Packet-Wise Discard feature is requested. The Packet-Wise Discard feature can be enabled only if the transmit queue limit is at least 5.71 times the EPD offset. This ensures that the derived EPD threshold will never be less than 17.5% of the transmit queue limit. If this condition is not satisfied, the Packet-Wise Discard feature for the connection is automatically disabled. Due to the above constraint, if the operator wishes to decrease the transmit queue limit and still have the Packet-Wise Discard feature enabled on the connection then this offset must be set to a lower value that meets the above requirement. Due to hardware granularity the actual value of the EPD offset may not match exactly the value provisioned. The actual value is displayed under the ATM Connection Administrator service category subcomponents on ATM IP FPs. This attribute does not apply to CQC FPs.
Mib	AtmBase
Values	Decimal (5..1024)
Units	cells
Default	28
Flags	HCA_SUPPORT

ATTRIBUTE Lp Eng Arc Apc Ov **lowPriorityEpdOffset (loEpdO)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the low priority Early Packet Discard (EPD) offset for connection queues. On ATM IP FPs a given connection queue is

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associated with one of eight emission priorities (EP). These include six unshaped EPs, one exclusive VBR shaper EP and one ABR/VBR shaper EP. This attribute specifies the EPD offset for the exclusive ABR/VBR shaper EP and the last two (lower priority) unshaped EPs.

This offset is used to derive a connection EPD threshold for a given Congestion Control (CC) level by subtracting the offset from the All Packet Discard (APD) threshold at the same CC level. The APD thresholds are themselves derived from the transmit queue limit.

The EPD threshold only applies to a connection if the Packet-Wise Discard feature is requested. The Packet-Wise Discard feature can be enabled only if the transmit queue limit is at least 5.71 times the EPD offset. This ensures that the derived EPD threshold will never be less than 17.5% of the transmit queue limit. If this condition is not satisfied, the Packet-Wise Discard feature for the connection is automatically disabled.

Due to the above constraint, if the operator wishes to decrease the transmit queue limit and still have the Packet-Wise Discard feature enabled on the connection then this offset must be set to a lower value that meets the above requirement.

Due to hardware granularity the actual value of the EPD offset may not match exactly the value provisioned. The actual value is displayed under the ATM Connection Administrator service category subcomponents on ATM IP FPs.

This attribute does not apply to CQC FPs.

Mib	AtmBase
Values	Decimal (5..1024)
Units	cells
Default	200
Flags	HCA_SUPPORT

ATTRIBUTE Lp Eng Arc Apc Ov portCongestionPolicy (portCong)

Access	Read and write
Criticality	Process
Description	This attribute specifies the congestion behavior of all ports on this FP. It applies only to transmit traffic and does not apply to the CBR service category. When the value is ***aggregate***, the enqueue decision of cells or frames to a queue is based upon the congestion state of the entire port to which the queue belongs. A port is defined to be as congested as the most congested queue amongst all its queues. Thus, for example, if an nrt-VBR queue is congested, the rt-VBR queue also experiences discards

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even though the rt-VBR queue may itself not be congested. Setting this attribute to ***aggregate*** assures that the low priority queues are also serviced in the event of congestion. If this attribute is set to ***aggregate*** then rt-VBR must not be configured to do common queuing and its emission priority should be set to a number numerically smaller than or equal to 3. Another impact of setting this attribute to ***aggregate*** is that the per connection queue limits for nrt-VBR and UBR connections will be increased to the link pool size and their discard thresholds will be modified to be aligned with the free list discard thresholds.

When the value of this attribute is set to ***individualQueue***, the enqueue decision of cells or frames to a queue is based solely upon the congestion state of that queue, not the port. This setting assures that the absolute priority of the traffic is taken into account, regardless of whether the lower priority queues are being served. On 3pOC3SmAtm2 and 3pOC3MmAtm2 cards, if more than one override component exists, they must have the same setting for this attribute. Otherwise, setting the attribute under one override component applies to the entire card.

Mib	AtmBase
Values	aggregate individualQueue
Default	individualQueue
Flags	HCA_SUPPORT

ATTRIBUTE Lp Eng Arc Apc Ov **bufferLimitPerEP (buffPerEP)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum buffer size allowed for each of the eight emission priorities of traffic towards the link. A class buffer pool limit is designed to prevent one emission priority from consuming all the available buffer space. The eight *bufferLimitPerEP* values represent maximum buffer size per emission priority, in number of cells. To guarantee proper buffer isolation among emission priorities, the sum of *bufferLimitPerEP* values for all emission priorities must not exceed the total buffer space available, which is 261118 cells. The default values are approximately 15%, 0%, 15%, 50%, 15%, 0%, 0%, and 5% of total available buffer space for emission priorities 0 through 7 respectively. Note: For APC based cards, the minimum value of *bufferLimitPerEP* for EP0 is 32. This limitation for EP 0 is because it uses different scheduler.
Mib	AtmBase
Vector of	Decimal (0..261118)

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Units	%
Index	Decimal (0..7)
Default	(39168, 0, 39168, 130559, 39168, 0, 0, 13055)
Flags	HCA_SUPPORT

COMPONENT Lp Eng FrameCoreResourceControl (Fcrc)

Groups	GROUP Lp Eng Fcrc Operational (Oper)
Scope	Device
Description	*Lp/n Eng FrameCoreResourceControl* This component is used to view the usage of frame specific resources on a *LogicalProcessor* running Frame based services. The *FrameCoreResourceControl* provisioned component is not supported on the 32 port Multi-Service Access Functional Processor.
Mib	AtmBase
Opt. Subcomp.	COMPONENT Lp Eng Fcrc Override (Ov)
Opt. Subcomp.	COMPONENT Lp Eng Fcrc Pqc (Pqc)
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Fcrc Operational (Oper)

Properties	Operational
Description	This group indicates the configuration of processor-wide frame specific resources on a *LogicalProcessor*.
Mib	AtmBase

ATTRIBUTE Lp Eng Fcrc subConnectionPoolAvailable (subConnAvail)

Access	Read only
Description	This attribute indicates the number of sub-connections available for the *LogicalProcessor*. A sub-connection is used for interworking the ATM services with the frame oriented services such as Frame Relay and Path Oriented Routing System (PORS). When a frame is received at a sub-connection, the frame header is modified to be compatible with the service it is to be forwarded to. This pool is used for connection oriented services only. Each of the following services uses one or more sub-connections from this pool:

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Any Frame Relay DLCI (provisioned [permanent] or signalled (SVC))[FRUNI, FRNNI, FRATM, BNX, IP Optimized]
Any PORS LCN
Any MPLS connection

Note: When the value of this attribute reaches zero, no more connections are accepted for any of the services which utilize this pool. To increase the size of this pool, use the *Lp Eng Fcrc Ov subConnectionPoolCapacity* attribute.

Mib — AtmBase

Values — Decimal (0..49152)

Default — No default

ATTRIBUTE Lp Eng Fcrc subConnectionPoolUsage (subConnUsage)

Access — Read only

Description — This attribute indicates the number of sub-connections being utilized by the *LogicalProcessor*. It is only applicable to PQC-based ATM IP cards.

A sub-connection is used for interworking the ATM services with the frame oriented services such as Frame Relay and Path Oriented Routing System (PORS). When a frame is received at a sub-connection, the frame header is modified to be compatible with the service it is to be forwarded to.

This pool is used for connection oriented services only. Each of the following services uses one or more sub-connections from this pool:
Any Frame Relay DLCI (provisioned [permanent] or signalled (SVC))[FRUNI, FRNNI, FRATM, BNX, IP Optimized]
Any PORS LCN
Any MPLS connection

Mib — AtmBase

Values — Decimal (0..49152)

Default — No default

ATTRIBUTE Lp Eng Fcrc lnnConnectionPoolAvailable (lnnConnAvail)

Access — Read only

Description — This attribute indicates the number of resource records available for the connections which utilize Logical Network Number (LNN) on the *LogicalProcessor*.

A logical network is a subset of nodes together with a subset of trunks that interconnect those nodes. It carries the traffic for a defined set of network protocols. An LNN is used to identify a logical network. The connectionless services that utilize the logical networks require some processing at the intermediate nodes. This pool is allocated at the intermediate nodes to sustain these connectionless services.

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If the *McsMgr DprsMcsEpG/n Ep/n EpD transportConnectionPreference* attribute is set to ***atmOnly***, each instance of the *McsMgr DprsMcsEpG/n Ep/n* component uses one resource record from this pool, otherwise it does not use this pool.

When the value of this attribute reaches zero, no more connections are accepted for any of the services which utilize this pool. To increase the size of this pool, use the *Fcrc Ov InnConnectionPoolCapacity* attribute.

Mib — AtmBase

Values — Decimal (0..2048)

Default — No default

ATTRIBUTE Lp Eng Fcrc InnConnectionPoolUsage (InnConnUsage)

Access — Read only

Description — This attribute indicates the number of resource records being utilized for the connections which use Logical Network Number (LNN) on the *LogicalProcessor*. It is only applicable to PQC-based ATM IP cards.

A logical network is a subset of nodes together with a subset of trunks that interconnect those nodes. It carries the traffic for a defined set of network protocols. An LNN is used to identify a logical network. The connectionless services that utilize the logical networks require some processing at the intermediate nodes. This pool is applied at the intermediate nodes to sustain these connectionless services.

If the *McsMgr DprsMcsEpG/n Ep/n EpD transportConnectionPreference* attribute is set to ***atmOnly***, each instance of the *McsMgr DprsMcsEpG/n Ep/n* component uses one resource record from this pool, otherwise it does not use this pool.

Mib — AtmBase

Values — Decimal (0..2048)

Default — No default

ATTRIBUTE Lp Eng Fcrc txFrameMemoryCongestionState (txFrCong)

Access — Read only

Description — This attribute indicates the congestion state of the transmit frame memory for this FP.

This attribute indicates which *txFrameMemoryThresholds* corresponds to the current value of *txFrameMemoryUsage*. The congestion state is used to determine if frames of a particular discard priority (DP) are discarded before being queued for transmit.

The congestion state of transmit frame memory is indicated by a numeric

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value ranging from 3 to 0. When transmit frame memory is in congestion state “x”, traffic with DP > “x” is discarded before transmit. Traffic with DP < “x” may be queued for transmit, depending on the congestion level of the transmit queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *txFrameMemoryUsage* is to the next threshold as displayed in *txFrameMemoryThresholds*. For example, DP=3 traffic is queued until the value indicated by *txFrameMemoryUsage* equals the value indicated in *txFrameMemoryThresholds* 3. At that point, DP=3 traffic is discarded.

Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Fcrc rxFrameMemoryCongestionState (rxFrCong)

Access	Read only
Description	This attribute indicates the congestion state of the receive frame memory for this FP. This attribute indicates which *rxFrameMemoryThresholds* corresponds to the current value of *rxFrameMemoryUsage*. The congestion state is used to determine if frames of a particular discard priority (DP) are discarded before being queued for processing on this FP. The congestion state of receive frame memory is indicated by a numeric value ranging from 3 to 0. When receive frame memory is in congestion state “x”, traffic with DP > “x” is discarded before processing. Traffic with DP < “x” may be queued for processing, depending on the congestion level of the processor or bus queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *rxFrameMemoryUsage* is to the next threshold as displayed in *rxFrameMemoryThresholds*. For example, DP=3 traffic is queued until the value indicated by *rxFrameMemoryUsage* equals the value indicated in *rxFrameMemoryThresholds* 3. At that point, DP=3 traffic is discarded.
Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Fcrc txFrameMemoryMaxUsage (txFrMaxUsage)

Access	Read only
Description	This attribute indicates the maximum number which has recently occurred for the *txFrameMemoryUsage* attribute. On CQC-based ATM FPs, this number indicates the maximum usage of transmit frames for all ports on this FP.

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	On ATM IP FPs, this number indicates the maximum usage of transmit frames in the PQC ASIC. Queuing of frames for transmit only occurs in the PQC. This value is reset to the current usage every 15 minutes and when the card is reset.
Mib	AtmBase
Values	Decimal (0..32767)
Units	frameBlocks
Default	No default

ATTRIBUTE Lp Eng Fcrc txFrameMemoryUsage (txFrUsage)

Access	Read only
Description	This attribute indicates the current number of transmit frames which are in use for this FP. On CQC-based ATM FPs, this number indicates the total transmit frames which are in use for all ports on this FP. On ATM IP FPs, this number indicates the number of transmit frames which are in use in the PQC ASIC. Queuing of frames for transmit only occurs in the PQC.
Mib	AtmBase
Values	Decimal (0..32767)
Units	frameBlocks
Default	No default

ATTRIBUTE Lp Eng Fcrc rxFrameMemoryMaxUsage (rxFrMaxUsage)

Access	Read only
Description	This attribute indicates the maximum number which has recently occurred for the *rxFrameMemorySize* attribute. On CQC-based ATM FPs, this number indicates the maximum usage of receive frames for all ports on this FP. On ATM IP FPs, this number indicates the maximum usage of received frames in the PQC ASIC. Queuing of received frames only occurs in the PQC. This value is reset to the current usage every 15 minutes and when the card is reset.
Mib	AtmBase

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Values	Decimal (0..32767)
Units	frameBlocks
Default	No default

ATTRIBUTE Lp Eng Fcrc rxFrameMemoryUsage (rxFrUsage)

Access	Read only
Description	This attribute indicates the current number of receive frames which are in use for this FP. On CQC-based ATM FPs, this number indicates the total receive frames which are in use for all ports on this FP. On ATM IP FPs, this number indicates the number of receive frames which are in use in the PQC ASIC. Queuing of received frames only occurs in the PQC.
Mib	AtmBase
Values	Decimal (0..32767)
Units	frameBlocks
Default	No default

ATTRIBUTE Lp Eng Fcrc txFrameMemoryThresholds (txFrThresh)

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for transmit frame memory for this FP. The transmit frame memory is used for storing frames to be transmitted by this FP. The first value indicates the transmit frame memory size. This is derived based on the total transmit memory capacity of this FP, and the number of connections specified. The current value of *txFrameMemoryUsage* together with the vector of values in *txFrameMemoryThresholds* determines the *txFrameMemoryCongestionState*. The congestion state determines whether frames of a given discard priority (DP) are discarded or queued for transmit. When the *txFrameMemoryUsage* attribute is between threshold 0 and threshold 1, the *txFrameMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total transmit frame memory size. When the *txFrameMemoryUsage* attribute is between threshold 1 and threshold 2, the *txFrameMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set

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approximately at 85 percent of threshold 0, the total transmit frame memory size.

When the *txFrameMemoryUsage* attribute is between threshold 2 and threshold 3, the *txFrameMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total transmit frame memory size.

When the *txFrameMemoryUsage* attribute is below threshold 3, the *txFrameMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

Mib	AtmBase
Vector of	Decimal (0..32767)
Units	frameBlocks
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Fcrc **rxFrameMemoryThresholds (rxFrThresh)**

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for receive frame memory for this FP. The receive frame memory is used for storing frames received by this FP. The first value indicates the total receive frame memory size. This is derived based on the total receive memory capacity of this FP, and the number of connections specified. The current value of *rxFrameMemoryUsage* together with the vector of values in *rxFrameMemoryThresholds* determines the *rxFrameMemoryCongestionState*. The congestion state determines whether frames of a given discard priority (DP) are discarded or queued for processing. When the *rxFrameMemoryUsage* attribute is between threshold 0 and threshold 1, the *rxFrameMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total receive frame memory size. When the *rxFrameMemoryUsage* attribute is between threshold 1 and threshold 2, the *rxFrameMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total receive frame memory size.

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When the *rxFrameMemoryUsage* attribute is between threshold 2 and threshold 3, the *rxFrameMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total receive frame memory size.

When the *rxFrameMemoryUsage* attribute is below threshold 3, the *rxFrameMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

Mib	AtmBase
Vector of	Decimal (0..32767)
Units	frameBlocks
Index	Decimal (0..3)
Default	No default

COMPONENT Lp Eng Fcrc Override (Ov)

Groups	GROUP Lp Eng Fcrc Ov Provisioned (Prov)
Scope	Device
Description	*Lp Eng Fcrc Override* This component holds provisionable engineering parameters used by frame services on this *LogicalProcessor*.
Mib	AtmBase
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Fcrc Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains frame services provisionable engineering parameters for this *LogicalProcessor*. Note that altering any of these parameters will result in a card reset.
Mib	AtmBase

ATTRIBUTE Lp Eng Fcrc Ov subConnectionPoolCapacity (subConnCap)

Access	Read and write
Criticality	Process
Description	This attribute indicates the maximum number of sub-connections for the *LogicalProcessor*.

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A sub-connection is used for interworking the ATM services with the frame oriented services such as Frame Relay and Path Oriented Routing System (PORS). When a frame is received at a sub-connection, the frame header is modified to be compatible with the service it is to be forwarded to.

Due to limited resources, not all of the sub-connections requested by this attribute may be allocated. The desired number of sub-connections allocated is indicated by the sum of *fcrc subConnectionPoolAvailable* and *fcrc subConnectionPoolUsage* attributes.

This pool is used for connection oriented services only. Each of the following services uses one or more sub-connections from this pool:
Any Frame Relay DLCI (provisioned [permanent] or signalled (SVC))[FRUNI, FRNNI, FRATM, BNX, IP Optimized]
Any PORS LCN
Any MPLS connection

When the sub-connection pool is exhausted, no more connections are accepted from the services which utilize this pool.

Note: Ip Routing entries also compete for this memory.

The maximum size of this pool is 8192 for CQC based cards. The default ***cardDependent*** has the effect of setting *subConnectionPoolCapacity* to 1024 for both CQC cards and SGAF cards.

Mib	AtmBase
Values	Decimal (0..49152) cardDependent
Default	cardDependent

ATTRIBUTE Lp Eng Fcrc Ov **InnConnectionPoolCapacity (InnConnCap)**

Access	Read and write
Criticality	Process
Description	This attribute indicates the maximum number of resource records for the connections which utilize Logical Network Number (LNN) on the *LogicalProcessor*.

A logical network is a subset of nodes together with a subset of trunks that interconnect those nodes. It carries the traffic for a defined set of network protocols. An LNN is used to identify a logical network. The connectionless services that utilize the logical networks require some processing at the intermediate nodes. This pool is allocated at the intermediate nodes to sustain these connectionless services.

If the *McsMgr DprsMcsEpG/n Ep/n EpD transportConnectionPreference* attribute is set to ***atmOnly***, each instance of the *McsMgr DprsMcsEpG/n*

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Ep/n component uses one resource record from this pool, otherwise it does not use this pool.

Note: Frame and Cell queues also compete for this memory.

Each DPRS instance requires two resource records from this pool. The maximum size of this pool is 256 for CQC based cards. The default ***cardDependent*** has the effect of setting *InnConnectionPoolCapacity* to 128 for CQC cards and 256 for SGAF cards.

Mib	AtmBase
Values	Decimal (1..2048) cardDependent
Default	cardDependent

COMPONENT Lp Eng Fcrc Pqc (Pqc)

Groups	GROUP Lp Eng Fcrc Pqc Operational (Oper)
Scope	Device
Description	*Lp Eng Fcrc Pqc* This component is used to view the usage of resources specific to frame services on a PQC based FP.
Mib	AtmBase
Subcomponents	COMPONENT Lp Eng Fcrc Pqc Override (Ov)
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Fcrc Pqc Operational (Oper)

Properties	Operational
Description	This group describes the usage of resources specific to frame services on a PQC based FP.
Mib	AtmBase

ATTRIBUTE Lp Eng Fcrc Pqc ipRoutesPoolSize (ipRts)

Access	Read only
Description	This attribute indicates the number of IP routing entries permitted on the Logical Processor. If there are enough resources on the card, this value is equal to the provisioned attribute (in *Fcrc Pqc Ov*) *ipRoutesPoolCapacity*.
Mib	AtmBase

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Values	Decimal (0..100000)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipRoutesPoolUsage (ipRtsUsage)

Access	Read only
Description	This attribute represents the current number of IP routing entries that are in use.
Mib	AtmBase
Values	Decimal (0..100000)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipRoutesPoolAvailableEst (ipRtsAvail)

Access	Read only
Description	Each IP routing resource can hold between one and three IP routing entries. Therefore, it is not possible to know exactly how many more IP routing entries can be added to the IP routing table. This attribute specifies the estimated number of IP routing entries that are available on the Logical Processor. It is an approximation based on the current average number of IP routing entries per IP routing resource.
Mib	AtmBase
Values	Decimal (0..100000)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipInputRecordsPoolSize (ipInput)

Access	Read only
Description	This attribute contains the maximum number of IP input records that are available on a PQC based Logical Processor. IP input records are used by IP-aware media associated to a *Vr Pp* component. In general, one IP input record is used per Layer 2 connection used by IP-aware media.
Mib	AtmBase
Values	Decimal (0..32768)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipInputRecordsPoolUsage (ipInputUsage)

Access	Read only
Description	This attribute indicates the current number of IP input records that are used by the IP instances on this Logical Processor.If this number exceeds *ipInputRecordsPoolSize*, some IP-aware media protocol ports will not be able to receive traffic.
Mib	AtmBase

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Values	Decimal (0..32768)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipOutputRecordsPoolSize (ipOutput)

Access	Read only
Description	This attribute contains the maximum number of IP output records that are available on this Logical Processor.
Mib	AtmBase
Values	Decimal (0..32768)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipOutputRecordsPoolUsage (ipOutputUsage)

Access	Read only
Description	This attribute contains the current number of IP output records that are used by the IP instances currently active on a PQC based Logical Processor. IP output records are used by every active IP next hop onto which a flow has been exercised. If Equal-Cost Multi-Path (ECMP) IP routes are used on this node, IP output records can become exhausted rapidly. ECMP can be turned off by setting *Vr Ip Ospf ecmpStatus* attribute to ***disabled***.
Mib	AtmBase
Values	Decimal (0..32768)
Default	No default

COMPONENT Lp Eng Fcrc Pqc Override (Ov)

Groups	GROUP Lp Eng Fcrc Pqc Ov Provisioned (Prov)
Scope	Device
Description	*Lp Eng Fcrc Pqc Ov* This component is used to configure resources specific to frame services on a PQC based Logical Processor.
Mib	AtmBase
Common Verbs	Help List Display

GROUP Lp Eng Fcrc Pqc Ov Provisioned (Prov)

Properties	Provisioned
Description	This group is used for fine tuning resource configuration of frame services on a PQC based Logical Processor.

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Mib	AtmBase

ATTRIBUTE Lp Eng Fcrc Pqc Ov ipRoutesPoolCapacity (ipRtsCap)

Access	Read and write
Criticality	Process
Description	This attribute indicates the number of desired IP routing entries for the Logical Processor. It is used to determine the number of IP routing resources to be allocated on the card. Each IP routing resource can hold between one and three IP routing entries. To calculate the number of IP routing resources required, an average of 2 IP routing entries per IP routing resource is used. If there are not enough resources on the card, a smaller pool is allocated. Operational attribute (in Fcrc Pqc) *ipRoutesPoolSize* indicates the actual size of the pool.
Mib	AtmBase
Values	Decimal (0..100000)
Default	4096

COMPONENT Lp Eng AtmPathTrace (PTrace)

Groups	GROUP Lp Eng PTrace Operational (Oper)
Scope	Device
Description	*Lp/n Eng AtmPathTrace* This component holds the path trace engineering parameters and statistics for the following features: ***AtmUni***, ***AtmPnni***, and ***Atmlisp*** on this *Lp*.
Mib	PathTrace
Opt. Subcomp.	COMPONENT Lp Eng PTrace Override (Ov)
Common Verbs	Help List Display Add DELete

GROUP Lp Eng PTrace Operational (Oper)

Properties	Operational
Description	This group contains the current engineering parameters and statistics for path trace for the following features: ***AtmUni***, ***AtmPnni,*** and ***Atmlisp*** on this *Lp*.
Mib	PathTrace

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ATTRIBUTE Lp Eng PTrace maxTraceRecords (mRecords)

Access	Read only
Description	This attribute indicates the maximum number of path trace records that are allowed to be stored on this *Lp*. Once the maximum has been reached, each *AtmPathTraceFilter* component manages the records it owns.
Mib	PathTrace
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Lp Eng PTrace currentTraceRecords (cRecords)

Access	Read only
Description	This attribute indicates the current number of Path Trace records that are stored on this *Lp*.
Mib	PathTrace
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Lp Eng PTrace maxConcurrentTraceRequests (mcRequests)

Access	Read only
Description	This attribute indicates the maximum number of concurrent trace requests on this *Lp*. Once the maximum has been reached, the Trace Transit List IE in the connection setup request is dropped and the setup request proceeds.
Mib	PathTrace
Values	Decimal (1..200)
Default	No default

ATTRIBUTE Lp Eng PTrace currentTraceRequests (cRequests)

Access	Read only
Description	This attribute indicates the number of active current trace requests on this *Lp*.
Mib	PathTrace
Values	Decimal (0..200)
Default	No default

COMPONENT Lp Eng PTrace Override (Ov)

Groups	GROUP Lp Eng PTrace Ov Provisioned (Prov)

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Scope	Device
Description	*Lp Eng PTrace Override* This component holds provisionable engineering parameters used to override the default maximum values allowed on this *Lp*.
Mib	PathTrace
Common Verbs	Help List Display Add DELete

GROUP Lp Eng PTrace Ov **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable engineering parameters for this *Lp*.
Mib	PathTrace

ATTRIBUTE Lp Eng PTrace Ov **maxTraceRecords**

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored on this *Lp*. Once the maximum has been reached, each *AtmPathTraceFilter* component manages the records it owns. If the value is set to zero, all *AtmPathTraceFilter* components are removed. If the existing value is changed from a higher value to a lower value by a difference of 20, all records on the *Lp* are lost If the existing value is changed from a lower value to a higher value, all records remain.
Mib	PathTrace
Values	Decimal (0..200)
Default	0

ATTRIBUTE Lp Eng PTrace Ov **maxConcurrentTraceRequests**

Access	Read: All Write: All
Description	This attribute indicates the maximum number of concurrent trace requests on this *Lp*. Once the maximum has been reached, the Trace Transit List IE in the connection setup request is dropped and the setup request proceeds.

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Mib	PathTrace
Values	Decimal (1..200)
Default	20

COMPONENT Lp Eng ActiveAlarmList (AAList)

Groups	GROUP Lp Eng AAList Operational (Oper)
Scope	Device
Description	*Lp Eng ActiveAlarmList* This component holds the engineering parameters and operational statistics for the active alarms on this LP.
Mib	ActiveAlarmList
Opt. Subcomp.	COMPONENT Lp Eng AAList Override (Ov)
Common Verbs	Help List Display Add DELete

GROUP Lp Eng AAList Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the ActiveAlarmList component.
Mib	ActiveAlarmList

ATTRIBUTE Lp Eng AAList maxListSize (size)

Access	Read only
Description	This attribute indicates the maximum number of active alarms this LP can hold. **Possible Values:** *Disabled:*Do not store active alarms on this LP. *10..200*: *Unlimited*: This value indicates that the system should not limit the number of active alarms on this LP. Alarms can still be discarded if the memory resources are congested.
Mib	ActiveAlarmList
Values	Decimal (10..200) disabled (dis) unlimited (unl)
Default	No default

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ATTRIBUTE Lp Eng AAList alarmsRx

Access	Read only
Description	This attribute counts the active alarms that have been received from this LP.
Mib	ActiveAlarmList
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng AAList alarmsDiscarded

Access	Read only
Description	This attribute counts the active alarms that have been discarded on this LP. Alarms are discarded when the number of active alarms received on this LP exceeds what it can hold, or the memory resource of the LP is congested.
Mib	ActiveAlarmList
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng AAList currentListSize

Access	Read only
Description	This attribute indicates the current number of active alarms stored on this LP.
Mib	ActiveAlarmList
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng AAList peakListSize (peak)

Access	Read only
Description	This attribute indicates the peak number of the active alarms that have been received on this LP since the last time the LP came up.
Mib	ActiveAlarmList
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eng AAList Override (Ov)

Groups	GROUP Lp Eng AAList Ov Provisioned (Prov)

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Scope	Device
Description	*Lp Eng AAList Override* This component holds provisionable engineering parameters for the active alarms on this LP.
Mib	ActiveAlarmList
Common Verbs	Help List Display Add DELete

GROUP Lp Eng AAList Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *ActiveAlarmList Override* components under the *Lp Engineering component*.
Mib	ActiveAlarmList

ATTRIBUTE Lp Eng AAList Ov maxListSize (size)

Access	Read and write
Description	This attribute specifies the maximum number of active alarms on this LP. For more details on the default and other information, refer to the parent component's *maxListSize* attribute. **Possible Values:** *Disabled:* Do not store active alarms on this LP. *10..200*: *AutoConfigured*: System Supplied. A value of 100 is selected in this release. *Unlimited*: This value indicates that the system should not limit the number of active alarms on this LP. Alarms can still be discarded if the memory resources are congested.
Mib	ActiveAlarmList
Values	Decimal (10..200) disabled (dis) autoConfigured (auto) unlimited (unl)
Default	autoConfigured

COMPONENT Lp VoiceServicesProcessor (Vsp)

Groups	GROUP Lp Vsp Provisioned (Op) GROUP Lp Vsp OsiState (State)
Scope	Device

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Description	*Lp/n VoiceServicesProcessor* *Dlep/n VoiceServicesProcessor* This component represents a Voice Services Processor FP. When added, *PModule* subcomponents are added automatically. For the ***12mVspAal*** and ***Vsp2*** cards, 12 *PModule* instances are added. For the ***2pGeMmSrVsp3*** card, 24 *PModule* instances are added. For the ***2pOC3ChSmIrVsp3*** card, 23 *PModule* instances are added. For the ***2pVS*** card, 65 *PModule* instances are added. For the ***2pOC3ChSmIrVsp4e*** card, 45 *PModule* instances are added.
Mib	LogicalProcessor
Subcomponents	COMPONENT Lp Vsp ProcessingModule (PModule)
Opt. Subcomp.	COMPONENT Lp Vsp Ethernet1000BaseSX (GigE)
Dyn. Subcomp.	COMPONENT Lp Vsp Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Vsp Provisioned (Op)

Properties	Provisioned
Description	This group contains provisioning data for the *Vsp* Component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp linkToApplication (lta)

Access	Read and write
Criticality	Process
Description	This attribute specifies a service link to an *Nsta* component that defines the application services available in the VSP card.
Mib	LogicalProcessor
Values	Link (Service, linkToServer)
Default	No default

GROUP Lp Vsp OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Vsp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Lp Vsp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

COMPONENT Lp Vsp ProcessingModule (PModule)

Instance	Decimal (1..65)
Groups	GROUP Lp Vsp PModule Provisioned (Prov) GROUP Lp Vsp PModule OsiState (State) GROUP Lp Vsp PModule Operational (Oper)
Scope	Device
Description	*Lp/n Vsp ProcessingModule/n* *Dlep/n Vsp ProcessingModule/n* A *ProcessingModule* (*PModule*) component instance represents a distinct physical processing module on a Voice Services Processor (VSP) FP. Each *PModule* instance is uniquely identified by a number that corresponds to a specific physical location on the VSP FP.
Mib	LogicalProcessor
Dyn. Subcomp.	COMPONENT Lp Vsp PModule ProcessingBlock (PBlock)
Common Verbs	Help List Display Add DELete

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GROUP Lp Vsp PModule Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *ProcessingModule*.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp PModule moduleType (modType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of processing module expected for this *ProcessingModule* instance. A value of ***vpm*** refers to a processing module instance that is capable of processing voice, voiceband data, and data. A value of ***spm*** refers to a processing module instance that is capable of processing signaling, and hosting a media or signaling gateway. A value of ***none*** refers to a processing module instance that is unavailable for use.
Mib	LogicalProcessor
Values	none vpm spm
Default	none

GROUP Lp Vsp PModule OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp PModule adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — LogicalProcessor

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp Vsp PModule operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — LogicalProcessor

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp Vsp PModule usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — LogicalProcessor

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Values	idle active (activ) busy
Default	idle

GROUP Lp Vsp PModule Operational (Oper)

Properties	Operational
Description	This group indicates operational information for a *ProcessingModule*.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp PModule insertedModuleType (insModType)

Access	Read only
Description	This attribute indicates the type of processing module currently present in the physical position on a Voice Services Processor FP. A value of ***vpm*** indicates the presence of a processing module capable of processing voice, voiceband data, and data. A value of ***spm*** indicates the presence of a processing module capable of processing signaling, and hosting a media or signaling gateway. A value of ***none*** indicates that no processing module is present. A value of ***unknown*** indicates the presence of a processing module with capabilities not known by the software.
Mib	LogicalProcessor
Values	none unknown vpm spm
Default	No default

ATTRIBUTE Lp Vsp PModule productCode (prc)

Access	Read only
Description	This attribute indicates the product engineering code and release of the *ProcessingModule*.
Mib	LogicalProcessor
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Lp Vsp PModule failureCause (failCause)

Access	Read only
Description	This attribute indicates the reason why the physical processing module has failed.

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The various failure causes are:
none - There is no failure.
cannotLoadFirmware - A module has been detected, but the firmware load operation failed.
failedDiagnostics - The diagnostics cycle has completed and an error has been detected within the module.
mismatched - The *insertedModuleType* of the *PModule* does not match its provisioned *moduleType*.
connectivityFailed - The test cycle has run and an error has been detected on one of the *PBlock*s within the *PModule*.
notResponding - One of the *PBlock*s within the *PModule* is not responding.

Mib: LogicalProcessor

Values:
none
cannotLoadFirmware
failedDiagnostics
mismatched
connectivityFailed
notResponding

Default: none

COMPONENT Lp Vsp PModule ProcessingBlock (PBlock)

Instance: Decimal (1..2)

Groups:
GROUP Lp Vsp PModule PBlock Operational (Oper)
GROUP Lp Vsp PModule PBlock Utilization (Util)

Scope: Device

Description:
Lp/n Vsp PModule/n ProcessingBlock/n
Dlep/n Vsp PModule/n ProcessingBlock/n

This dynamic component represents a block of Data Processors within a *ProcessingModule*.

The Processing Block is the smallest unit on the Voice Services Processor (VSP) FP on which different Data Processing software algorithms may be executed, or on which diagnostics may be performed.

Mib: LogicalProcessor

Common Verbs:
Help
List
Display

GROUP Lp Vsp PModule PBlock Operational (Oper)

Properties: Operational

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Description	This group contains status information about the *ProcessingBlock* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp PModule PBlock serviceList (servList)

Access	Read only
Description	This attribute indicates the components that have resources allocated on this *ProcessingBlock* component. This attribute is not displayed if the *Shelf Card cardType* attribute is set to ***2pOC3ChSmIrVsp3*** or ***2pVS***.
Mib	LogicalProcessor
List of	The name of the component
Default	No default

GROUP Lp Vsp PModule PBlock Utilization (Util)

Properties	Operational
Description	This group contains information about processing utilization of this *PBlock* component. This group is filtered if the *modType* attribute of the parent *PModule* component is not set to ***spm***, or on the ***12mVspAal*** card.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp PModule PBlock timeInterval

Access	Read only
Description	This attribute indicates the time period for which the average, minimum, and maximum utilization values are calculated. If the associated *Vsp* component is locked this attribute will be reset to ***0***. This attribute is reset to ***0*** every 15 minutes.
Mib	LogicalProcessor
Values	Decimal (0..15)
Units	minutes
Default	No default

ATTRIBUTE Lp Vsp PModule PBlock cpuUtil

Access	Read only
Description	This attribute indicates the approximate processing utilization of this *PBlock* component.

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Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Vsp PModule PBlock cpuUtilAvg

Access	Read only
Description	This attribute indicates average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Vsp PModule PBlock cpuUtilAvgMin

Access	Read only
Description	This attribute indicates the minimum average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Vsp PModule PBlock cpuUtilAvgMax

Access	Read only
Description	This attribute indicates the maximum average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Lp Vsp Test (Test)

Groups	GROUP Lp Vsp Test OsiState (State) GROUP Lp Vsp Test Setup (Setup) GROUP Lp Vsp Test Results (Results)

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Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp Vsp Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Vsp Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Vsp Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — LogicalProcessor

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp Vsp Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — LogicalProcessor

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp Vsp Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — LogicalProcessor

Values — idle
active (activ)
busy

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Default	idle

GROUP Lp Vsp Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Vsp Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of

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V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Vsp Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp Vsp Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: LogicalProcessor

Values:
ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

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Default	ccitt32kBitPattern

ATTRIBUTE Lp Vsp Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Vsp Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Vsp Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

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ATTRIBUTE Lp Vsp Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Vsp Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of

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transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib LogicalProcessor

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp Vsp Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Vsp Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

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Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

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Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Vsp Test elapsedTime

Access	Read only

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Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Vsp Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Vsp Ethernet1000BaseSX (GigE)

Instance	Decimal (0..1)
Groups	GROUP Lp Vsp GigE OsiState (State) GROUP Lp Vsp GigE Eth1000Operational (Oper) GROUP Lp Vsp GigE Eth1000Statistics (Stats)
Scope	Device
Description	*Lp/n Vsp GigE/n* This component monitors and provides access to statistical measurements of the *VspEth1000BaseSX* ports on the card, when the ***vgsIpGigE*** or the ***vgsIpG729GigE*** feature is provisioned. Two *VspEth1000BaseSX* ports are supported on the ***2pGeMmSrVsp3*** Function Processor.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

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GROUP Lp Vsp GigE OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp GigE adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Vsp GigE operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Vsp GigE usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp Vsp GigE Eth1000Operational (Oper)

Properties	Operational
Description	This group contains the port operational attributes of the *VspEth1000BaseSX* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp GigE macAddress (macAdd)

Access	Read only
Description	This attribute indicates the medium access controller address. The value of this attribute will be assigned by the system. The medium access controller address is displayed in canonical format.
Mib	LogicalProcessor
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Vsp GigE autoNegotiationStatus (negStatus)

Access	Read only
Description	This attribute indicates the status of the auto negotiation at the physical level.

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Possible values are:

succeeded – auto-negotiation has completed successfully.

failed – auto-negotiation has failed to negotiate a compatible set of capabilities.

inProgress – auto-negotiation is currently in progress.

disabled – the port has detected that the far end does not support auto-negotiation.

Mib	LogicalProcessor
Values	succeeded failed inProgress disabled
Default	No default

ATTRIBUTE Lp Vsp GigE ingressFlowControlStatus (ingFcStatus)

Access	Read only
Description	This attribute indicates whether the ingress flow control has been successfully negotiated with the link partner. Possible values are: ***enabled*** - this state will generate pause frames when internal congestion is detected. ***disabled*** - in this state, no pause frames are generated. In addition, there is a risk that the received packets may be discarded due to lack of internal resources.
Mib	LogicalProcessor
Values	enabled disabled
Default	No default

ATTRIBUTE Lp Vsp GigE lossofSyncAlarm (syncAlarm)

Access	Read only
Description	This attribute indicates whether the loss of synchronization alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set.

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off - the alarm is clear.

Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Vsp GigE autoNegIncompleteAlarm (negAlarm)

Access	Read only
Description	This attribute indicates whether the auto-negotiation incomplete alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Vsp GigE remoteFaultIndicationAlarm (remFaultAlarm)

Access	Read only
Description	This attribute indicates whether the remote fault indication alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	LogicalProcessor
Values	on off
Default	No default

GROUP Lp Vsp GigE Eth1000Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for the *VspEth1000BaseSX* component.
Mib	LogicalProcessor

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ATTRIBUTE Lp Vsp GigE framesTransmittedOk (frmTxOk)

Access	Read only
Description	This attribute counts the frames that were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE framesReceivedOk (frmRxOk)

Access	Read only
Description	This attribute counts the number of frames that were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE octetsTransmittedOk (octetsTxOk)

Access	Read only
Description	This attribute counts the octets that were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE octetsReceivedOk (octetsRxOk)

Access	Read only
Description	This attribute counts the octets that were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE pauseFramesTransmitted (txPause)

Access	Read only
Description	This attribute counts the pause medium access controller control frames transmitted. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor

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Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE pauseFramesReceived (rxPause)

Access	Read only
Description	This attribute counts the pause medium access controller control frames received. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE undersizeFrames (underFrm)

Access	Read only
Description	This attribute counts the frames that were received but were less than the minimum size (64 bytes). This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE framesTooLong (longFrm)

Access	Read only
Description	This attribute counts the frames that were received but were greater than the maximum size. The count includes frames which have a bad frame check sequence. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE frameCheckSequenceErrors (fcsErr)

Access	Read only
Description	This attribute counts the frames received that were an integral number of octets in length and did not pass the FCS check. This count does not include frames received that were too long or too short. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer

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Default	No default

ATTRIBUTE Lp Vsp GigE symbolErrors (symErr)

Access	Read only
Description	This attribute counts the times a valid length frame was received and had at least one occurance of a data reception or symbol error. This counter increments once per valid Carrier Event as defined by the specification IEEE 802.3 - 2000 edition. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE broadcastFramesReceivedOk (bcastRxOk)

Access	Read only
Description	This attribute counts the valid broadcast frames received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE discardedFrames (discFrm)

Access	Read only
Description	This attribute counts the valid frames discarded because of a lack of resources available to receive them. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

COMPONENT Lp Ethernet100BaseT (Eth100)

Instance	Decimal (0..1)
Groups	GROUP Lp Eth100 CustomerIdentifierData (CidData) GROUP Lp Eth100 IfEntryProv (IfEntry) GROUP Lp Eth100 Provisioned (Prov) GROUP Lp Eth100 AdminInfo (AdminInfo) GROUP Lp Eth100 OsiState (State) GROUP Lp Eth100 OperationalStatus (OperStatus) GROUP Lp Eth100 Operational (Oper) GROUP Lp Eth100 Eth100Statistics (Eth100Stats) GROUP Lp Eth100 Statistics (Stats)

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Scope	Device
Description	*Lp/n Ethernet100BaseT/n* This component defines an instance of a 100BaseT Ethernet station attached to a bus. One instance of this component must be created for each hardware interface.
Mib	LanDrivers
Subcomponents	COMPONENT Lp Eth100 LanTest (Lt) COMPONENT Lp Eth100 Test
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Eth100 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LanDrivers
Values	Decimal (0; 1..8191)

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Default	0

GROUP Lp Eth100 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE Lp Eth100 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP Lp Eth100 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Eth100BaseT* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 duplexMode

Access	Read and write
Description	This attribute specifies the duplex mode of the port. This attribute is ignored if auto negotiation is successful.
Mib	LanDrivers

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Values	half full
Default	half

ATTRIBUTE Lp Eth100 lineSpeed

Access	Read and write
Description	This attribute sets the operating speed for the Ethernet 100BaseT port. This attribute is ignored if auto negotiation is successful.
Mib	LanDrivers
Values	Decimal (10; 100)
Units	Mbit/s
Default	100

ATTRIBUTE Lp Eth100 autoNegotiation

Access	Read and write
Description	This attribute is used to select whether or not the port does auto negotiation. The provisionable values of *duplexMode* and *lineSpeed* are ignored if auto negotiation is successful. Refer to the operational attribute *autoNegStatus* for auto negotiation results.
Mib	LanDrivers
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp Eth100 applicationFramerName (framer)

Access	Read and write
Description	This attribute contains the component name of a Framer which is associated with the Eth100BaseT component. This defines which Lan Application will be using this Eth100BaseT interface.
Mib	LanDrivers
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp Eth100 switchoverOnFailure (switch)

Access	Read and write
Description	This attribute specifies if a FP switchover should occur when a port or link failure is detected by the initial test process or if a steady state link failure is observed. The switchover occurs only if the standby FP's port is operational. This value '***enabled***' specifies that a switchover should take

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	place if a port or link failure is detected. This value '***disabled***' specifies that a switchover should not take place when a port or link failure is detected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Eth100 switchoverHoldoff (soHoldoff)

Access	Read and write
Description	This attribute specifies the time interval between detection of a port or link failure and initiation of FP switchover. This attribute is ignored if *switchoverOnFailure* is ***disabled***. The switchover occurs only if the standby FP's port is operational. The attribute gives the customer a choice to have a switchover immediate upon changing cable or hold-off time up to 3 minutes. The default value is 0 (no hold-off). Note that a non-zero value will result in outage but will allow the link time to recover before initiating a switchover.
Mib	LanDrivers
Values	Decimal (0..180)
Units	seconds
Default	0

GROUP Lp Eth100 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LanDrivers
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Eth100 commentText

Access	Read and write

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Description	Any miscellaneous text about the facility.
Mib	LanDrivers
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Eth100 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	LanDrivers
Values	no yes
Default	no

GROUP Lp Eth100 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Eth100 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Eth100 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

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GROUP Lp Eth100 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP Lp Eth100 Operational (Oper)

Properties	Operational
Description	This group contains the Port operational attributes of the *Eth100BaseT* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 macAddress

Access	Read only
Description	This attribute indicates the medium access controller (MAC) address. The MAC address is displayed in canonical format.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Eth100 autoNegStatus

Access	Read only
Description	This attribute displays the status of the auto negotiation at the Phy level.
Mib	LanDrivers
Values	succeeded failed disabled

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Default	No default

ATTRIBUTE Lp Eth100 actualLineSpeed

Access	Read only
Description	This attribute indicates the line speed of the Eth100BaseT port.
Mib	LanDrivers
Values	Decimal (10; 100)
Units	Mbit/s
Default	No default

ATTRIBUTE Lp Eth100 actualDuplexMode

Access	Read only
Description	This attribute indicates whether the hardware is in half duplex or full duplex mode.
Mib	LanDrivers
Values	half full
Default	No default

ATTRIBUTE Lp Eth100 activeStatus

Access	Read only
Description	This attribute indicates the status of the Ethernet port on the active FP.
Mib	LanDrivers
Values	available notavailable
Default	No default

ATTRIBUTE Lp Eth100 standbyStatus

Access	Read only
Description	This attribute indicates the status of the Ethernet port on the standby FP.
Mib	LanDrivers
Values	available notavailable
Default	No default

GROUP Lp Eth100 Eth100Statistics (Eth100Stats)

Properties	Operational

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Description	This group contains the statistical attributes for the *Eth100BaseT* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 framesTransmittedOk (frmTxOk)

Access	Read only
Description	This attribute counts the number of frames which were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 framesReceivedOk (frmRxOk)

Access	Read only
Description	This attribute counts the number of frames which were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 octetsTransmittedOk (octetsTxOk)

Access	Read only
Description	This attribute counts the number of octets which were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 octetsReceivedOk (octetsRxOk)

Access	Read only
Description	This attribute counts the number of octets which were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 undersizeFrames (undersizeFrm)

Access	Read only

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Description	This attribute counts the number of frames that were received but were less than the minimum size (64 bytes). This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 receivedOctetsIntoRouterBr (rxOctetsRtrBr)

Access	Read only
Description	This attribute counts the number of octets that were not hardware switched but were passed the Router or Bridge software. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 receivedFramesIntoRouterBr (rxFrmRtrBr)

Access	Read only
Description	This attribute counts the number of frames which were not hardware switched but were passed to the Router or Bridge software. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp Eth100 Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes for the *Ethernet* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 alignmentErrors

Access	Read only
Description	The *alignmentErrors* counter indicates the number of frames received which were not an integral number of octets in length. Frames will be checked for *alignmentErrors* before they are checked for Frame Check Sequence (FCS) errors. If there is an alignment error, the error will only be counted here and not in *fcsErrors*. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 fcsErrors

Access	Read only
Description	The *fcsErrors*, Frame Check Sequence (FCS) error, counter indicates the number of frames received which were an integral number of octets in length and did not pass the FCS check. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 singleCollisionFrames

Access	Read only
Description	The *singleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced exactly one collision. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 multipleCollisionFrames

Access	Read only
Description	The *multipleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced more than one collision. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 sqeTestErrors

Access	Read only
Description	The *sqeTestErrors*, Signal Quality Error (SQE) Test errors, counter indicates the number of times the “SQE Test Error” message has been generated for the station. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Lp Eth100 deferredTransmissions

Access	Read only
Description	The *deferredTransmissions* counter indicates the number of frames which experienced a transmission delay because the medium was busy. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 lateCollisions

Access	Read only
Description	The *lateCollisions* counter indicates the number of times a collision was detected later than 512 bit-times into the transmission of a packet. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 excessiveCollisions

Access	Read only
Description	The *excessiveCollisions* counter indicates the number of frames which failed to get transmitted due to excessive collisions. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 macTransmitErrors

Access	Read only
Description	The Medium Access Controller (MAC) transmit error counter indicates the number of times that a transmission failed due to internal MAC transmit errors. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Lp Eth100 carrierSenseErrors

Access	Read only
Description	The carrier sense error counter indicates the number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 frameTooLongs

Access	Read only
Description	The frame too long counter indicates the number of frames received which exceeded the maximum frame size. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 macReceiveErrors

Access	Read only
Description	The Medium Access Controller (MAC) receive error counter indicates the number of times a receive failed due to internal MAC receive errors. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eth100 LanTest (Lt)

Groups	GROUP Lp Eth100 Lt TestOp (Top)
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This

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includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.

Mib	LanDrivers
Dyn. Subcomp.	COMPONENT Lp Eth100 Lt FrameCompare (FrmCmp) COMPONENT Lp Eth100 Lt FrameCopy (FrmCpy) COMPONENT Lp Eth100 Lt PortConfig (PrtCfg) COMPONENT Lp Eth100 Lt FrameBuild (Fb) COMPONENT Lp Eth100 Lt Control (Cntl)
Common Verbs	Help List Display

VERB Start Lp Eth100 Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp Eth100 Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Eth100 Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp Eth100 Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp Eth100 Lt **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt **tData (td)**

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Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt FrameCompare (FrmCmp)

Groups	GROUP Lp Eth100 Lt FrmCmp TestOp (Top)
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

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COMPONENT Lp Eth100 Lt FrameCopy (FrmCpy)

Groups	GROUP Lp Eth100 Lt FrmCpy TestOp (Top)
Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt PortConfig (PrtCfg)

Groups	GROUP Lp Eth100 Lt PrtCfg TestOp (Top)
Scope	Device

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Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp Eth100 Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt PrtCfg **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt PrtCfg **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt **FrameBuild (Fb)**

Groups	GROUP Lp Eth100 Lt Fb TestOp (Top)
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the

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	LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	LanDrivers
Dyn. Subcomp.	COMPONENT Lp Eth100 Lt Fb TransmitInfo (TxInfo) COMPONENT Lp Eth100 Lt Fb FddiMac (MacFddi) COMPONENT Lp Eth100 Lt Fb EthernetMac (MacEnet) COMPONENT Lp Eth100 Lt Fb TokenRingMac (MacTr) COMPONENT Lp Eth100 Lt Fb DataField (Data) COMPONENT Lp Eth100 Lt Fb IpHeader (IpH) COMPONENT Lp Eth100 Lt Fb LlcHeader (Llch) COMPONENT Lp Eth100 Lt Fb AppleHeader (AppleH) COMPONENT Lp Eth100 Lt Fb IpxHeader (IpxH)
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb **TransmitInfo (TxInfo)**

Groups	GROUP Lp Eth100 Lt Fb TxInfo TestOp (Top)

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Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb FddiMac (MacFddi)

Groups	GROUP Lp Eth100 Lt Fb MacFddi TestOp (Top)
Scope	Device

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Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb MacFddi **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb MacFddi **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb **EthernetMac (MacEnet)**

Groups	GROUP Lp Eth100 Lt Fb MacEnet TestOp (Top)
Scope	Device

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Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb MacEnet **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb MacEnet **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb **TokenRingMac (MacTr)**

Groups	GROUP Lp Eth100 Lt Fb MacTr TestOp (Top)
Scope	Device

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Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb MacTr **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb MacTr **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb **DataField (Data)**

Groups	GROUP Lp Eth100 Lt Fb Data TestOp (Top)
Scope	Device
Description	This component adds a data field to frame.
Mib	LanDrivers
Common Verbs	Help List Display

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VERB Get Lp Eth100 Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb Data **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb Data **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb **IpHeader (IpH)**

Groups	GROUP Lp Eth100 Lt Fb IpH TestOp (Top)
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

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VERB Tlist Lp Eth100 Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb IpH **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb IpH **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb **LlcHeader (Llch)**

Groups	GROUP Lp Eth100 Lt Fb Llch TestOp (Top)
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp Eth100 Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb Llch **TestOp (Top)**

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Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb Llch **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb **AppleHeader (AppleH)**

Groups	GROUP Lp Eth100 Lt Fb AppleH TestOp (Top)
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb AppleH **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb AppleH **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.

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Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb IpxHeader (IpxH)

Groups	GROUP Lp Eth100 Lt Fb IpxH TestOp (Top)
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Control (Cntl)

Groups	GROUP Lp Eth100 Lt Cntl TestOp (Top)
Scope	Device

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Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Cntl TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Cntl tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Test

Groups	GROUP Lp Eth100 Test PortTestOp (PTO) GROUP Lp Eth100 Test Results (Results)
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or*

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Lp/n IlsForwarder/n Test
The Test component is used to do StartUp port test for LAN cards.

Mib	LanDrivers
Common Verbs	Help List Display

VERB Start **Lp Eth100 Test**

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop **Lp Eth100 Test**

Impact	Service
Description	This verb is used to stop a test.

VERB Reset **Lp Eth100 Test**

Impact	Service
Description	This verb is used to reset the Test component.

GROUP **Lp Eth100 Test** **PortTestOp (PTO)**

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	LanDrivers

ATTRIBUTE **Lp Eth100 Test** **type (type)**

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	LanDrivers
Values	onCard normal wrapA

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wrapB
thruA
thruB
extWrapA
extWrapB
extThruA
extThruB
extWrapAB
extWrapBA

Default — No default

ATTRIBUTE Lp Eth100 Test frmSize (size)

Access — Read and write

Description — This attribute defines the size of the test data frames in number of bytes.

Mib — LanDrivers

Values — Decimal (4..4096)

Units — bytes

Default — 1024

ATTRIBUTE Lp Eth100 Test duration (duration)

Access — Read and write

Description — This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.

Mib — LanDrivers

Values — Decimal (1..30240)

Units — minutes

Default — 1

GROUP Lp Eth100 Test Results (Results)

Properties — Operational

Description — This group contains all the statistics related attributes of the Test component.

Mib — LanDrivers

ATTRIBUTE Lp Eth100 Test elapsedTime

Access — Read only

Description — This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.

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Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Eth100 Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Eth100 Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	LanDrivers
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning
Default	neverStarted

ATTRIBUTE Lp Eth100 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth100 Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.

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Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth100 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth100 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth100 Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp OamEthernet (OamEnet)

Instance	Decimal (0..0)
Groups	GROUP Lp OamEnet CustomerIdentifierData (CidData) GROUP Lp OamEnet IfEntryProv (IfEntry) GROUP Lp OamEnet Provisioned (Prov) GROUP Lp OamEnet AdminInfo (AdminInfo) GROUP Lp OamEnet OsiState (State) GROUP Lp OamEnet OperationalStatus (OperStatus)

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GROUP Lp OamEnet Operational (Oper)
GROUP Lp OamEnet OamEnetStatistics (OamEnetStats)
GROUP Lp OamEnet Statistics (Stats)

Scope: Device

Description:
Lp/0 OamEthernet
This component represents an Ethernet port on the control processor.

Only one instance of this component may be created corresponding to the one hardware port on the control processor. This port is designed specifically and exclusively for Operations, Administration, and Maintenance purposes; any other use of this port is unsupported and not advised.

Mib: OamEthernet

Dyn. Subcomp.:
COMPONENT Lp OamEnet LanTest (Lt)
COMPONENT Lp OamEnet Test

Common Verbs:
Help
List
Display
Add
DELete
Unlock

VERB LOCK **Lp OamEnet**

Impact: Service

Description:
Lock [-force] [-forever] <component name>
This verb causes the *OamEthernet* component to first enter the OSI shuttingDown state. In this state all connections to the OAM Ethernet port are severed and any new connections are not accepted. Once shuttingDown state is reached the OSI state will change to locked. When the port is locked it can be tested using the *Test* component.

The default behavior for this verb is for the port to remain locked for a period of five minutes before automatically unlocking. This behavior can be overridden with the forever option.

Options:
-force
If this option is present, service to current clients is terminated and the locked state is entered immediately (that is, without first going through the shuttingDown state). Without this option, *Lock* behaves as described above.
-forever
If this option is present, then after the locked state is entered an *Unlock* command is required to get the service into the unlocked state.

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GROUP Lp OamEnet CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	OamEthernet
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp OamEnet IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	OamEthernet
Values	up down testing

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Default	up

ATTRIBUTE Lp OamEnet ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	OamEthernet
Values	Decimal (1..65535)
Default	No default

GROUP Lp OamEnet Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the *OamEthernet* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet applicationFramerName (framer)

Access	Read and write
Criticality	Process
Description	This attribute specifies which *Lan Application* is running on this port.
Mib	OamEthernet
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp OamEnet switchoverOnFailure (switch)

Access	Read and write
Description	This attribute specifies if a CP switchover should occur if a port or link failure is detected by the initial test process or if a steady state link failure is observed. The switchover will occur only if the standby CP OAM Ethernet port is operational. This attribute can be set to one of the following values: ***enabled***: This value indicates that a switchover will take place if a port or link failure is detected. ***disabled***: This value indicates that a switchover will not take place if a port or link failure is detected.
Mib	OamEthernet

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Values	enabled disabled
Default	enabled

ATTRIBUTE Lp OamEnet extendedStatistics (extStats)

Access	Read and write
Description	This attribute specifies if extended statistics are to be collected for the *OamEthernet* component. The extended statistics include: *singleCollisionFrames*, *multipleCollisionFrames*, *lateCollisions*, *excessiveCollisions*, *carrierSenseErrors*, and *clearToSendSignalLoss*. These statistics all require extra processing to gather and store which may have a negative impact on the overall performance of the OAM Ethernet port. If *extendedStatistics* is set to disabled, then these particular statistical attributes will be suppressed from display operations.
Mib	OamEthernet
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp OamEnet lineSpeed

Access	Read and write
Description	This attribute specifies the operating speed for the OAM Ethernet port. The operating speed is either ***tenMeg***, ***hundredMeg***, or ***autoConfig***. If the attribute is set to ***autoConfig*** then the operating speed is determined by the auto-negotiation process. The actual line speed is reported by the *actualLineSpeed* attribute.
Mib	OamEthernet
Values	tenMeg hundredMeg autoConfig
Default	autoConfig

ATTRIBUTE Lp OamEnet duplexMode

Access	Read and write
Description	This attribute specifies the duplex mode for the OAM Ethernet port. If the attribute is set to ***autoConfig*** then the duplex mode determined by the auto-negotiation process. The actual duplex mode is reported by the *actualDuplexMode* attribute.

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Mib	OamEthernet
Values	half full autoConfig
Default	autoConfig

ATTRIBUTE Lp OamEnet switchoverHoldoff (soHoldoff)

Access	Read and write
Description	This attribute specifies the time interval between detection of a port or link failure and initiation of CP switchover. This attribute is ignored if *switchoverOnFailure* is ***disabled***. The switchover will occur only if the standby CP OAM Ethernet port is operational.
Mib	OamEthernet
Values	Decimal (10..60)
Units	seconds
Default	30

GROUP Lp OamEnet AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	OamEthernet
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp OamEnet commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	OamEthernet
Values	String (0..60, ASCII)

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Default	No default

ATTRIBUTE Lp OamEnet includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	OamEthernet
Values	no yes
Default	no

GROUP Lp OamEnet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	OamEthernet

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp OamEnet operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	OamEthernet
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp OamEnet usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	OamEthernet
Values	idle active (activ) busy
Default	idle

GROUP Lp OamEnet OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

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Mib	OamEthernet

ATTRIBUTE Lp OamEnet snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	OamEthernet
Values	up down testing
Default	up

GROUP Lp OamEnet Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *OamEthernet* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet macAddress

Access	Read only
Description	This attribute indicates the medium access controller (MAC) address automatically assigned to the *Oam Ethernet* port by the system. The MAC address is displayed in canonical format.
Mib	OamEthernet
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp OamEnet activeStatus

Access	Read only
Description	This attribute indicates the status of the *Oam Ethernet* port on the active CP.
Mib	OamEthernet
Values	available notAvailable
Default	No default

ATTRIBUTE Lp OamEnet standbyStatus

Access	Read only

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Description	This attribute indicates the status of the *Oam Ethernet* port on the standby CP.
Mib	OamEthernet
Values	available notAvailable
Default	No default

ATTRIBUTE Lp OamEnet actualLineSpeed

Access	Read only
Description	This attribute indicates the actual line speed of the *Oam Ethernet* port.
Mib	OamEthernet
Values	Decimal (10; 100)
Units	Mbit/s
Default	No default

ATTRIBUTE Lp OamEnet actualDuplexMode

Access	Read only
Description	This attribute indicates the actual duplex mode of operation, half, or full.
Mib	OamEthernet
Values	half full
Default	No default

GROUP Lp OamEnet OamEnetStatistics (OamEnetStats)

Properties	Operational
Description	This group contains statistical attributes for the *OamEthernet* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet clearToSendSignalLoss

Access	Read only
Description	This attribute counts how often the clear to send signal was lost when attempting to transmit a frame. This counter wraps to zero when it exceeds its maximum value. This attribute is only active if the *extendedStatistics* attribute is enabled.
Mib	OamEthernet
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Lp OamEnet frameTooShort

Access	Read only
Description	This attribute counts the frames received whose length is less than the allowed minimum frame length. This counter wraps to zero when it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet numberOfRxCollisions

Access	Read only
Description	This attribute counts the collisions detected during reception. This counter wraps to zero when it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet lackOfResourcesDiscards

Access	Read only
Description	This attribute counts the good frames discarded because of a lack of resources available to contain them on the system. This counter wraps to zero when it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet overrunErrors

Access	Read only
Description	This attribute counts the frames known to be lost because the local system bus was not available. This counter wraps to zero when it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

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GROUP Lp OamEnet Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes for the *Ethernet* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet alignmentErrors

Access	Read only
Description	The *alignmentErrors* counter indicates the number of frames received which were not an integral number of octets in length. Frames will be checked for *alignmentErrors* before they are checked for Frame Check Sequence (FCS) errors. If there is an alignment error, the error will only be counted here and not in *fcsErrors*. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet fcsErrors

Access	Read only
Description	The *fcsErrors*, Frame Check Sequence (FCS) error, counter indicates the number of frames received which were an integral number of octets in length and did not pass the FCS check. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet singleCollisionFrames

Access	Read only
Description	The *singleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced exactly one collision. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet multipleCollisionFrames

Access	Read only

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Description	The *multipleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced more than one collision. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet sqeTestErrors

Access	Read only
Description	The *sqeTestErrors*, Signal Quality Error (SQE) Test errors, counter indicates the number of times the “SQE Test Error” message has been generated for the station. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet deferredTransmissions

Access	Read only
Description	The *deferredTransmissions* counter indicates the number of frames which experienced a transmission delay because the medium was busy. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet lateCollisions

Access	Read only
Description	The *lateCollisions* counter indicates the number of times a collision was detected later than 512 bit-times into the transmission of a packet. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet excessiveCollisions

Access	Read only

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Description	The *excessiveCollisions* counter indicates the number of frames which failed to get transmitted due to excessive collisions. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet macTransmitErrors

Access	Read only
Description	The Medium Access Controller (MAC) transmit error counter indicates the number of times that a transmission failed due to internal MAC transmit errors. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet carrierSenseErrors

Access	Read only
Description	The carrier sense error counter indicates the number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet frameTooLongs

Access	Read only
Description	The frame too long counter indicates the number of frames received which exceeded the maximum frame size. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet macReceiveErrors

Access	Read only

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Description	The Medium Access Controller (MAC) receive error counter indicates the number of times a receive failed due to internal MAC receive errors. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp OamEnet LanTest (Lt)

Groups	GROUP Lp OamEnet Lt TestOp (Top)
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	OamEthernet
Dyn. Subcomp.	COMPONENT Lp OamEnet Lt FrameCompare (FrmCmp) COMPONENT Lp OamEnet Lt FrameCopy (FrmCpy) COMPONENT Lp OamEnet Lt PortConfig (PrtCfg) COMPONENT Lp OamEnet Lt FrameBuild (Fb) COMPONENT Lp OamEnet Lt Control (Cntl)
Common Verbs	Help List Display

VERB Start Lp OamEnet Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp OamEnet Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp OamEnet Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

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VERB Get Lp OamEnet Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp OamEnet Lt **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt **FrameCompare (FrmCmp)**

Groups	GROUP Lp OamEnet Lt FrmCmp TestOp (Top)
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

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VERB Tlist Lp OamEnet Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt FrameCopy (FrmCpy)

Groups	GROUP Lp OamEnet Lt FrmCpy TestOp (Top)
Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt FrmCpy TestOp (Top)

Properties	Operational

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Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt PortConfig (PrtCfg)

Groups	GROUP Lp OamEnet Lt PrtCfg TestOp (Top)
Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp OamEnet Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

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Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt FrameBuild (Fb)

Groups	GROUP Lp OamEnet Lt Fb TestOp (Top)
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	OamEthernet
Dyn. Subcomp.	COMPONENT Lp OamEnet Lt Fb TransmitInfo (TxInfo) COMPONENT Lp OamEnet Lt Fb FddiMac (MacFddi) COMPONENT Lp OamEnet Lt Fb EthernetMac (MacEnet) COMPONENT Lp OamEnet Lt Fb TokenRingMac (MacTr) COMPONENT Lp OamEnet Lt Fb DataField (Data) COMPONENT Lp OamEnet Lt Fb IpHeader (IpH) COMPONENT Lp OamEnet Lt Fb LlcHeader (Llch) COMPONENT Lp OamEnet Lt Fb AppleHeader (AppleH) COMPONENT Lp OamEnet Lt Fb IpxHeader (IpxH)
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb tData (td)

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Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb TransmitInfo (TxInfo)

Groups	GROUP Lp OamEnet Lt Fb TxInfo TestOp (Top)
Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

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COMPONENT Lp OamEnet Lt Fb FddiMac (MacFddi)

Groups	GROUP Lp OamEnet Lt Fb MacFddi TestOp (Top)
Scope	Device
Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb MacFddi TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb MacFddi tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb EthernetMac (MacEnet)

Groups	GROUP Lp OamEnet Lt Fb MacEnet TestOp (Top)
Scope	Device

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Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb MacEnet **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb MacEnet **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb **TokenRingMac (MacTr)**

Groups	GROUP Lp OamEnet Lt Fb MacTr TestOp (Top)
Scope	Device

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Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb MacTr **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb MacTr **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb **DataField (Data)**

Groups	GROUP Lp OamEnet Lt Fb Data TestOp (Top)
Scope	Device
Description	This component adds a data field to frame.
Mib	OamEthernet
Common Verbs	Help List Display

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VERB Get Lp OamEnet Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb Data **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb Data **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb **IpHeader (IpH)**

Groups	GROUP Lp OamEnet Lt Fb IpH TestOp (Top)
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

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VERB Tlist Lp OamEnet Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb IpH **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb IpH **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb **LlcHeader (Llch)**

Groups	GROUP Lp OamEnet Lt Fb Llch TestOp (Top)
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp OamEnet Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb Llch **TestOp (Top)**

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Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb LIch **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb **AppleHeader (AppleH)**

Groups	GROUP Lp OamEnet Lt Fb AppleH TestOp (Top)
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb AppleH **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb AppleH **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.

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Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb IpxHeader (IpxH)

Groups	GROUP Lp OamEnet Lt Fb IpxH TestOp (Top)
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Control (Cntl)

Groups	GROUP Lp OamEnet Lt Cntl TestOp (Top)
Scope	Device

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Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Cntl **TestOp (Top)**

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Cntl **tData (td)**

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet **Test**

Groups	GROUP Lp OamEnet Test Operational (Oper) GROUP Lp OamEnet Test Results
Scope	Device

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Description	Lp/0 OamEthernet Test The *Test* component appears only for 10BaseT OAM Ethernet ports on the CP. It is used to run the port test for the OAM Ethernet port.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Start Lp OamEnet Test

Impact	System_admin
Description	This verb is used to start a port test on the OAM Ethernet port as per the configuration of the *Test* component's attributes. If the port is not in the locked state when the *Start* command is issued it will automatically be locked by the *Test* component before the tests are run.

GROUP Lp OamEnet Test Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the Test component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Test type

Access	Read: System_admin Write: System_admin
Description	This attribute is the type of test to be run. The four types of tests available are: the port hardware logic test, the configure and dump memory registers test, the memory mapping test and the Time Domain Reflectometry (TDR) test. The possible values of this attribute are: ***hardwareLogic***: this test checks the port hardware controller for logic errors in some of the on-chip counters and shift registers. ***configuration***: this test configures the memory registers of the hardware controller in a predetermined way and then dumps the registers and checks their contents for errors. ***memoryMap***: this test does an extensive test of the memory structures used by the OAM Ethernet port to verify that they are configured correctly and are error-free. ***tdr***: this test is used to detect and locate cable faults caused by either a short or an open circuit on the coaxial cable.

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Mib	OamEthernet
Values	hardwareLogic configuration memoryMap tdr
Default	No default

GROUP Lp OamEnet Test Results

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Test causeOfTermination

Access	Read only
Description	This attribute records the reason why the test terminated. The possible values of this attribute are: ***testTimeExpired***: this value indicates the time allotted for the test to run has expired which caused the test terminate. If the port is locked without the forever option then it will remain locked for only five minutes before being automatically unlocked. If the port unlocks itself after five minutes while the test is running then this attribute will be set to ***testTimeExpired***. If the forever option is used then the test will run until completion, failure, or a *Stop* command. ***stoppedByOperator***: this value indicates that the test was terminated when an operator issued a *Stop* command. ***unknown***: this value indicates that the test terminated for an unknown reason. ***neverStarted***: this value indicates that the test never started because the port could not be locked or because there is a hardware failure preventing the tests from running. ***testRunning***: this value indicates that the test is currently running. ***testComplete***: this value indicates that the test completed normally.
Mib	OamEthernet
Values	testTimeExpired stoppedByOperator unknown neverStarted

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	testRunning testComplete
Default	neverStarted

ATTRIBUTE Lp OamEnet Test testResult

Access	Read only
Description	This attribute records the result of last port test executed on the OAM Ethernet port. The result can be one of the following values. ***pass***: the test passed ***fail***: the test failed ***neverRun***: the test has not been run ***running***: the test is running
Mib	OamEthernet
Values	running pass fail neverRun
Default	No default

COMPONENT Lp EDS1

Instance	Decimal (0..1)
Groups	GROUP Lp EDS1 Provisioned (Prov) GROUP Lp EDS1 OperationalStatus (OperStatus) GROUP Lp EDS1 OsiState (State) GROUP Lp EDS1 Operational (Oper)
Scope	Application
Description	*Lp/0 EDS1/n* The *EDS1* component controls a DS1 external timing port on a ***CPeD*** and ***CP*** Control Processor. The *EDS1* component can only be added under the *LP/0* component and only if the CP type is ***CPeD*** or ***CP***. The Control Processor supports up to two external timing ports.
Mib	ExternalTimingDS1
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp EDS1 Provisioned (Prov)

Properties	Provisioned

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Description

This group contains all of the provisioning data for an *EDS1* component.

Mib ExternalTimingDS1

ATTRIBUTE Lp EDS1 lineType (lineType)

Access Read and write

Description

This attribute defines the framing format of the DS1 line. The option ***d4*** defines a framing pattern of 12 frames per multiframe. The option ***esf*** defines a framing pattern of 24 frames per multiframe. The default option ***esf*** is permitted.

Mib ExternalTimingDS1

Values
d4
esf

Default esf

ATTRIBUTE Lp EDS1 ssmRxDefault

Access Read and write

Description

This attribute specifies the Synchronization Status Message (SSM) reported to the *NS* component.
If this attribute is set to ***none***, the SSM value received and decoded from the Extended Superframe Format (ESF) data link will be reported to the *NS* component. Note that the SSM messages can not be decoded when *lineType* is set to ***d4*** and in this case this attribute can not be set to ***none*** and the recommended value for this attribute is ***4***.
If this attribute is set to a valid SSM value then this value will be reported to *NS* component, regardless of the SSM value received and decoded from the ESF data link.
The valid SSM values are specified in the ANSI T1.403, bits 30-17:
2 (000010) - Stratum 1 Traceable
4 (000100) - Synchronized, Traceability Unknown
6 (000110) - Stratum 2 Traceable
8 (001000) - Stratum 3 Traceable
17 (010001) - SONET Minimum Clock Traceable
20 (010100) - Stratum 4 Traceable
24 (011000) - Do not use for Synchronization
32 (100000) - Reserved for Network synchronization
60 (111100) - Transmit Node Clock
62 (111110) - Stratum 3E Traceable

Mib ExternalTimingDS1

Values
Decimal (2; 4; 6; 8; 17; 20; 24; 32; 60; 62)
none

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Default	4

GROUP Lp EDS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	ExternalTimingDS1

ATTRIBUTE Lp EDS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	ExternalTimingDS1
Values	up down testing
Default	up

GROUP Lp EDS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	ExternalTimingDS1

ATTRIBUTE Lp EDS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — ExternalTimingDS1

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp EDS1 operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — ExternalTimingDS1

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp EDS1 usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	ExternalTimingDS1
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp EDS1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

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The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	ExternalTimingDS1
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp EDS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

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The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: ExternalTimingDS1

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp EDS1 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: ExternalTimingDS1

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp EDS1 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — ExternalTimingDS1

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp EDS1 standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

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The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib ExternalTimingDS1

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default notSet

ATTRIBUTE Lp EDS1 unknownStatus (osiUnknw)

Access Read only

Description This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib ExternalTimingDS1

Values
false
true

Default false

GROUP Lp EDS1 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for *EE1* and *EDS1* components.

Mib ExternalTimingDS1

ATTRIBUTE Lp EDS1 losAlarm (losAlarm)

Access Read only

Description

This attribute indicates whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 second . A LOS defect is detected upon observing all zeros for 150 ms . If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOS alarm

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state is cleared. The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 second.

Mib ExternalTimingDS1

Values
on
off

Default off

ATTRIBUTE Lp EDS1 lofAlarm (lofAlarm)

Access Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 second . If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 second.

Mib ExternalTimingDS1

Values
on
off

Default off

ATTRIBUTE Lp EDS1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 second. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurement based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 second.

Mib ExternalTimingDS1

Values
on
off

Default off

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ATTRIBUTE Lp EDS1 levelAlarm (level)

Access	Read only
Description	This attribute indicates the levelof EDS1/EE1 support present on the active CP and standby CP. The Level alarm is declared if the active CP or the standby CP cannot support the EDS1/EE1 functionality and EDS1 or EE1 port is provisioned. The EDS1/EE1 port goes into an operational state of ***disabled*** when the active CP hw does not support EDS1/EE1 functionality and it goes into an operational state of ***degraded*** when the standby CP hw does not support EDS1/EE1 functionality.
Mib	ExternalTimingDS1
Values	on off
Default	off

ATTRIBUTE Lp EDS1 ssmRx (ssmRx)

Access	Read only
Description	This attribute indicates the current Synchronization Status Message (SSM) received on the *EE1* or *EDS1* port or the *ssmRxDefault* value if no valid SSM was received. The *EE1* SSM is received on the E1 Sa Bits, and the possible values are [0..15]. The *EDS1* SSM is received on the Extended Superframe Format (ESF) data link, bits 17 - 30, and the valid values are [2,4,6,8,17,20,24,32,60,62].
Mib	ExternalTimingDS1
Values	Decimal (0..62)
Default	0

COMPONENT Lp EE1

Instance	Decimal (0..1)
Groups	GROUP Lp EE1 Provisioned (Prov) GROUP Lp EE1 OperationalStatus (OperStatus) GROUP Lp EE1 OsiState (State) GROUP Lp EE1 Operational (Oper)
Scope	Application
Description	*Lp/0 EE1/n* The *EE1* component controls an E1 external timing port on a ***CPeE*** and ***CP*** Control Processor. The *EE1* component can only be added under the

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LP/0 component and only if the CP type is ***CPeE*** or ***CP***. The Control Processor supports up to two external timing ports.

Mib: ExternalTimingE1

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp EE1 Provisioned (Prov)

Properties: Provisioned

Description:
This group contains all of the provisioning data for an *EE1* component.

Mib: ExternalTimingE1

ATTRIBUTE Lp EE1 rxSynchClk

Access: Read and write

Description: This attribute specifies if the E1 BITS port is receiving a 2.048 MHz square wave synchronization (analog) clock or an E1 data frame signal as input. A value of ***squareWave*** specifies that the analog clock is received. A value of ***e1Signal*** specifies the E1 data frame signal is received. The default value is ***e1Signal***. Note: The ***squareWave*** value is not supported on MSS 15000/20000 platform.

Mib: ExternalTimingE1

Values:
e1Signal
squareWave

Default: e1Signal

ATTRIBUTE Lp EE1 ssmRxDefault

Access: Read and write

Description:
This attribute specifies the default Synchronization Status Message (SSM) used when *EE1* can not detect SSM because *ssmE1SaNumber* is set to ***none***. The valid values are specified in the ITU G.704.

Mib: ExternalTimingE1

Values: Decimal (0..15)

Default: 0

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ATTRIBUTE Lp EE1 ssmE1SaNumber (s1Sa)

Access	Read and write
Description	This attribute specifies which of the five available Sa Bits (Sa4 to Sa8) recommended in ITU G.704 are to be used for Synchronization Status Message (SSM). The reception of SSM is disabled on this port if this attribute is set to ***none***, or if *rxSynchClk* attribute is set to ***squareWave,*** or if *crc4Mode* attribute is set to ***off***.
Mib	ExternalTimingE1
Values	Decimal (4..8) none
Default	none

ATTRIBUTE Lp EE1 crc4Mode

Access	Read and write
Description	This attribute specifies whether the CRC-4 checking on the E1 line is enabled or disabled.
Mib	ExternalTimingE1
Values	on off
Default	off

GROUP Lp EE1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	ExternalTimingE1

ATTRIBUTE Lp EE1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	ExternalTimingE1
Values	up down testing
Default	up

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GROUP Lp EE1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	ExternalTimingE1

ATTRIBUTE Lp EE1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	ExternalTimingE1
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp EE1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: ExternalTimingE1

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp EE1 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: ExternalTimingE1

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp EE1 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

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The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	ExternalTimingE1
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

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ATTRIBUTE Lp EE1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	ExternalTimingE1
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp EE1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — ExternalTimingE1

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Lp EE1 alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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Mib	ExternalTimingE1
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp EE1 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	ExternalTimingE1
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp EE1 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

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The value ***true*** indicates that the actual state of the component is not known for sure.

Mib ExternalTimingE1

Values
false
true

Default false

GROUP Lp EE1 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for *EE1* and *EDS1* components.

Mib ExternalTimingE1

ATTRIBUTE Lp EE1 losAlarm (losAlarm)

Access Read only

Description

This attribute indicates whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 second . A LOS defect is detected upon observing all zeros for 150 ms . If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 second.

Mib ExternalTimingE1

Values
on
off

Default off

ATTRIBUTE Lp EE1 lofAlarm (lofAlarm)

Access Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 second . If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** until the LOF alarm

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state is cleared. The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 second.

Mib ExternalTimingE1

Values
on
off

Default off

ATTRIBUTE Lp EE1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 second. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurement based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 second.

Mib ExternalTimingE1

Values
on
off

Default off

ATTRIBUTE Lp EE1 levelAlarm (level)

Access Read only

Description

This attribute indicates the levelof EDS1/EE1 support present on the active CP and standby CP. The Level alarm is declared if the active CP or the standby CP cannot support the EDS1/EE1 functionality and EDS1 or EE1 port is provisioned. The EDS1/EE1 port goes into an operational state of ***disabled*** when the active CP hw does not support EDS1/EE1 functionality and it goes into an operational state of ***degraded*** when the standby CP hw does not support EDS1/EE1 functionality.

Mib ExternalTimingE1

Values
on
off

Default off

ATTRIBUTE Lp EE1 ssmRx (ssmRx)

Access Read only

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Description	This attribute indicates the current Synchronization Status Message (SSM) received on the *EE1* or *EDS1* port or the *ssmRxDefault* value if no valid SSM was received. The *EE1* SSM is received on the E1 Sa Bits, and the possible values are [0..15]. The *EDS1* SSM is received on the Extended Superframe Format (ESF) data link, bits 17 - 30, and the valid values are [2,4,6,8,17,20,24,32,60,62].
Mib	ExternalTimingE1
Values	Decimal (0..62)
Default	0

COMPONENT Lp PCUServicesProcessor (Pcusp)

Groups	GROUP Lp Pcusp OsiState (State) GROUP Lp Pcusp Operational (Oper)
Scope	Device
Description	*Lp/n PCUServicesProcessor* This component contains a group of processing modules on a Packet Control Unit Services Processor FP. When added, the *ProcessingModule* subcomponents are added automatically. For the ***12mPcusp*** card, there are 12 *PModule*s added.
Mib	Pcusp
Subcomponents	COMPONENT Lp Pcusp ProcessingModule (PModule)
Dyn. Subcomp.	COMPONENT Lp Pcusp Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Pcusp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Pcusp

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ATTRIBUTE Lp Pcusp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Pcusp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Pcusp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Pcusp
Values	enabled (ena) disabled (dis)
Default	disabled

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ATTRIBUTE Lp Pcusp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Pcusp
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Pcusp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

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The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Pcusp
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Pcusp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The

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operationalState is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Pcusp
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Pcusp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	Pcusp
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Pcusp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Pcusp
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Pcusp standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Pcusp
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Pcusp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Pcusp
Values	false true
Default	false

GROUP Lp Pcusp Operational (Oper)

Properties	Operational
Description	This group contains status information about the *Pcusp* component.
Mib	Pcusp

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ATTRIBUTE Lp Pcusp standbyPModulesStatus (stdbPmod)

Access	Read only
Description	This attribute indicates an overview of the status of *Pmodule* component on the standby PCUSP card. The various attribute values are: ***available*** ***cantLoadFirmware*** - A *PModule* component has been detected, but the firmware load operation failed. ***failedDiagnostics*** - The diagnostics cycle has completed and an error has been detected within the *PModule* component. ***mismatched*** - The *insertedModuleType* attribute of the *PModule* component does not match its provisioned *moduleType* attribute. ***connectivityFailed*** - The test cycle has run and an error was detected on one *PBlock*s component within the *PModule* component. ***notResponding*** - One *PBlock* within the *PModule* component is not responding. ***reset InProgress*** - The *PModule* component is resetting.
Mib	Pcusp
Vector of	available cantLoadFirmware failedDiagnostic mismatched connectivityFailed notResponding resetInProgress notAvailable
Index	Decimal (1..12)
Default	([12] notAvailable)

COMPONENT Lp Pcusp ProcessingModule (PModule)

Instance	Decimal (1..12)
Groups	GROUP Lp Pcusp PModule Provisioned (Prov) GROUP Lp Pcusp PModule OsiState (State) GROUP Lp Pcusp PModule Operational (Oper)
Scope	Device
Description	*Lp/n Pcusp ProcessingModule/n* A *ProcessingModule* (*PModule*) represents a single voice/data processing

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module on a Packet Control Unit Services Processor (PCUSP) FP. The *PModule* are automatically added when the *Pcusp* is provisioned.

Mib	Pcusp
Dyn. Subcomp.	COMPONENT Lp Pcusp PModule ProcessingBlock (PBlock)
Common Verbs	Help List Display Add

VERB RESET Lp Pcusp PModule

Impact	Service
Description	*Lp/n Pcusp ProcessingModule RESET* The *Reset* verb is used to reset a processing module. It can be used when a failure has occured on a signal processing module.

GROUP Lp Pcusp PModule Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *ProcessingModule*.
Mib	Pcusp

ATTRIBUTE Lp Pcusp PModule moduleType (modType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of Processing Module expected for this *ProcessingModule* instance. The module types are: ***none*** - No module has been detected. ***spm*** - A module type of SPM has been detected.
Mib	Pcusp
Values	none spm
Default	spm

GROUP Lp Pcusp PModule OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For

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component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — Pcusp

ATTRIBUTE Lp Pcusp PModule adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Pcusp

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Lp Pcusp PModule operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Pcusp

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Lp Pcusp PModule usageState (osiUsage)

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Pcusp
Values	idle active (activ) busy
Default	idle

GROUP Lp Pcusp PModule Operational (Oper)

Properties	Operational
Description	This group indicates operational information on the *ProcessingModule*.
Mib	Pcusp

ATTRIBUTE Lp Pcusp PModule insertedModuleType (insModType)

Access	Read only
Description	This attribute indicates the type of *ProcessingModule* currently present in the physical position on a Packet Control Unit Services Processor FP. The module types are: ***spm -*** A module type of Signal Processing Module has been detected. ***none*** - No module has been detected. ***unknown*** - The module is of a type not known by the software.
Mib	Pcusp
Values	none unknown spm
Default	No default

ATTRIBUTE Lp Pcusp PModule productCode (prc)

Access	Read only
Description	This attribute indicates the product engineering code and release of the *ProcessingModule*.
Mib	Pcusp

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Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Lp Pcusp PModule failureCause (failCause)

Access	Read only
Description	This attribute indicates the reason why the *ProcessingModule* has failed. The various failure causes are: ***none*** - There is no failure. ***cantLoadFirmware*** - A *PModule* has been detected, but the firmware load operation failed. ***failedDiagnostics*** - The diagnostics cycle has completed and an error has been detected within the *PModule*. ***mismatched*** - The *insertedModuleType* of the *PModule* does not match its provisioned *moduleType*. ***connectivityFailed*** - The test cycle has run and an error was detected on one *PBlock*s within the *PModule*. ***notResponding*** - One *PBlock* within the *PModule* is not responding. ***reset InProgress*** - The *PModule* is resetting.
Mib	Pcusp
Values	none cantLoadFirmware failedDiagnostics mismatched connectivityFailed notResponding resetInProgress
Default	none

COMPONENT Lp Pcusp PModule ProcessingBlock (PBlock)

Instance	Decimal (1..2)
Groups	GROUP Lp Pcusp PModule PBlock Operational (Oper) GROUP Lp Pcusp PModule PBlock PBlockStatistics (Stats)
	COLLECTED STATS LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock
Scope	Device
Description	*Lp/n Pcusp PModule/n ProcessingBlock/n* This dynamic component represents a Processing Block within a *ProcessingModule*. The Processing Block is the smallest unit on the PCUSA card on which

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different Data Processing software sets may be loaded, or on which diagnostics may be performed.

Mib	Pcusp
Common Verbs	Help List Display

GROUP Lp Pcusp PModule PBlock Operational (Oper)

Properties	Operational
Description	This group contains status information about the *ProcessingBlock*.
Mib	Pcusp

ATTRIBUTE Lp Pcusp PModule PBlock serviceList (servList)

Access	Read only
Description	This attribute indicates which *Pcusa/n Conn/n PcmLink* components have allocated timeslot resources on this *ProcessingBlock*.
Mib	Pcusp
List of	The name of the component
Default	No default

GROUP Lp Pcusp PModule PBlock PBlockStatistics (Stats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusp

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtil (util)

Access	Read only
Description	This attribute indicates the current load of the SPM MPC processor.
Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilAvg (avg)

Access	Read only
Description	This attribute indicates the average PBlock CPU load.
Mib	Pcusp

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Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMin (min)

Access	Read only
Description	This attribute indicates the minimum PBlock CPU load.
Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMax (max)

Access	Read only
Description	This attribute indicates the maximum PBlock CPU load.
Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Pcusp PModule PBlock memoryUsage (mem)

Access	Read only
Description	This attribute indicates the percentage of RAM memory used by the PCU application.
Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default
Default	COLLECTED STATS LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock
Description	The statistics record generated by the LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock component.

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilAvg (avg)

Description	This attribute indicates the average PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)

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Units	%

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMin (min)

Description	This attribute indicates the minimum PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMax (max)

Description	This attribute indicates the maximum PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)
Units	%

COMPONENT Lp Pcusp Test (Test)

Groups	GROUP Lp Pcusp Test OsiState (State) GROUP Lp Pcusp Test Setup (Setup) GROUP Lp Pcusp Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	Pcusp
Common Verbs	Help List Display

VERB START Lp Pcusp Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Pcusp Test

Impact	Service
Description	This command stops a test running on the hardware component.

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GROUP Lp Pcusp Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Pcusp

ATTRIBUTE Lp Pcusp Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Pcusp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Pcusp Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Pcusp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Pcusp Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Pcusp
Values	idle active (activ) busy
Default	idle

GROUP Lp Pcusp Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Pcusp

ATTRIBUTE Lp Pcusp Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Pcusp
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Pcusp Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include

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the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Pcusp

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Pcusp Test frmSize (size)

Access: Read and write

Description:

This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

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Mib	Pcusp
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Pcusp Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Pcusp
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Pcusp Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Pcusp
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Pcusp Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.

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Mib	Pcusp
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Pcusp Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Pcusp
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Pcusp Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Pcusp
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Pcusp Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Pcusp

ATTRIBUTE Lp Pcusp Test causeOfTermination

Access	Read only

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Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.
Mib	Pcusp
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed

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patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp Pcusp Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Pcusp

Values Long Integer

Default No default

ATTRIBUTE Lp Pcusp Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Pcusp

Values Long Integer

Default No default

ATTRIBUTE Lp Pcusp Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Pcusp

Values Long Integer

Default No default

ATTRIBUTE Lp Pcusp Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

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Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test bitErrorRate

Access	Read only

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Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Pcusp
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Pcusp Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Pcusp
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Pcusp Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Pcusp
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

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COMPONENT Lp MultiLinkFrameRelay (Mlfr)

Instance	Decimal (0..111)
Groups	GROUP Lp Mlfr Provisioned (Prov) GROUP Lp Mlfr Operational (Oper) GROUP Lp Mlfr Statistics (Stats) GROUP Lp Mlfr CustomerIdentifierData (CidData) GROUP Lp Mlfr OsiState (State)
Scope	Application
Description	*Lp/n MultiLinkFrameRelay/n* This component represents a group of DS1 links, called a bundle. Multi-Link Frame Relay (MLFR) provides a data rate greater than DS1 and less than DS3, in increments of DS1. The *Mlfr* component may be created only if the *cardType* is .
Mib	Mlfr
Subcomponents	COMPONENT Lp Mlfr Link (Lk)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Mlfr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Mlfr* component.
Mib	Mlfr

ATTRIBUTE Lp Mlfr applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies the link to the *Framer* component using the *Mlfr component*. An example is *Framer/3*.
Mib	Mlfr
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp Mlfr activationClass (actClass)

Access	Read and write

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Description	This attribute specifies the conditions under which the bundle is activated. There are four classes of activation: ***class A***: One or more bundle links are up. ***class B***: All bundle links are up. ***class C***: A minimum threshold is provisioned. The threshold represents the minimum number of bundle links that must up.
Mib	Mlfr
Values	classA classB classC
Default	classA

ATTRIBUTE Lp Mlfr activationThreshold (thresh)

Access	Read and write
Description	This attribute specifies the minimum number of links that must be up before the bundle will be up. The value of this attribute is only used when the *activationClass* attribute is set to ***classC***.
Mib	Mlfr
Values	Decimal (1..28)
Default	1

ATTRIBUTE Lp Mlfr maxDiffDelay (delay)

Access	Read and write
Description	This attribute specifies the maximum acceptable round-trip differential delay between links in the MLFR bundle. An alarm is generated for links violating the maximum differential delay. Such links are not allowed to remain up.
Mib	Mlfr
Values	Decimal (20..600)
Units	msec
Default	132

ATTRIBUTE Lp Mlfr helloTimer (hello)

Access	Read and write
Description	This attribute specifies the amount of time between consecutive HELLO messages, sent on each link that is up.
Mib	Mlfr
Values	Decimal (1..180)
Units	seconds

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Default	10

ATTRIBUTE Lp Mlfr ackTimer (ack)

Access	Read and write
Description	This attribute specifies the maximum time period to wait for an ADD_LINK_ACK, HELLO_ACK, or REMOVE_LINK_ACK message. If *ackTimer* expires before a bundle link endpoint receives a HELLO_ACK or ADD_LINK_ACK message, then every *ackTimer* seconds a HELLO message is sent and every (*maxRetries* + 1) **ackTimer* seconds an ADD_LINK message is sent. If *ackTimer* expires before a bundle link endpoint receives a REMOVE_LINK_ACK message, then every *ackTimer* seconds a HELLO message is sent and after (*maxRetries* + 1) **ackTimer* seconds the bundle link enters in idle state.
Mib	Mlfr
Values	Decimal (1..10)
Units	seconds
Default	4

ATTRIBUTE Lp Mlfr maxRetries (retries)

Access	Read and write
Description	This attribute specifies the maximum number of retransmission attempts for consecutive HELLO or REMOVE_LINK messages following the expiration of *ackTimer*.
Mib	Mlfr
Values	Decimal (1..5)
Default	2

ATTRIBUTE Lp Mlfr fragmenting (frag)

Access	Read and write
Description	This attribute specifies whether fragmentation of transmitted frames is permitted. If the value is ***enabled***, frames which are at least *fragmentingThreshold* octets in length are divided into fragments which are at most *fragmentSize* octets long. The value enabled may be used only if the remote end can accept fragmented frames. If the value is ***disabled***, frames are always transmitted without fragmentation. Fragmentation of received frames is always acceptable, regardless of the value of this attribute.
Mib	Mlfr
Values	enabled disabled
Default	disabled

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ATTRIBUTE Lp Mlfr fragmentSize (fragSize)

Access	Read and write
Description	This attribute specifies the fragment size. A frame is divided in data fragments which are sent over different links in a bundle. The fragment size is configured in the transmitter, and two peer transmitters need not use the same fragment size. The value of this attribute is only used when the *fragmenting* attribute is set to ***enabled***.
Mib	Mlfr
Values	Decimal (10..8000)
Units	octets
Default	128

ATTRIBUTE Lp Mlfr fragmentingThreshold (fragTresh)

Access	Read and write
Description	This attribute specifies the minimum size a frame must have in order to be fragmented. The value of this attribute is only used when the *fragmenting* attribute is set to ***enabled***. Frames smaller than this size will not be fragmented. The *fragmentingThreshold* value must be bigger or equal to *fragmentSize* value.
Mib	Mlfr
Values	Decimal (10..8000)
Units	octets
Default	192

ATTRIBUTE Lp Mlfr resequenceTimer (reseqTim)

Access	Read and write
Description	This attribute specifies the interval of time to wait for receiving out-of-order fragments and frames.
Mib	Mlfr
Values	Decimal (20..132)
Units	msec
Default	50

GROUP Lp Mlfr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Mlfr* component.
Mib	Mlfr

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ATTRIBUTE Lp Mlfr remoteName (remName)

Access	Read only
Description	This attribute indicates the name of the remote bundle, as it was received from the *Link* component.
Mib	Mlfr
Values	String (1..49, ASCII)
Default	No default

GROUP Lp Mlfr Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Mlfr* component.
Mib	Mlfr

ATTRIBUTE Lp Mlfr runningTime (running)

Access	Read only
Description	This attribute counts the length of time for which the *Mlfr* component has been in the ***unlocked*** state or has been used for operational testing. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Mlfr unavailSec (unavail)

Access	Read only
Description	This attribute counts the length of time for which the *Mlfr* component has been ***unlocked*** and ***disabled***. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Mlfr resequenceErrors (reseqErr)

Access	Read only
Description	This attribute counts the resequencing errors. These are the errors caused by lost or duplicated frames or data fragments. When the maximum count

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	is exceeded, the count wraps to zero. For example, sequence number 56, 59 and 60 are received for DLCI 100. It is decided by some means that sequence 57 and 58 are lost. This counter would then be incremented by one, even though two frames were lost.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr discardedFrames (discFrames)

Access	Read only
Description	This attribute counts frames and fragments discarded by the receiver bundle due to re sequencing errors. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp Mlfr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Mlfr

ATTRIBUTE Lp Mlfr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

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Mib	Mlfr
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Mlfr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Mlfr

ATTRIBUTE Lp Mlfr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Mlfr
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Mlfr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Mlfr
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Mlfr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Mlfr
Values	idle active (activ) busy
Default	idle

COMPONENT Lp Mlfr Link (Lk)

Instance	Decimal (0..27)
Groups	GROUP Lp Mlfr Lk Provisioned (Prov) GROUP Lp Mlfr Lk Operational (Oper) GROUP Lp Mlfr Lk Statistics (Stats) GROUP Lp Mlfr Lk OsiState (State)
Scope	Application

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Description	*Lp/n Mlfr/n Link/m* This component is used to define a DS1 link belonging to an *Mlfr* component.
Mib	Mlfr
Common Verbs	Help List Display Add DELete

GROUP Lp Mlfr Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Mlfr

ATTRIBUTE Lp Mlfr Lk interfaceName

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Link* subcomponent associated with a specific interface on a function processor, for example: *Lp/5 Ds3/0 Ds1/3 Chan/0*. The following checks are performed: 1. The *Link*'s *interfaceName* must link to a *DS1 Channel/0* component on the same *Lp* as the *Mlfr* component. 2. All the *Link*s of the same *Mlfr* component must be bound to *DS1 Channel/0* components under the same *DS3*. 3. All the *Link*s of the same *Mlfr* component must be bound to *DS1 Channel/0* components having the same value for *timeslotDataRate*. 4. All the 24 timeslots of the *DS1 Channel/0* component must be provisioned.
Mib	Mlfr
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Lp Mlfr Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Mlfr

ATTRIBUTE Lp Mlfr Lk errorCause (cause)

Access	Read only

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Description	This attribute indicates the error cause on the near end of this link. Possible values are: ***noError***: there is no error on the near end of this link. ***inconsistentBundle***: Possible configuration mismatch detected for the remote name of the MLFR bundle. ***unknownVendor***: Unrecognized Organizationally Unique Identifier (OUI) received. ***linkIdle***: The link is not *operational*. ***linkDown***: The link physical layer is *down*. ***diffDelay***: The link differential delay exceeds the maximum allowed. ***loopbackDetected***: The link has detected a potential loopback condition. ***unexpectedAddLink***: An ADD_LINK message was received when the link was up.
Mib	Mlfr
Values	noError inconsistentBundle unknownVendor linkIdle linkDown diffDelay loopbackDetected other unexpectedAddLink
Default	No default

ATTRIBUTE Lp Mlfr Lk remoteCause (remCause)

Access	Read only
Description	This attribute indicates the error cause on the far end of his link. Possible values are: ***noError***: there is no error on the far end of this link. ***inconsistentBundle***: Possible configuration mismatch detected for the remote name of the MLFR bundle. ***unknownVendor***: Unrecognized Organizationally Unique Identifier (OUI) received. ***linkIdle***: The link is not *operational*. ***linkDown***: The link physical layer is *down*. ***diffDelay***: The link differential delay exceeds the maximum allowed. ***loopbackDetected***: The link has detected a potential loopback condition. ***unexpectedAddLink***: An ADD_LINK message was received when the link was up. ***“”***: No error cause was received yet from the far end.
Mib	Mlfr
Values	noError inconsistentBundle unknownVendor linkIdle

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	linkDown diffDelay loopbackDetected other unexpectedAddLink
Default	No default

ATTRIBUTE Lp Mlfr Lk remoteName (remName)

Access	Read only
Description	This attribute indicates the name of the remote link.
Mib	Mlfr
Values	String (1..49, ASCII)
Default	No default

ATTRIBUTE Lp Mlfr Lk diffDelay (diff)

Access	Read only
Description	This attribute indicates the differential delay between this link and the link, in the same MLFR bundle, having the least delay. The value ***notMeasured*** means that the relative delay could not be measured. This can be due to physical layer problems or to no MLFR Link Integrity Protocol (LIP) messages being received on the link.
Mib	Mlfr
Values	Decimal (0..4294967294) notMeasured
Units	msec
Default	No default

GROUP Lp Mlfr Lk Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Link* subcomponent.
Mib	Mlfr

ATTRIBUTE Lp Mlfr Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time for which the *Link* component has been in the *unlocked* state or has been used for operational testing. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr

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Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Mlfr Lk unavailSec (unavail)

Access	Read only
Description	This attribute counts the length of time for which the *Link* component has been ***unlocked*** and out of service. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Mlfr Lk failures (fail)

Access	Read only
Description	This attribute counts the number of failures that the *Link* component has experienced since being created. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk framesLipTx (lipTx)

Access	Read only
Description	This attribute counts the number of Link Integrity Protocol (LIP) frames sent on the link. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk framesLipRx (lipRx)

Access	Read only
Description	This attribute counts the number of LIP frames received on the link. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk framesLipInvalid (lipInv)

Access	Read only
Description	This attribute counts the number of invalid LIP frames received on the link. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk timerExpired (timExp)

Access	Read only
Description	This attribute counts the number of times the HELLO or ACK timers expired. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk loopback (loop)

Access	Read only
Description	This attribute counts the number of times a loopback has been suspected on the link. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk mismatch (mis)

Access	Read only
Description	This attributes counts the number of times far end bundle name doesn't correspond to *remoteName* for *Mlfr* component. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

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GROUP Lp Mlfr Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Mlfr

ATTRIBUTE Lp Mlfr Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Mlfr
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Mlfr Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Mlfr
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Mlfr Lk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Mlfr
Values	idle active (activ) busy
Default	idle

COMPONENT Lp AdjunctProcessor (Ap)

Instance	Decimal (0..31)
Groups	GROUP Lp Ap OsiState (State) GROUP Lp Ap Properties (Prop) GROUP Lp Ap Utilization (Util)
Scope	Device
Description	*Lp/n Ap/n* This component represents an Adjunct Processor on a Functional Processor (FP).
Mib	AdjunctProcessor
Dyn. Subcomp.	COMPONENT Lp Ap RncApplication (RncAp)
Common Verbs	Help List Display

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VERB RESET Lp Ap

Impact	Service
Description	*Reset Lp/n Ap/m* This command is used to reset a single adjunct processor card. Resetting a processor card implies: (1) resetting the hardware (as if the card had just been powered on), (2) performing the card's self-tests, and (3) reloading the software..

GROUP Lp Ap OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AdjunctProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Lp Ap operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AdjunctProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Ap usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AdjunctProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Ap availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	AdjunctProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Ap proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	AdjunctProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Ap controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	AdjunctProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Ap alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	AdjunctProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Ap standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	AdjunctProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Ap unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	AdjunctProcessor
Values	false true
Default	false

GROUP Lp Ap Properties (Prop)

Properties	Operational
Description	This group contains the operational attributes which specify characteristics of the Adjunct Processor.
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap productCode (pec)

Access	Read only
Description	This attribute indicates the product code for the Adjunct Processor.
Mib	AdjunctProcessor
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Lp Ap serialNumber

Access	Read only
Description	This attribute indicates the Adjunct Processor serial number.
Mib	AdjunctProcessor
Values	String (0..16, ASCII)

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Default	No default

ATTRIBUTE Lp Ap memoryCapacity

Access	Read only
Description	This attribute indicates the total amount of memory present on the Adjunct Processor.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockCapacity

Access	Read only
Description	This attribute indicates the Adjunct Processor's shared message block memory capacity.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockCapacity

Access	Read only
Description	This attribute indicates the Adjunct Processor's local message block memory capacity. These message blocks are used for local messaging on the card.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap ipAddress (ipAddr)

Access	Read only
Description	This attribute indicates the IP address of the Adjunct Processor.
Mib	AdjunctProcessor
Values	IP address
Default	No default

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GROUP Lp Ap Utilization (Util)

Properties	Operational
Description	This group contains the operational attributes that specify the Adjunct Processor's utilization levels.
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap cpuUtilization (cpuUtil)

Access	Read only
Description	This attribute indicates an approximation of the current Adjunct Processor utilization level.
Mib	AdjunctProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Ap memoryUtilization

Access	Read only
Description	This attribute indicates the Adjunct Processor's current memory utilization.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockUsage

Access	Read only
Description	This attribute indicates the Adjunct Processor's current shared message block memory utilization.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the Adjunct Processor's average memory utilization of shared message blocks, over the past 15 minutes. This utilization value is calculated using 15 second samples.

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Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockUsageAvgMin

Access	Read only
Description	This attribute indicates the Adjunct Processor's minimum memory utilization of shared message blocks, over the past 15 minutes. This utilization value is calculated using 15 second samples.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockUsageAvgMax

Access	Read only
Description	This attribute indicates the Adjunct Processor's maximum memory utilization of shared message blocks, over the past 15 minutes. This utilization value is calculated using 15 second samples.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockUsage

Access	Read only
Description	This attribute indicates the Adjunct Processor's current memory utilization of message blocks which are used for local messaging on the card.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockUsageAvg

Access	Read only

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Description	This attribute indicates the Adjunct Processor's average memory utilization of message blocks used for local messaging on the card over the past 15 minutes. This utilization value is calculated using 15 second samples.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockUsageAvgMax

Access	Read only
Description	This attribute indicates the Adjunct Processor's maximum memory utilization of message blocks used for local messaging on the card over the past 15 minutes. This utilization value is updated at 15 second intervals.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockUsageAvgMin

Access	Read only
Description	This attribute indicates the Adjunct Processor's minimum memory utilization of message blocks used for local messaging on the card over the past 15 minutes. This utilization value is updated at 15 second intervals.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

COMPONENT Lp Ap RncApplication (RncAp)

Groups	GROUP Lp Ap RncAp Operational (Oper) GROUP Lp Ap RncAp Status (Stats)
Scope	Device

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Description	*Lp/n Ap/n RncApplication* This component represents an RNC application running on this Adjunct Processor.
Mib	AdjunctProcessor
Common Verbs	Help List Display

GROUP Lp Ap RncAp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of *RncApplication*.
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap RncAp processorRole (role)

Access	Read only
Description	This attribute indicates the functional behavior of the Adjunct Processor. Possible values are: - ***none*** indicates that this Adjunct Processor has not been assigned a role yet. This value is only attained when the Adjunct Processor is disabled or just after it has become enabled. Within a few minutes at most, the role will take on one of the 4 pending values, and quickly change the corresponding permanent value. - ***protocolConverterPending*** indicates that initialization of the Adjunct Processor is still in progress. Once initialization is complete, the role will take on the value of protocolConverter. - ***radioAccessBearerPending*** indicates that initialization of the Adjunct Processor is still in progress. Once initialization is complete, the role will take on the value of radioAccessBearer. - ***activeMasterPending*** indicates that initialization of the Adjunct Processor is still in progress. Once initialization is complete, the role will take on the value of activeMaster. - ***standbyMasterPending*** indicates that initialization of the Adjunct Processor is still in progress. Once initialization is complete, the role will take on the value of standbyMaster. - ***protocolConverter*** indicates that this Adjunct Processor is responsible for converting packets to and from AAL2 for Iub and IuCS. - ***radioAccessBearer*** indicates that this Adjunct Processor is responsible for supporting all radio protocols. - ***activeMaster*** indicates that this Adjunct Processor handles all shelf-wide Packet Server support. - ***standbyMaster*** indicates that this Adjunct Processor is a spare for the activeMaster. - ***activeNetworkInterfacePending*** indicates that the initialization of this Adjunct Processor is still in progress, once the initialization is completed, this processor will be the active Network Interface. - ***standbyNetworkInterfacePending*** indicates that the initialization of this

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	Adjunct Processor is in progress and once the initilization is completed, this processor will be the standbyNetwork Interface. - ***activeNetworkInterface*** indicates that this Adjunct Processor is an active NetworkInterface. - ***standbyNetworkInterface*** indicates that this Adjunct Processor is a spare for the active NetworkInterface. - ***activeOmu***indicates that this Adjunct Processor is an active OMU. - ***standbyOmu*** indicates that this Adjunct Processor is a spare for the active OMU. - ***activeOmuPending*** indicates that the initialization of this Adjunct Processor is in progress and once the initilization is completed, this processor will be the activeOmu. - ***standbyOmuPending*** indicates that the initialization of this Adjunct Processor is in progress and once the initilization is completed, this processor will be the standbyOmu. - ***tmu*** indicates that this Adjunct Processor is an active TMU. - ***tmuPending*** indicates that he initialization of this Adjunct Processor is in progress and once the initilization is completed, this processor will be a TMU.
Mib	AdjunctProcessor
Set of	none (none) radioAccessBearer (rab) protocolConverter (pc) activeMaster (aMaster) standbyMaster (sMaster) radioAccessBearerPending (rabPend) protocolConverterPending (pcPend) activeMasterPending (aMstPend) standbyMasterPending (sMstPend) activeNi (aNi) standbyNi (sNi) activeNiPending (aNiPend) standbyNiPending (sNiPend) activeOmu (aOmu) standbyOmu (sOmu) activeOmuPending (aOmuPend) standbyOmuPending (sOmuPend) tmu (tmu) tmuPending (tmuPend)
Default	No default

ATTRIBUTE Lp Ap RncAp processorInstance (instance)

Access	Read only
Description	This attribute indicates the instance number associated with the processor. The instance number does not indicate any special type of role. - ***na*** indicates that instance numbers for this processor is not applicable. - ***unknown*** indicates that a instance number has not yet been assigned to

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the processor.

Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	0

GROUP Lp Ap RncAp Status (Stats)

Properties	Operational
Description	This group contains the operational attributes of Status
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap RncAp numOfSparedCells (sparedCell)

Access	Read only
Description	This attribute counts the number of spared cells that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.
Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	0

ATTRIBUTE Lp Ap RncAp numOfUnSparedCells (unSparedCell)

Access	Read only
Description	This attribute counts the number of unspared cells that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.
Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	0

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ATTRIBUTE Lp Ap RncAp numOfCalls (numCall)

Access	Read only
Description	This attribute counts the number of calls that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.
Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	0

ATTRIBUTE Lp Ap RncAp numOfSparedPaths (sparedPath)

Access	Read only
Description	This attribute counts the number of spared paths that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.
Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	0

ATTRIBUTE Lp Ap RncAp numOfUnSparedPaths (unsparedPath)

Access	Read only
Description	This attribute counts the number of unspared paths that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.
Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	5

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COMPONENT Lp NetworkProcessingUnit (Npu)

Groups	GROUP Lp Npu Provisioned (Prov)
Scope	Device
Description	*Lp NetworkProcessingUnit* (*Npu*) This component contains the attributes that are associated with the NetworkProcessingUnit (NPU) device on board a Generic Queue Manager (GQM) based card. The NPU is a specialized device that can process data packets at a high data rate. This component is allowed and is mandatory only for the following card types: ***16pOC3PosAtm*** This component must not be used with other card types which do not allow the provisioning of an *Npu* component.
Mib	NetworkProcessingUnit
Common Verbs	Help List Display Add DELete

GROUP Lp Npu Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Npu* component.
Mib	NetworkProcessingUnit

ATTRIBUTE Lp Npu serviceBundleName (sbn)

Access	Read and write
Description	This attribute specifies the name of the service bundle to be used for a ***16pOC3PosAtm*** card. The ***16pOC3PosAtm*** card is the only card that requires the provisioning of the *Npu* component which contains this attribute. For a ***16pOC3PosAtm*** card, this attribute must be set to one of the followings: ***allServices*** ***mplsAtmIp*** ***porsAtmIp*** Both the ***mplsAtmIp*** and ***porsAtmIp*** bundles have support for the ***atmCore***, ***ip***, and ***atmTrunks*** features. Service bundle ***mplsAtmIp***, in addition, supports all the MPLS related features including ***mplsLdp***, ***mplsRsvpTe***, ***mplsStaticLsp***, ***mplsTeEmulation***, ***l2vpnAtmAccessFpSp*** and ***rfc2547bis***. This service bundle does not support the ***porsTrunk*** feature. Service bundle ***porsAtmIp***, in addition, supports the ***porsTrunk*** feature. This service bundle does not support any of the MPLS features. Service bundle ***allServices*** has no feature support restrictions. It supports

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all the services that run on the card. This service bundle cannot be used with cards whose product code start with NTHW44. Because ***allServices*** has support for all the services that run on the card, it is the service bundle of choice for the ***16pOC3PosAtm*** cards whose product code do not start with NTHW44. However, one of ***mplsAtmIp*** or ***porsAtmIp*** must be used on a card if there is a need to have it interchangeable with a card having product code NTHW44.
The *serviceBundleName* attribute has a default setting of ***serviceBundleNotDefined***. The user must change this setting to a valid service bundle that is appropriate for the card and can support the features in the *Sw Lpt featurelist* attribute.
A change to the ***serviceBundleName*** attribute is a critical change to the *Lp* component only on cards whose product code start with NTHW44.

Mib	NetworkProcessingUnit
Values	serviceBundleNotDefined allServices mplsAtmIp porsAtmIp
Default	serviceBundleNotDefined

COMPONENT Lp Sets

Instance	Decimal (0..1)
Groups	GROUP Lp Sets Provisioned (Prov) GROUP Lp Sets OperationalStatus (OperStatus) GROUP Lp Sets OsiState (State) GROUP Lp Sets SetsOperational (SetsOper)
Scope	Application
Description	*Lp/0 sets/n* The Sync Equipment Timing Source (*Sets)* component controls an the E1 external timing port on a ***CP***. The port provides timing towards a 2 MHz (2 Mbit/s) station clock output signal. The *Sets* componentcan only be added under the *LP/0* component and only if the CP type is ***CP***.
Mib	ExternalTimingE1
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Lp Sets Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *Sets* component.
Mib	ExternalTimingE1

ATTRIBUTE Lp Sets txSynchClk

Access	Read and write
Description	This attribute specifies if the *Sets* port is transmitting a 2.048 MHz square wave synchronization (analog) clock or a E1 data frame signal as output. A value of ***squareWave*** indicates that the analog clock is transmitted. A value of ***e1Signal*** indicates the E1 data frame signal is transmitted.
Mib	ExternalTimingE1
Values	e1Signal squareWave
Default	e1Signal

ATTRIBUTE Lp Sets ssmE1SaNumber (ssmSa)

Access	Read and write
Description	This attribute specifies which of the five available Sa bits (Sa4 to Sa8) recommended in ITU G.704 are to be used for sending the Synchronization Status Messages (SSM). If set to ***none***, the transmission of SSM is disabled on this port.
Mib	ExternalTimingE1
Values	Decimal (4..8) none
Default	none

GROUP Lp Sets OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	ExternalTimingE1

ATTRIBUTE Lp Sets snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates

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the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib ExternalTimingE1

Values
up
down
testing

Default up

GROUP Lp Sets OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib ExternalTimingE1

ATTRIBUTE Lp Sets adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib ExternalTimingE1

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

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ATTRIBUTE Lp Sets operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	ExternalTimingE1
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sets usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	ExternalTimingE1
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sets availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	ExternalTimingE1
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sets proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	ExternalTimingE1
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sets controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	ExternalTimingE1
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sets alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	ExternalTimingE1
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sets standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	ExternalTimingE1
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sets unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	ExternalTimingE1
Values	false true
Default	false

GROUP Lp Sets SetsOperational (SetsOper)

Properties	Operational
Description	This group contains all of the operational data for the *Sets* component.
Mib	ExternalTimingE1

ATTRIBUTE Lp Sets ssmTx (ssmTx)

Access	Read only
Description	This attribute indicates the current Synchronization Status Message transmitted on the Sets port. It is not available when the *txSyncClk* attribute is set to ***squareWave*** or *ssmE1SaNumber* is set to ***none***.
Mib	ExternalTimingE1
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sets outputStatus (outputStatus)

Access	Read only

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Description

This attribute indicates which signal is output on the Sets port. The Sets output is ***off*** if no clock reference is available or the Sets port is locked and the Sets port does not support S1 byte.

Mib ExternalTimingE1

Values
e1Signal
squareWave
off

Default off

ATTRIBUTE Lp Sets levelAlarm (level)

Access Read only

Description

This attribute indicates the levelof Sets support present on the active CP and standby CP. The Level alarm is declared if the active CP or the standby CP cannot support the Sets functionality when Sets port is provisioned. The Sets port goes into an operational state of ***disabled*** when the active CP hw does not support Sets functionality and it goes into an operational state of ***degraded*** when the standby CP hw does not support Sets functionality.

Mib ExternalTimingE1

Values
on
off

Default off

COMPONENT Lp Ethernet (Eth)

Instance Decimal (0..7)

Groups
GROUP Lp Eth Provisioned (Prov)
GROUP Lp Eth CustomerIdentifierData (CidData)
GROUP Lp Eth AdminInfo (AdminInfo)
GROUP Lp Eth IfEntryProv (IfEntry)
GROUP Lp Eth OperationalStatus (OperStatus)
GROUP Lp Eth OsiState (State)
GROUP Lp Eth Operational (Oper)
GROUP Lp Eth Statistics (Stats)

Scope Device

Description
Lp/n Ethernet/n
The *Ethernet* component controls and monitors an Ethernet port on a function processor. The number of ports supported depends on the type of

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	the card. The instance number of the *Ethernet* component corresponds to the physical port number on the card.
Mib	Ethernet
Subcomponents	COMPONENT Lp Eth TrafficManager (Tm)
Opt. Subcomp.	COMPONENT Lp Eth OpticalModule (Om)
Dyn. Subcomp.	COMPONENT Lp Eth Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Eth Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for an *Ethernet* component.
Mib	Ethernet

ATTRIBUTE Lp Eth applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies which application uses the *Ethernet* component.
Mib	Ethernet
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp Eth maxFrameSize

Access	Read and write
Description	This attribute specifies the maximum frame size allowed on the link. Frames received on the link that are greater that the max frame size are discarded and counted in the *framesTooLong* attribute or in the *jabbers* attribute if the FCS is bad. The maximum frame size calculation includes the 802.3/v2 ethernet header and CRC or FCS octets, and excludes Preamble and Inter-Packet Gap. Recommended frame sizes are: 1518 for port-mode, 1522 for Vlan-mode, and anything up to 9182 for Jumbo Frame.
Mib	Ethernet
Values	Decimal (1518..9182)
Default	1518

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ATTRIBUTE Lp Eth autoNegotiation

Access	Read and write
Description	This attribute specifies that auto negotiation is turned on or off for the ethernet port. This attribute must be set to off, if the far-end does not support auto-negotiation.
Mib	Ethernet
Values	off on
Default	on

ATTRIBUTE Lp Eth duplexMode

Access	Read and write
Description	This attribute specifies the duplex mode of the ethernet port. This attribute is ignored if auto negotiation is successful.
Mib	Ethernet
Values	half full
Default	full

ATTRIBUTE Lp Eth lineSpeed

Access	Read and write
Description	This attribute specifies the operating speed of the ethernet port. This attribute is ignored if auto negotiation is successful.
Mib	Ethernet
Values	Decimal (10; 100; 1000)
Units	Mbit/s
Default	No default

ATTRIBUTE Lp Eth losDuringMigration

Access	Read and write
Description	This attribute specifies that the loss Of Sync is enabled or disabled during the migration process when the card is part of the migration shelf.
Mib	Ethernet
Values	disabled enabled
Default	disabled

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GROUP Lp Eth CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Ethernet

ATTRIBUTE Lp Eth customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Ethernet
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Eth AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Ethernet

ATTRIBUTE Lp Eth vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Ethernet
Values	String (0..20, ASCII)

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Default	No default

ATTRIBUTE Lp Eth commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Ethernet
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Lp Eth includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	Ethernet
Values	no yes
Default	no

GROUP Lp Eth IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Ethernet

ATTRIBUTE Lp Eth ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ethernet
Values	up down testing
Default	up

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ATTRIBUTE Lp Eth ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Ethernet
Values	Decimal (1..65535)
Default	No default

GROUP Lp Eth OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ethernet

ATTRIBUTE Lp Eth snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ethernet
Values	up down testing
Default	up

GROUP Lp Eth OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ethernet

ATTRIBUTE Lp Eth adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ethernet
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Eth operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ethernet
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Eth usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ethernet
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Eth availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ethernet
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Eth proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — Ethernet

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp Eth controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	Ethernet
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Eth alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Ethernet
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Eth standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Ethernet
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Eth unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ethernet
Values	false true
Default	false

GROUP Lp Eth Operational (Oper)

Properties	Operational
Description	This group contains the operational data for an *Ethernet* component.
Mib	Ethernet

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ATTRIBUTE Lp Eth failureCause

Access	Read only
Description	This attribute indicates the failure cause of an Ethernet port. The port enters a failed state after the condition has been observed for a period of 2.5 seconds +/-0.5 seconds. The port comes out of the failed state when the condition has been cleared for a period of 10 seconds +/- 0.5 seconds. The attribute is set to one of the following values while the OSI *availabilityStatus* attribute is set to ***failed***: ***lossOfSync***: Port synchronization cannot be achieved. ***remoteOffline***: The far end is offline. ***remoteLinkFailure***: The far end has detected a link failure. ***autoNegError***: The far end does not support a compatible set of auto-negotiation capabilities, or auto-negotiation has failed. ***noFailure***: There is no failure.
Mib	Ethernet
Values	lossOfSync remoteLinkFailure remoteOffline autoNegError noFailure
Default	noFailure

ATTRIBUTE Lp Eth autoNegStatus

Access	Read only
Description	This attribute indicates the status of the Ethernet port auto-negotiation. The possible values are: ***succeeded***: Auto-negotiation has completed successfully. ***failed***: Auto-negotiation has failed to mediate a compatible set of capabilities. ***inProgress***: Auto-negotiation is currently in progress. ***disabled****:* The far end does not support auto-negotiation.
Mib	Ethernet
Values	succeeded failed inProgress disabled

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Default	No default

ATTRIBUTE Lp Eth actualLineSpeed

Access	Read only
Description	This attribute indicates the line speed of the Ethernet port.
Mib	Ethernet
Values	Decimal (10; 100; 1000)
Units	Mbit/s
Default	No default

ATTRIBUTE Lp Eth actualDuplexMode

Access	Read only
Description	This attribute indicates the duplex mode of the ethernet port.
Mib	Ethernet
Values	unknown half full
Default	No default

GROUP Lp Eth Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for an *Ethernet* component. Each attribute is a positive integer that monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	Ethernet

ATTRIBUTE Lp Eth framesTransmittedOk (frmTxOk)

Access	Read only
Description	This attribute counts the frames that were transmitted without error.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth framesReceivedOk (frmRxOk)

Access	Read only

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Description	This attribute counts the frames that were received without error.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth octetsTransmittedOk (octTxOk)

Access	Read only
Description	This attribute counts the octets that were transmitted without error. The count includes data, padding octets, destination address (DA), source address (SA), length field, and frame check sequence (FCS), but excludes preamble and source field delimiter (SFD).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth octetsReceivedOk (octRxOk)

Access	Read only
Description	This attribute counts the octets that were received without error. The count includes data, padding octets, destination address (DA), source address (SA), length field, and frame check sequence (FCS), but excludes preamble and source field delimiter (SFD). The count also excludes octets contained within received frames that are classified as being errored (fcsErrors etc.).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth undersizeFrames

Access	Read only
Description	This attribute counts the discarded frames that were received with less than the minimum size (64 bytes).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth fragments

Access	Read only

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Description	This attribute counts the discarded frames that were received with less than the minimum size (64 bytes) with a bad frame check sequence (FCS).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth framesTooLong

Access	Read only
Description	This attribute counts the discarded frames that were received and exceeds the maximum permitted frame size. The maximum size of a frame depends on it supported encapsulated types.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth jabbers

Access	Read only
Description	This attribute counts the discarded frames that were received and exceeds the maximum permitted frame size with a bad frame check sequence (FCS). The maximum size of a frame depends on it supported encapsulated types.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth fcsErrors

Access	Read only
Description	This attribute counts the discarded received frames with an integral number of octets in length and did not pass the Frame Check Sequence (FCS). The count does not include frames received that are too long (jabbers) or too short (fragments).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth symbolErrors

Access	Read only

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Description	This attribute counts the discarded received frames with a valid length, but at least one data reception error or one symbol error was observed. This counter increments once per valid Carrier Event.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth pauseFramesReceived

Access	Read only
Description	This attribute counts the PAUSE Media Access Control (MAC) control frames received.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth alignmentErrors

Access	Read only
Description	This attribute counts the frames received that were not an integral number of octets in length. Frames will be checked for alignment errors before they are checked for Frame Check Sequence (FCS) errors. If there is an alignment error, the error will only be counted by the *alignmentErrors* attribute and not by the *fcsErrors* attribute.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth singleCollisionFrames

Access	Read only
Description	This attribute counts the successfully transmitted frames that experienced exactly one collision.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth multipleCollisionFrames

Access	Read only
Description	This attribute counts the successfully transmitted frames that experienced more than one collision.

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Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth deferredTransmissions

Access	Read only
Description	This attribute counts the frames that experienced a transmission delay because the medium was busy.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth lateCollisions

Access	Read only
Description	This attribute counts the number of times a collision was detected later than 512 bit-times into the transmission of a packet.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth excessiveCollisions

Access	Read only
Description	This attribute counts the frames that failed to get transmitted due to excessive collisions.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth macTransmitErrors

Access	Read only
Description	This attribute counts the number of times that a transmission failed due to internal MAC transmit errors.
Mib	Ethernet
Values	Long Integer
Default	No default

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ATTRIBUTE Lp Eth carrierSenseErrors

Access	Read only
Description	This attribute counts the number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth macReceiveErrors

Access	Read only
Description	This attribute counts the number of times a receive failed due to internal MAC receive errors.
Mib	Ethernet
Values	Long Integer
Default	No default

COMPONENT Lp Eth TrafficManager (Tm)

Scope	Device
Description	*Lp/x Ethernet/y Tm* This component contains the emission priority queue (*GrmEmissionPriority*), and service category (*GrmServiceCategory*) subcomponents. It provides traffic management capabilities for absolute (strict) queueing and fair-weighted queueing. This component is required for the 4pGE FP.
Mib	Ethernet
Opt. Subcomp.	COMPONENT Lp Eth Tm EmissionPriority (Ep) COMPONENT Lp Eth Tm ServiceCategory (Sc)
Common Verbs	Help List Display

COMPONENT Lp Eth Tm EmissionPriority (Ep)

Instance	Decimal (0..7)
Groups	GROUP Lp Eth Tm Ep Operational (Oper) GROUP Lp Eth Tm Ep ProvQueue (ProvQ)
Scope	Application
Description	*Lp/x Ethernet/y Tm Ep/n* This component defines the characteristics of the corresponding emission

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priority queue for the associated physical links.

This component have instances of *Ep/0* and *Ep/1* which are absolute priority queues having precedence over queues under *Ep2* to *Ep7* components. Component *Ep/0* has the highest priority. All traffic in *Ep/0* is transmitted on the link first, then traffic from component *Ep/1* is transmitted. When all traffic at *Ep/0* and *Ep/1* have been sent, other *Ep* component queues get the opportunity to transmit with the residual bandwidth.

This component has instances from *Ep/2* to *Ep/7* that operate under the weighted fair queue strategy, with each queue using a bandwidth attribute for weight to allocate service opportunities left over by *Ep/0* and *Ep/1*.

Mib	Ethernet
Common Verbs	Help List Display

GROUP Lp Eth Tm Ep Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the *Ep* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Tm Ep percentMinimumBandwidthGuarantee (pMinBw)

Access	Read only
Description	This attribute indicates the weight as a percentage of the link residual bandwidth available to this queue.
Mib	Ethernet
Values	Decimal (0.00..100.00) abs
Units	%
Default	No default

ATTRIBUTE Lp Eth Tm Ep minimumBandwidthGuaranteeOp (minBwOp)

Access	Read only
Description	This attribute indicates the minimum bandwidth guaranteed for this queue.
Mib	Ethernet
Values	Decimal (0.00..100.00) abs
Default	No default

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ATTRIBUTE Lp Eth Tm Ep congestionState (cs)

Access	Read only
Description	This attribute indicates the congestion control discard priority (CCDP) of traffic destined for each of the 8 queues (*Ep/0* to *Ep/7*). There are 4 discard priorities (***ccdp0*** to ***ccdp3*** corresponding to values 0 to 3, respectively) with ***ccdp0*** traffic being the most sensitive to loss. For example, when the count of cell blocks currently in the queue is greater than the ***ccdp0*** discard threshold, the hardware device discards the arriving ***ccdp0*** traffic.
Mib	Ethernet
Values	ccdp0 ccdp1 ccdp2 ccdp3
Default	No default

ATTRIBUTE Lp Eth Tm Ep txQueueSizeOp (qsOp)

Access	Read only
Description	This attribute indicates the queue size associated with the queue for buffering traffic.
Mib	Ethernet
Values	Decimal (0..7168000)
Units	bytes
Default	No default

ATTRIBUTE Lp Eth Tm Ep txQueueUsage (qu)

Access	Read only
Description	This attribute indicates the current usage of the queue as a percentage of the total queue bandwidth.
Mib	Ethernet
Values	Decimal (0.00..100.00)
Units	%
Default	No default

ATTRIBUTE Lp Eth Tm Ep txQueueMin (qmin)

Access	Read only
Description	This attribute indicates the lowest count of bytes allocated to traffic in the queue.
Mib	Ethernet

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Values	Decimal (0..7168000)
Units	bytes
Default	No default

ATTRIBUTE Lp Eth Tm Ep txQueueMax (qmax)

Access	Read only
Description	This attribute indicates the largest count of bytes allocated to traffic in the queue.
Mib	Ethernet
Values	Decimal (0..7168000)
Units	bytes
Default	No default

GROUP Lp Eth Tm Ep ProvQueue (ProvQ)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ep* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Tm Ep redMode (red)

Access	Read and write
Description	This attribute specifies whether random early packet discard is set to a value of either ***disable*** or ***enable*** for the queue. It serves as an early warning of congestion with the occasional packet being discarded when the queue begins to be congested, but it is not a congestion control mechanism in itself. No frame is randomly discarded if this attribute is set to ***disable***. If it is set to ***enable***, only the frames whose red bit is set are targeted to be randomly discarded. In PCR5.1, the upstream device sets the red bit of every frame so that random eary discard is controlled by the setting of this attribute. The default is ***disable***.
Mib	Ethernet
Values	disable enable
Default	disable

ATTRIBUTE Lp Eth Tm Ep txQueueSize (qs)

Access	Read and write
Description	This attribute specifies the maximum size of the link associated with the queue for buffering traffic. For the 4pGE card, each of the port's 8 *Ep/x* queues have a maximum

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queue size for its *txQueueSize* attribute. The maximum queue sizes are 500K, 500K, 500K, 500K, 7M, 4.2M, 3M, and 2.2M for each *Ep/0, Ep/1, Ep/2, Ep/3, Ep/4, Ep/5, Ep/6* and *Ep/7* components, respectively. The default values are 100K, 300K, 300K, 300K, 7M, 4.2M, 3M, and 2.2M for each of *Ep/0, Ep/1, Ep/2, Ep/3, Ep/4, Ep/5, Ep/6* and *Ep/7* components, respectively. The autoConfig sets the *txQueueSize* to the default value corresponding to the component instance.

Mib	Ethernet
Values	Decimal (0..7168000) autoConfig
Units	bytes
Default	autoConfig

ATTRIBUTE Lp Eth Tm Ep minimumBandwidthGuarantee (minBw)

Access	Read and write
Description	This attribute specifies the weight available to this queue. It determines the relative amount of residual bandwidth left by components *Ep/0* and *Ep/1* that is allocated to this queue. The amount of bandwidth allocated is the weight of this queue divided by the sum of the weights of components *Ep/2* through *Ep/7* multiplied against the residual bandwidth. For example, if the weight of this queue divided by the sum of the weights from *Ep/2* through *Ep/7* is 2%, and 80% of the link bandwidth is left after *Ep/0* and *Ep/1* traffic is sent, then the amount of bandwidth available to this *Ep* queue is 2% of 80% (or 1.6%) of the link bandwidth. The default weight values are 50, 25, 10, 7, 5, 3 assigned to components *Ep/2, Ep/3, Ep/4, Ep/5, Ep/6*, and *Ep/7*, respectively.
Mib	Ethernet
Values	Decimal (0.00..100.00) autoConfig
Default	autoConfig

COMPONENT Lp Eth Tm ServiceCategory (Sc)

Instance	Decimal (0..7)
Groups	GROUP Lp Eth Tm Sc Operational (Oper)
Scope	Application

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Description	*Lp/x Ethernet/y Tm Sc* This component displays the default characteristics of the service category for queue scheduling.
Mib	Ethernet
Common Verbs	Help List Display

GROUP Lp Eth Tm Sc Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Sc* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Tm Sc scToEpMappingOp (epOp)

Access	Read only
Description	This attribute indicates the emission queue which is used for this *Sc* component. The default values are ***ep0***, ***ep1***, ***ep2, ep3***, ***ep4***, ***ep5***, ***ep6*** and ***ep7*** assigned to *Sc/7*, *Sc/6*, *Sc/5*, *Sc/4*, *Sc/3*, *Sc/2*, *Sc/1*, and *Sc/0*, respectively.
Mib	Ethernet
Values	ep0 ep1 ep2 ep3 ep4 ep5 ep6 ep7
Default	No default

COMPONENT Lp Eth OpticalModule (Om)

Groups	GROUP Lp Eth Om Provisioned (Prov) GROUP Lp Eth Om OsiState (State) GROUP Lp Eth Om Operational (Oper)
Scope	Device

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Description	*Lp/n Ethernet/n OpticalModule* This component represents the optical module device of the port. The optical module is used to identify the type of connection for a port.
Mib	Ethernet
Common Verbs	Help List Display Add DELete

GROUP Lp Eth Om Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *OpticalModule* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Om type

Access	Read and write
Description	This attribute specifies the expected optical module type. The values for the *type* and *insertedType* attributes must match; otherwise, an alarm is raised and the *OpticalModule* component is disabled. ***none***: This value indicates that no optical module type is specified. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode. ***SX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode. ***OC3SmLr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC3SmIr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC3MmSr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach). ***OC12SmLr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-

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Mode, Reach = 80Km (Long Reach).

OC12SmIr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib — Ethernet

Values
none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr
OC48SmLr2
OC48SmIr

Default — none

GROUP Lp Eth Om OsiState (State)

Properties — Operational

Description — This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — Ethernet

ATTRIBUTE Lp Eth Om adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ethernet

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Eth Om operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ethernet

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Eth Om usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	Ethernet
Values	idle active (activ) busy
Default	idle

GROUP Lp Eth Om Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *OpticalModule* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Om insertedType

Access	Read only
Description	This attribute indicates the inserted optical module type. ***none***: This value indicates that there is no optical module inserted in the card. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode. ***SX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode. ***OC3SmLr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC3SmIr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC3MmSr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach). ***OC12SmLr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC12SmIr***: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

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OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib	Ethernet
Values	none LX SX OC3SmLr OC3SmIr OC3MmSr OC12SmLr OC12SmIr OC48SmLr OC48SmLr2 OC48SmIr
Default	none

ATTRIBUTE Lp Eth Om serialNumber

Access	Read only
Description	This attribute indicates the serial number of the inserted optical module.
Mib	Ethernet
Values	String (0..64, Extended ASCII)
Default	""

ATTRIBUTE Lp Eth Om failureCause

Access	Read only
Description	This attribute indicates the cause for the optical module's failure. The possible values are: ***typeMismatch***: This error indicates a mismatch between the *type* and *insertedType* attributes. ***internalError***: This error indicates an internal diagnostic failure of the optical module. ***unsupportedOm:*** This error indicates that the inserted optical module is not supported on this card.

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absentOm: This error indicates that no optical module are currently present on this port.

noFailure: There is no failure.

Mib: Ethernet

Values:
typeMismatch
internalError
unsupportedOm
absentOm
noFailure

Default: noFailure

COMPONENT Lp Eth Test (Test)

Groups:
GROUP Lp Eth Test OsiState (State)
GROUP Lp Eth Test Setup (Setup)
GROUP Lp Eth Test Results (Results)

Scope: Application

Description:

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib: Ethernet

Common Verbs:
Help
List
Display

VERB START Lp Eth Test

Impact: Service

Description:

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Eth Test

Impact: Service

Description:

This command stops a test running on the hardware component.

GROUP Lp Eth Test OsiState (State)

Properties: Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ethernet

ATTRIBUTE Lp Eth Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ethernet
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Eth Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ethernet
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Lp Eth Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ethernet
Values	idle active (activ) busy
Default	idle

GROUP Lp Eth Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Ethernet
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Eth Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate

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test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Ethernet

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Eth Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Ethernet

Values: Decimal (4..4096)

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Units	bytes
Default	1024

ATTRIBUTE Lp Eth Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Ethernet
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Eth Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Ethernet
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Eth Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Ethernet
Values	Decimal (0..1814400)

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Units	seconds
Default	0

ATTRIBUTE Lp Eth Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Ethernet
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Eth Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Ethernet
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Eth Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started.

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a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	Ethernet
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Eth Test bitsTx

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Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Ethernet
Values	Long Integer
Default	No default

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ATTRIBUTE Lp Eth Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

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For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib	Ethernet
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Eth Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Ethernet
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Eth Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Ethernet
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp LinkAggregation (Lag)

Instance	Decimal (0..7)

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Groups	GROUP Lp Lag Provisioned (Prov) GROUP Lp Lag Operational (Oper) GROUP Lp Lag Statistics (Stats) GROUP Lp Lag CustomerIdentifierData (CidData) GROUP Lp Lag OsiState (State)
Scope	Device
Description	*LinkAggregation/n* This component is used to define a link aggregation group (LAG). LAG provides the ability to aggregate Ethernet ports for greater bandwidth and resiliency. As needed, Ethernet ports with the same port speed are added to the LAG group in increments. To use LAG on a 4pGigE function processor, add a *LinkAggregation/n* component. The instance number of a LAG group is unique across the shelf.
Mib	Lag
Opt. Subcomp.	COMPONENT Lp Lag Link (Lk)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Lag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Lag* component.
Mib	Lag

ATTRIBUTE Lp Lag collectorMaxDelay (delay)

Access	Read and write
Description	This attribute specifies the timeout period, in milliseconds, for the near-end system to assume that the destination system has received or discarded all frames transmitted prior to starting the timer. This timer is used by the Marker protocol. After expiry of the timer, the near-end system will restart frame transmission on another link in the LAG.
Mib	Lag
Values	Decimal (0..656)
Units	msec

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Default	10

ATTRIBUTE Lp Lag lacpMode (mode)

Access	Read and write
Description	This attribute specifies the LACP mode of the near-end system.
Mib	Lag
Values	passive active
Default	active

ATTRIBUTE Lp Lag lacpPeriod (period)

Access	Read and write
Description	This attribute specifies the timeout period for the near-end system to send and receive LACP frames. Where fast is 1second for sending and 3 seconds for receiving and slow is 30 seconds for sending and 90 seconds for receiving.
Mib	Lag
Values	fast slow
Default	fast

ATTRIBUTE Lp Lag minActiveLinks (minimumLinks)

Access	Read and write
Description	This attribute specifies the minimum number of links that must be active for the LAG to remain operational. For the 4pGigE function processor, this attribute can have a value between 1 and 4. This attribute should be set to the default value, when interoperating with third-party equipment. In addition, changing this attribute can impact the operation of the LAG.
Mib	Lag
Values	Decimal (1..31)
Default	1

ATTRIBUTE Lp Lag partnerAdminSystemId (partnerAdminId)

Access	Read and write
Description	This attribute specifies the administrative value for the far-end LAG MAC address and Key. This attribute is used when the near-end and far-end systems operate in LACP passive mode.
Mib	Lag
Values	String (6, Dashed Hex)

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Default	No default

ATTRIBUTE Lp Lag partnerAdminKey (partnerKey)

Access	Read and write
Description	This attribute specifies the administrative value for the far-end LAG MAC address and Key. This attribute is used when the near-end and far-end systems operate in LACP passive mode. This attribute must be set if *lacpMode* is set to ***active***.
Mib	Lag
Values	Decimal (0..65536)
Default	No default

ATTRIBUTE Lp Lag partnerAdminSystemPriority (partnerPriority)

Access	Read and write
Description	This attribute specifies the administrative value for the far-end LAG priority. This attribute is used when the near-end and far-end systems operate in LACP *passive* mode. This attribute must be set if *lacpMode* is set to ***active***.
Mib	Lag
Values	Decimal (1..65535)
Default	32768

ATTRIBUTE Lp Lag applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the *Framer* component using the *Lag* component. An example is *La/15 Framer.*
Mib	Lag
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Lag Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Lag* component.
Mib	Lag

ATTRIBUTE Lp Lag failureCause (cause)

Access	Read only
Description	This attribute indicates the cause of the current local end failure experienced by the LAG. The failure may have occurred during a start-up

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	procedure or during normal operation. Possible values are: ***noFailure***: no local end failure. ***noGoodLinks***: no good links were available during LAG start-up or normal operation. ***badLagIdInStartup***: during start-up, different LAG identifiers (LAGIDs) were received on the links. ***badLidInStartup***: during start-up, duplicate LAG link identifiers (LIDs) were received on the links. ***remoteFailure***: all the links at the far end are down. ***minActiveLinksThreshold***: the number of links active in the LAG group is less than the value set in *minActiveLinks*.
Mib	Lag
Values	noFailure noGoodLinks badLagIdInStartup badLidInStartup remoteFailure minActiveLinksThreshold
Default	No default

ATTRIBUTE Lp Lag actorSystemId (actorId)

Access	Read only
Description	This attribute indicates the MAC address used by the near-end LAG.
Mib	Lag
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Lag partnerOperSystemId (partnerOperId)

Access	Read only
Description	This attribute indicates the operational value for the far-end LAG MAC address.
Mib	Lag
Values	String (6, Dashed Hex)
Default	No default

GROUP Lp Lag Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Lag* component.
Mib	Lag

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ATTRIBUTE Lp Lag runningTime (running)

Access	Read only
Description	This attribute indicates the length of time (in seconds) for which the *Lag* component has been in the unlocked state or has been used for operational testing.
Mib	Lag
Values	Long Integer
Units	seconds
Default	No default

ATTRIBUTE Lp Lag unavailSecs (unavail)

Access	Read only
Description	This attribute indicates the number of one second intervals during which the *Lag* component has been unlocked and out of service.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag failures (fail)

Access	Read only
Description	This attribute counts the complete failures, that the *Lag* component has experienced since being added. It must be noted that a service degradation, such as 1 of the 3 links in a LAG group being down, is not counted as a failure. If an *Lag* component is in a failure loop and does not come up, then this count will only increase by 1.
Mib	Lag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Lag rxFrameOctets (rxOctets)

Access	Read only
Description	This attribute counts the valid user frames, in octets, received on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

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ATTRIBUTE Lp Lag txFrameOctets (txOctets)

Access	Read only
Description	This attribute counts the valid user frames, in octets, transmitted on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag rxFramePackets (rxPackets)

Access	Read only
Description	This attribute counts the valid packets received on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag txFramePackets (txPackets)

Access	Read only
Description	This attribute indicates the total number of valid packets transmitted on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag rxFrameDiscards (rxDiscards)

Access	Read only
Description	This attribute counts the discarded user frames after they were received on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag txFrameDiscards (txDiscards)

Access	Read only
Description	This attribute counts the discarded user frames during transmission on the LAG.
Mib	Lag

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Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag rxFrameErrors (rxErrors)

Access	Read only
Description	This attribute counts the invalid user frames received on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag txFrameErrors (txErrors)

Access	Read only
Description	This attribute counts the invalid user frames prior to their transmission on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

GROUP Lp Lag CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Lag

ATTRIBUTE Lp Lag customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component.

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Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib Lag

Values Decimal (0; 1..8191)

Default 0

GROUP Lp Lag OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Lag

ATTRIBUTE Lp Lag adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Lag

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp Lag operationalState (osiOper)

Access Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Lag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Lag availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	Lag
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Lag proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Lag
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Lag controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Lag
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Lag alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Lag

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Lp Lag standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Lag
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Lag unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Lag
Values	false true
Default	false

COMPONENT Lp Lag Link (Lk)

Instance	Decimal (0..31)
Groups	GROUP Lp Lag Lk Provisioned (Prov) GROUP Lp Lag Lk Operational (Oper) GROUP Lp Lag Lk Statistics (Stats) GROUP Lp Lag Lk OsiState (State)
Scope	Device
Description	*Lag/n Link/n* This component is used to define an Ethernet link belonging to a LAG group. To use LAG on a 4pGigE function processor, add a *Lag/n Link/n* component instance.
Mib	Lag
Common Verbs	Help List Display Add DELete

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GROUP Lp Lag Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Lag

ATTRIBUTE Lp Lag Lk interfaceName

Access	Read and write
Criticality	Component
Description	This attribute associates the *Link* subcomponent with a specific physical interface on a function processor, for example *Lp/5 Ethernet/3*. LAG groups and independent links can coexist on a card running LAG. A link in a LAG group cannot operate as an independent link. An independent link in operation must be detached from its *applicationFramerName*, before it can be added into a LAG group.
Mib	Lag
Values	Link (Hardware, applicationFramerName)
Default	No default

ATTRIBUTE Lp Lag Lk partnerAdminPortNumber (adminPortNumber)

Access	Read and write
Description	This attribute indicates the administrative value of the port number of the far-end Lag link that is interfaced with this LAG link.
Mib	Lag
Values	Decimal (0..65535)
Default	0

GROUP Lp Lag Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Lag

ATTRIBUTE Lp Lag Lk partnerOperPortNumber (operPortNumber)

Access	Read only
Description	This attribute indicates the operational value for the port number of the far-end Lag Link that is interfaced with this LAG link.
Mib	Lag
Values	Decimal (0..65535)

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Default	No default

ATTRIBUTE Lp Lag Lk failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause on this link. Possible values are: ***noFailure***: there is no failure on this link. ***interfaceDown***: the physical port used by the link is down. ***protocolError***: the link is down because bad values are being received in LAG Control Protocol (LACP) cells. ***remoteFailure***: the far end link may not be synchronized, or is not collecting or distributing frames. ***misconnected***: the link is down because the LAG group has declared that this link is not properly connected. ***notInSync***: the link is down because it may not be synchronized, collecting or distributing frames.
Mib	Lag
Values	noFailure interfaceDown lacpError markerError lagLocked notInSync notCollecting notDistributing badActor badPort stateChange badPartner lacpTimeout lacpModeChange unknownError
Default	No default

GROUP Lp Lag Lk Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Link* subcomponent.
Mib	Lag

ATTRIBUTE Lp Lag Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time (in seconds) for which the *Link* component has been running.
Mib	Lag
Values	Long Integer

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Units	seconds
Default	No default

ATTRIBUTE Lp Lag Lk unavailSecs (uas)

Access	Read only
Description	This attribute counts the one second intervals during which the near end has been in an unusable state.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk failures (fail)

Access	Read only
Description	This attribute counts the failures during link addition or normal operation, that the link has experienced.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk rxLacp (rxLacp)

Access	Read only
Description	This attribute counts LACP frames received from the remote end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk txLacp (txLacp)

Access	Read only
Description	This attribute counts the LACP frames transmitted from the near end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk rxInvalidLacp (invalidLacp)

Access	Read only

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Description	This attribute counts the invalid LACP frames received from the remote end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk rxMarker (rxMarker)

Access	Read only
Description	This attribute counts the Marker frames received from the remote end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk txMarker (txMarker)

Access	Read only
Description	This attribute counts the Marker frames transmitted from the near end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk rxInvalidMarker (invalidMarker)

Access	Read only
Description	This attribute counts the invalid Marker frames received from the remote end system.
Mib	Lag
Values	Long Integer
Default	No default

GROUP Lp Lag Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	Lag

ATTRIBUTE Lp Lag Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Lag Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Lp Lag Lk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Lag Lk availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

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The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Lag
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Lag Lk proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform

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its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — Lag

Set of — initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Lp Lag Lk controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	Lag
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Lag Lk alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Lag
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Lag Lk standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — Lag

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE Lp Lag Lk unknownStatus (osiUnknw)

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — Lag

Values
false
true

Default — false

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Lp

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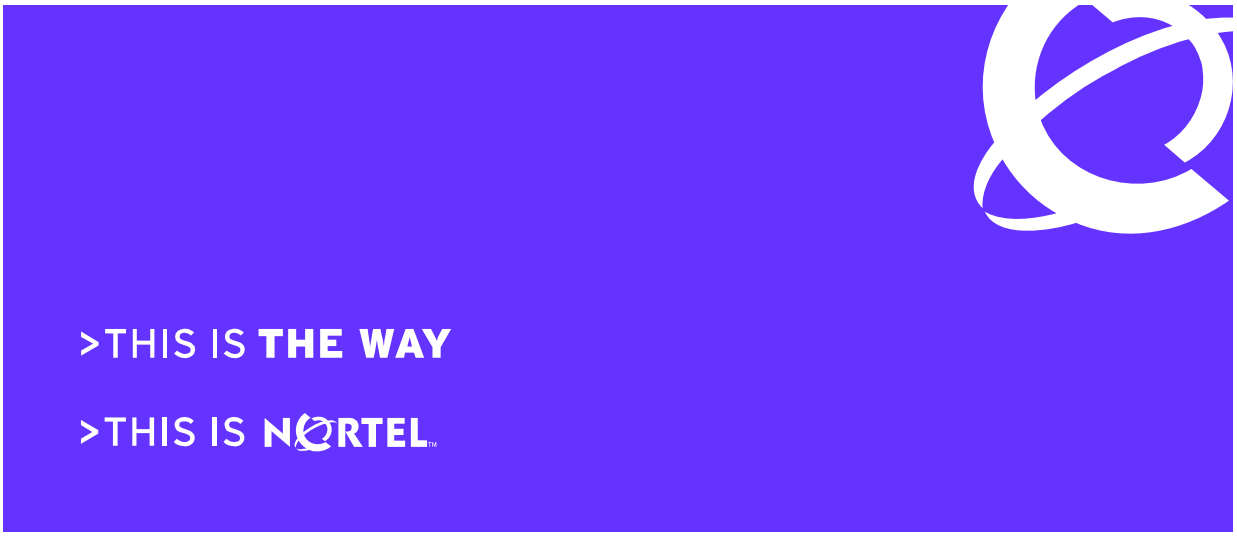

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - McsMgr

NN10600-060

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Product release: PCR7.2 and up
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Language type: U.S. English

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COMPONENT McsManager (McsMgr)

Groups	GROUP McsMgr Provisioned (Prov) GROUP McsMgr OsiState (State) GROUP McsMgr Operational (Oper)
Scope	Network
Description	*McsManager* There is at most one *McsManager* per module. The *McsManager* is required for FRF5 PVC and DPRS MCS functionality. The *McsManager* can run on one of a number of LPs. The LP of the active *McsManager* can be determined by looking at the *currentLp* operational attribute.
Mib	McsMgr
Opt. Subcomp.	COMPONENT McsMgr Frf5EndPointGroup (Frf5EpG)
Opt. Subcomp.	COMPONENT McsMgr DprsMcsEndPointGroup (DprsMcsEpG)
Common Verbs	Help List Display Add DELete

GROUP McsMgr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *McsManager.*
Mib	McsMgr

ATTRIBUTE McsMgr maxEps (mEps)

Access	Read and write
Description	This attribute specifies the number of end points that will be allowed on the module.This includes end points originating from and terminating on this module. When this limit is reached calls requiring the creation of an end

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point are rejected. The current number of EPs is indicated by the *currentEps* attribute.

Mib	McsMgr
Values	Decimal (1..16384)
Default	512

ATTRIBUTE McsMgr epAlarmThreshold (epThresh)

Access	Read and write
Description	This attribute specifies the maximum number of end points that can exist before an alarm is raised. When *currentEps* exceeds this value an alarm is generated. The alarm is cleared when *currentEps* falls below this value.
Mib	McsMgr
Values	Decimal (1..16384)
Default	128

ATTRIBUTE McsMgr overrideNsapAddress (oNsap)

Access	Read and write
Criticality	Component
Description	This attribute specifies the NSAP address to use as the address of the *McsManager*. If this attribute is left empty the default *McsManager* NSAP address is used. The *nsapAddress* attribute indicates the NSAP address used by the *McsManager*. The default NSAP address for the *McsManager* takes the form: <26 byte module prefix>0020480d100100
Mib	McsMgr
Values	String (0..44, AESANsapAddress)
Default	""

ATTRIBUTE McsMgr security (sec)

Access	Read and write
Description	This attribute enables or disables security for the *McsManager*. In the case of DPRS MCS Switched Paths, if security is set to ***on*** this node must have a *DprsMcsEpGroup* with the *nsapAddress* of the *Addr* subcomponent set to the same value as the node originating the call setup for the call to be accepted.If this attribute is set to ***off*** this node will accept DPRS MCS setup requests from any other node in the network. This attribute has no effect on the setup of FRF5 switched paths since an originating and terminating EP are required to establish an FRF5 switched path.

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Mib	McsMgr
Values	off on
Default	off

GROUP McsMgr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	McsMgr

ATTRIBUTE McsMgr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	McsMgr
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE McsMgr operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	McsMgr
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE McsMgr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	McsMgr
Values	idle active (activ) busy
Default	idle

ATTRIBUTE McsMgr availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	McsMgr
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE McsMgr proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	McsMgr
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE McsMgr controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	McsMgr
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE McsMgr alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	McsMgr
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE McsMgr standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	McsMgr
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE McsMgr unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	McsMgr
Values	false true
Default	false

GROUP McsMgr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *McsManager* component.
Mib	McsMgr

ATTRIBUTE McsMgr currentLp (curLp)

Access	Read only
Description	This attribute indicates the current LP on which the *McsManager* resides. If this attribute is blank then no *McsManager* is available.
Mib	McsMgr
Values	The name of the component
Default	No default

ATTRIBUTE McsMgr currentEps (totalEps)

Access	Read only

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Description	The indicates the number of EPs both originating and terminating on this module.
Mib	McsMgr
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE McsMgr nsapAddress (nsap)

Access	Read only
Description	This attribute indicates the NSAP address of the *McsManager* on this node. The value of this attributed depends on how the *overrideNsapAddress* attribute is set. All DPRS MCS and FRF5 switched paths that are to terminate on this node must specify this NSAP address as their destination.
Mib	McsMgr
Values	String (0..44, ASCII)
Default	No default

ATTRIBUTE McsMgr candidateLps (canLps)

Access	Read only
Description	This attribute indicates the set of LPs capable of running the *McsManager*. If this attribute is blank then there are no candidate LPs.
Mib	McsMgr
List of	The name of the component
Default	No default

COMPONENT McsMgr DprsMcsEndPointGroup (DprsMcsEpG)

Instance	Decimal (1..8191)
Groups	GROUP McsMgr DprsMcsEpG Operational (Oper)
Scope	Network
Description	*McsMgr DprsMcsEndPointGroup/n* The *DprsMcsEndPointGroup* component contains all of the provisioned End Points or all of the dynamic End Points that share a common destination NSAP address, thereby terminating on the same destination node. This means that there could be at most two *DprsMcsEndPointGroups* to the same destination, a provisioned *DprsMcsEpG* and a dynamic *DprsMcsEpG*.

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	The associated group is indicated by the *associatedEpGroupName* attribute. *DprsMcsEpG* component instances in the 1-4096 range can be provisioned. *DprsMcsEpG* component instances in the 4097-8191 range are dynamic.
Mib	DprsMcsEp
Subcomponents	COMPONENT McsMgr DprsMcsEpG Address (Addr)
Subcomponents	COMPONENT McsMgr DprsMcsEpG EndPoint (Ep)
Common Verbs	Help List Display Add DELete

GROUP McsMgr DprsMcsEpG Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *DprsMcsEpG* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG remoteAddress (rAddr)

Access	Read only
Description	This attribute indicates the NSAP address of the *McsMgr* at the destination module to which all *EndPoints* of this group are connected.
Mib	DprsMcsEp
Values	String (0..44, ASCII)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG associatedEpGroupName (assocEpGrpName)

Access	Read only
Description	For a provisioned *DprsMcsEpG*, this attribute indicates the name of the *DprsMcsEpG* that contains the dynamic *Eps* to the same destination. For a dynamic *DprsMcsEpG*, this attribute indicates the name of the *DprsMcsEpG* that contains the provisioned Eps to the same destination. A null component name indicates that there is no *DprsMcsEpG* associated with this group.
Mib	DprsMcsEp
Values	The name of the component
Default	No default

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COMPONENT McsMgr DprsMcsEpG Address (Addr)

Groups	GROUP McsMgr DprsMcsEpG Addr Provisioned (Prov)
Scope	Application
Description	*McsMgr DprsMcsEpG/n Address* This component contains the destination NSAP address used by all DPRS MCS End Points provisioned under a *DprsMcsEpG*.
Mib	DprsMcsEp
Common Verbs	Help List Display

GROUP McsMgr DprsMcsEpG Addr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Address* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Addr remoteAddress (rAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the NSAP address of the *McsMgr* at the destination module. This address is used by the *EndPoints* components provisioned under this *DprsMcsEpG* component to establish a DPRS MCS Switched Path.
Mib	DprsMcsEp
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Addr commentText

Access	Read and write
Description	This attribute specifies additional textual information to be added by the network operator. Typical use of this attribute is to specify the destination module name.
Mib	DprsMcsEp
Values	String (0..60, ASCII)
Default	""

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COMPONENT McsMgr DprsMcsEpG EndPoint (Ep)

Instance	Decimal (1..256)
Groups	GROUP McsMgr DprsMcsEpG Ep OsiState (State) GROUP McsMgr DprsMcsEpG Ep Operational (Oper) GROUP McsMgr DprsMcsEpG Ep Statistics (Stats)

COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint

Scope	Network
Description	*McsMgr DprsMcsEpG/n EndPoint/n* The *EndPoint* component represents the DPRS MCS Switched Path. It multiplexes multiple Frame Relay DLCIs and transports them over an underlying PORS or ATM connection.
Mib	DprsMcsEp
Subcomponents	COMPONENT McsMgr DprsMcsEpG Ep EndPointDescriptor (EpD)
Dyn. Subcomp.	COMPONENT McsMgr DprsMcsEpG Ep AtmConnection (AtmCon) COMPONENT McsMgr DprsMcsEpG Ep LogicalConnection (LCo) COMPONENT McsMgr DprsMcsEpG Ep Connection (Con)
Dyn. Subcomp.	COMPONENT McsMgr DprsMcsEpG Ep CallAdmissionControl (Cac)
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB Ping McsMgr DprsMcsEpG Ep

Impact	Passive
Description	*Ping McsMgr DprsMcsEpG/n Ep/n* A *Ping* issued against the *Ep* causes a query packet to be sent to the remote *Ep*, allowing the user to verify that the underlying PORS or ATM transport connection is up. The ping query packet sent includes 10 octets of data and 4 octets of ping packet headers. A ping reply packet expected in response to a ping query also includes 10 octets of data and 4 octets of packet headers.

GROUP McsMgr DprsMcsEpG Ep OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations

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	described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DprsMcsEp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE McsMgr DprsMcsEpG Ep operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

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Mib	DprsMcsEp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE McsMgr DprsMcsEpG Ep usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DprsMcsEp
Values	idle active (activ) busy
Default	idle

ATTRIBUTE McsMgr DprsMcsEpG Ep availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate

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because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	DprsMcsEp
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **McsMgr DprsMcsEpG Ep** **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	DprsMcsEp
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE **McsMgr DprsMcsEpG Ep** **controlStatus (osiCntrl)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is

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administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	DprsMcsEp
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	DprsMcsEp
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

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ATTRIBUTE McsMgr DprsMcsEpG Ep standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	DprsMcsEp
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE McsMgr DprsMcsEpG Ep unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	DprsMcsEp
Values	false true
Default	false

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GROUP McsMgr DprsMcsEpG Ep Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *EndPoint* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep lastTransportConnectionClearCause (lastTrConClearCause)

Access	Read only
Description	This attribute indicates the most recent clear cause for the transport connection. This indicates the causes provided by the network. A value of zero indicates that the transport connection has never been cleared. A value of 1000 indicates that the network has not provided a clear cause for the transport connection clearing. Section 5.4.5.15 of the ATMF UNI 3.1 specification lists the clear causes provided by the network.
Mib	DprsMcsEp
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep type

Access	Read only
Description	This attribute indicates the type of the end point. If the value is ***originating***, this *Ep* is provisioned and is responsible for initiating the SPVC call to set up the PORS or ATM connection. If the value is ***terminating***, this *Ep* is created dynamically by the McsMgr at the destination node when it receives a call setup request.
Mib	DprsMcsEp
Values	originating (orig) terminating (term)
Default	originating

ATTRIBUTE McsMgr DprsMcsEpG Ep supportedTransferPriorities (supTps)

Access	Read only
Description	This attribute indicates the Frame Relay transfer priorities supported by the transport connection.
Mib	DprsMcsEp
Set of	Decimal (0..15)
Default	No default

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ATTRIBUTE McsMgr DprsMcsEpG Ep connectionTransferPriority (connTp)

Access	Read only
Description	This attribute indicates the transfer priority used to establish the transport connection.
Mib	DprsMcsEp
Values	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep serviceCategory (sc)

Access	Read only
Description	This attribute indicates the ATM service category of the transport connection.
Mib	DprsMcsEp
Values	ubr cbr rtVbr nrtVbr
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep remoteComponentName (remoteName)

Access	Read only
Description	This attribute indicates the component name of the remote *Ep,* learned from the remote end. For example: *"EM/NODEY2D0 McsMgr DprsMcsEpG/1 Ep/1".* The value is a null string if the transport connection is down.
Mib	DprsMcsEp
Values	String (0..46, ASCII)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep remoteRoutingId (remoteRid)

Access	Read only
Description	This attribute indicates the routing identifier (RID) associated with the node on which the remote *Ep* resides. The remote RID is learned from the remote *Ep*. The value is valid when the transport connection is up and zero otherwise.
Mib	DprsMcsEp
Values	Decimal (0..126)
Default	No default

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ATTRIBUTE McsMgr DprsMcsEpG Ep remoteModuleId (remoteMid)

Access	Read only
Description	This attribute indicates the module identifier (MID) associated with the node on which the remote *Ep* resides. The remote MID is learned from the remote *Ep*. The value is valid when the transport connection is up and zero otherwise.
Mib	DprsMcsEp
Values	Decimal (0..1909)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep lastTrConnDiagCode (lastTrConnDiagCode)

Access	Read only
Description	This attribute indicates the diagnostic code of the most recently cleared transport connection. This indicates the diagnostic code (associated with the *lastTransportConnectionClearCause*) provided by the network. A string containing only a 0 or 00 (zero) indicates that the network has not provided a diagnostic code for the most recently cleared transport connection. Section 5.4.5.15 of the ATMF UNI 3.1 specification lists the diagnostic codes that can be provided by the network.
Mib	DprsMcsEp
Values	String (0..10, Hex)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep forwardBandwith (fBw)

Access	Read only
Description	This attribute indicates the bandwidth at which the transport connection agrees to transfer information in the forward (from the originating to the dynamic End Point) direction.
Mib	DprsMcsEp
Values	Decimal (0..155000000)
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep reverseBandwidth (rBw)

Access	Read only

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Description	This attribute indicates the bandwidth at which the transport connection agrees to transfer information in the reverse (from the dynamic to the to the originating End Point) direction.
Mib	DprsMcsEp
Values	Decimal (0..155000000)
Units	bit/s
Default	No default

GROUP McsMgr DprsMcsEpG Ep Statistics (Stats)

Properties	Operational
Description	This group contains statistics of traffic received on the DPRS MCS Switched Path.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep setupAttempts

Access	Read only
Description	This attribute counts the number of attempts made to set up the transport connection. The counter wraps around to zero when the maximum value is exceeded.
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr DprsMcsEpG Ep pktDiscErroredFromMcs

Access	Read only
Description	This attribute counts errored packets received on the DPRS MCS Switched Path; these packets are discarded. The counter wraps around to zero when the maximum value is exceeded.
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep pktFromMcs

Access	Read only
Description	This attribute counts the packets received on the DPRS MCS Switched Path for each discard priority. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***),

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	or discard priority 3 (***dp3***). Each entry (counter) wraps around to zero when the maximum value is exceeded.
Mib	DprsMcsEp
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep **octetsFromMcs**

Access	Read only
Description	This attribute counts the octets received on the DPRS MCS Switched Path for each discard priority. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***). Each entry (counter) wraps around to zero when the maximum value is exceeded.
Mib	DprsMcsEp
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep **pktDiscCongestedFromMcs**

Access	Read only
Description	This attribute counts packets received on the DPRS MCS Switched Path for each discard priority that have been discarded at the transport card due to congestion at the access card. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***). Each entry (counter) wraps around to zero when the maximum value is exceeded.

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Mib	DprsMcsEp
Vector of	Decimal (0..4294967295)
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)
Default	No default

COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint

Description	The statistics record generated by the McsManager DprsMcsEndPointGroup EndPoint component.

ATTRIBUTE McsMgr DprsMcsEpG Ep remoteComponentName (remoteName)

Description	This attribute indicates the component name of the remote *Ep,* learned from the remote end. For example: *"EM/NODEY2D0 McsMgr DprsMcsEpG/1 Ep/1".* The value will be a null string if the transport connection is down at the end of the statistics collection interval.
Values	String (0..46, ASCII)

ATTRIBUTE McsMgr DprsMcsEpG Ep bandwidthHWM

Description	This attribute indicates the high-water mark of the bandwidth at which the transport connection agrees to transfer data during the last statistics collection interval. The value for this attribute is equal to the provisioned bandwidth when the connection is up, and is 0 when the transport connection is down. This attribute, when combined with *bandwidthLWM* can also be used to indicate a transport connection outage occurrence.
Values	Decimal (0..155000000)
Units	bit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep bandwidthLWM

Description	This attribute indicates the low-water mark of the bandwidth at which the transport connection agrees to transfer data during the last statistics collection interval. The value for this attribute is equal to the provisioned bandwidth when the connection is up, and is 0 when the transport connection is down. This attribute, when combined with *bandwidthHWM* can also be used to indicate a transport connection outage occurrence.
Values	Decimal (0..155000000)
Units	bit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep serviceCategory (sc)

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Description	This attribute indicates the ATM service category of the transport connection.
Values	ubr cbr rtVbr nrtVbr

ATTRIBUTE McsMgr DprsMcsEpG Ep pktFromMcs

Description	This attribute indicates the number of packets received on the DPRS MCS Switched Path End Point for each discard priority in the last statistics collection interval. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0(***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep octetsFromMcs

Description	This attribute indicates the octets received on the DPRS MCS Switched Path End Point for each discard priority in the last statistics collection interval. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep pktDiscCongestedFromMcs

Description	This attribute indicates the number of packets received on the DPRS MCS Switched Path End Point for each discard priority that have been discarded at the transport card in the last statistics collection interval due to congestion at the access card. This attribute is a vector with four entries. Each vector entry is a counter

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	indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).
Vector of	Decimal (0..4294967295)
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep **pktDiscErroredFromMcs**

Description	This attribute the number of errored packets received on the DPRS MCS Switched Path End Point that have been discarded in the last statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT McsMgr DprsMcsEpG Ep **EndPointDescriptor (EpD)**

Groups	GROUP McsMgr DprsMcsEpG Ep EpD Provisioned (Prov)
Scope	Network
Description	*McsMgr DprsMcsEpG/n Ep/n EndPointDescriptor* This component establishes the underlying PORS or ATM connection. There can only be one DPRS MCS Switched Path for a given Frame Relay transfer priority between a pair of nodes. Therefore, the *supportedTransferPriorities* on this *EndPoint* must be mutually exclusive with the *supportedTransferPriorities* of all other *EndPoints* within this *DprsMcsEndPointGroup*.
Mib	DprsMcsEp
Common Verbs	Help List Display

GROUP McsMgr DprsMcsEpG Ep EpD **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the parameters used to establish the transport connection for this *Ep*.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD **connectionTransferPriority (connTp)**

Access	Read and write
Description	This attribute specifies the transfer priority used to establish the transport connection. It references the *ModuleData Frs AtmNet Tpm* to determine the ATM service category to be used by the transport connection. This attribute is used by the *Ep* solely for the purpose of determining the service category that should be used to establish the transport connection.

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Mib	DprsMcsEp
Values	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD transportConnectionPreference (transConPref)

Access	Read and write
Description	This attribute specifies the preference of routing system to be used to set up the transport connection. If a value of ***atmOnly*** is specified, attempts to set up the transport connection will be made using only the ATM routing system's network facilities. If a value of ***porsOnly*** is specified, attempts to set up the transport connection will be made using only PORS network facilities.
Mib	DprsMcsEp
Values	atmOnly porsOnly
Default	porsOnly

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD profile (prof)

Access	Read and write
Criticality	Component
Description	This attribute specifies the PORS profile to be used for the transport connection when it is set up using PORS. This attribute is ignored if the *transportConnectionPreference* is ***atmOnly***.
Mib	DprsMcsEp
Values	Link (Service, users)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD porsManualPath (mpath)

Access	Read and write
Criticality	Component
Description	This attribute specifies the PORS manual path to be used for the transport connection when it is set up using PORS. The manual path that this attribute is linked to specifies the sequence of Trunks that will be used when PORS chooses and instantiates the route. This attribute is ignored if the *transportConnectionPreference* is ***atmOnly***.
Mib	DprsMcsEp
Values	Link (Service, users)
Default	No default

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ATTRIBUTE McsMgr DprsMcsEpG Ep EpD supportedTransferPriorities (supTps)

Access	Read and write
Description	This attribute specifies the Frame Relay transfer priorities that are supported through the transport connection. It is used to determine which *EndPoint* within a *DprsMcsEndPointGroup* is to multiplex a particular Frame Relay DLCI. A particular transfer priority can be specified on at most one *EndPoint* within a *DprsMcsEndPointGroup.*
Mib	DprsMcsEp
Set of	Decimal (0..15)
Default	(0)

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD forwardBandwidth (fBw)

Access	Read and write
Description	This attribute specifies the bandwidth this End Point will request when setting up a transfer connection which the transport in the forward (from the originating to the terminating End Point) direction. A conservative value would be the sum of the committed information rates (CIRs) of all individual Frame Relay DLCIs multiplexed on the transport connection. For ATM connections, the value is converted to an equivalent Peak Cell Rate (PCR01) for all cells with Cell Loss Priority (CLP), CLP = 0 and CLP = 1. Note that the conversion to an equivalent cell rate for ATM connections may result in some wasted bandwidth depending on the average frame size to cell ratio.
Mib	DprsMcsEp
Values	Decimal (56000..155000000)
Units	bit/s
Default	512000

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD reverseBandwidth (rBw)

Access	Read and write
Description	This attribute specifies the bandwidth this End Point will request when setting up a transfer connection which the transport in the reverse (from the terminating to the originating End Point) direction. A conservative value would be the sum of the committed information rates (CIRs) of all individual Frame Relay DLCIs multiplexed on the transport connection. For ATM connections, the value is converted to an equivalent Peak Cell Rate (PCR01) for all cells with Cell Loss Priority (CLP), CLP = 0 and CLP = 1.

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Note that the conversion to an equivalent cell rate for ATM connections may result in some wasted bandwidth depending on the average frame size to cell ratio.

Mib	DprsMcsEp
Values	Decimal (56000..155000000) sameAsForward
Units	bit/s
Default	sameAsForward

COMPONENT McsMgr DprsMcsEpG Ep AtmConnection (AtmCon)

Groups	GROUP McsMgr DprsMcsEpG Ep AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	DprsMcsEp
Common Verbs	Help List Display

GROUP McsMgr DprsMcsEpG Ep AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	DprsMcsEp
Values	The name of the component
Default	No default

COMPONENT McsMgr DprsMcsEpG Ep LogicalConnection (LCo)

Groups	GROUP McsMgr DprsMcsEpG Ep LCo PathData GROUP McsMgr DprsMcsEpG Ep LCo Statistics (Stats)
Scope	Application

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Description	*...Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	DprsMcsEp
Common Verbs	Help List Display

VERB RERoute McsMgr DprsMcsEpG Ep LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP McsMgr DprsMcsEpG Ep LCo **PathData**

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **state**

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route

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	selection but received no route and is now waiting to retry route selection again.
Mib	DprsMcsEp
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **overrideRemoteName (orn)**

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	DprsMcsEp
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **end**

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	DprsMcsEp
Values	calling called
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **costMetric (cost)**

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	DprsMcsEp

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Values	Decimal (0..65535)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	DprsMcsEp
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	DprsMcsEp
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.

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Mib	DprsMcsEp
Values	Decimal (0..4)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	DprsMcsEp
Values	Decimal (0..4)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo requiredTrafficType (rttyp)

Access	Read only

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Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.
Mib	DprsMcsEp
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **permittedTrunkTypes (pttyp)**

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	DprsMcsEp
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **requiredSecurity (rsec)**

Access	Read only

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Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	DprsMcsEp
Values	Decimal (0..7)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **requiredCustomerParameter (rcparm)**

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	DprsMcsEp
Values	Decimal (0..7)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **emissionPriority (epri)**

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority*. *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	DprsMcsEp
Values	Decimal (0..2)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **discardPriority (dpri)**

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority*. One is used for

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paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).

Mib	DprsMcsEp
Values	Decimal (1..3)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **pathType (pType)**

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	DprsMcsEp
Values	normal manual forced
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **retryCount (rcount)**

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.

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Mib	DprsMcsEp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	DprsMcsEp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	DprsMcsEp
Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo lastTearDownReason

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Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up. ***normalShutDown*** - This path has gone down due to normal call termination. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction. ***insufficientRxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction. ***trunkFailure***- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute. ***trunkCardFailure***- A trunk FP card has failed along the path. ***accessCardFailure***- The FP on which the peer access service was running has failed. ***operatorForced***- The path has terminated due to the operator locking a trunk along the path. ***lostLcnClash***- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC. ***networkCongestion*** - The path has failed due to control information being lost and not recoverable. ***trunkNotFound*** - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly. ***farEndNotFound*** - The far end is not provisioned or is not up. Check remote Name. ***wrongModuleReached*** - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*. ***farEndBusy*** - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning. ***callLoopedBack*** - This LCo is provisioned to call itself. Re-provision since this is invalid. ***unknownReason*** - The failure was not resolved. ***farEndNotReady*** - The remote end was reached but the connection was refused due to the remote end not being enabled. ***remoteNameMismatch*** - The remote end has alarmed and rejected this setup due to remoteName provisioning. ***serviceTypeMismatch*** - The remote Service Type does not match this service type. Check provisioning.

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reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib — DprsMcsEp

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default — none

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **pathFailureAction**

Access — Read only

Description — This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If

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disconnectConnection is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.

All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends

Mib	DprsMcsEp
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **bumpPreference (bpref)**

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority.* A connection may also always bump in order to obtain the best route.
Mib	DprsMcsEp
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo **optimization (opt)**

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	DprsMcsEp
Values	disabled enabled

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Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	DprsMcsEp
Values	Time (DHMS)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	DprsMcsEp
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP McsMgr DprsMcsEpG Ep LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	DprsMcsEp
Values	Long Integer
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.

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Mib	DprsMcsEp
Values	Long Integer
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	DprsMcsEp
Values	Long Integer
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	DprsMcsEp
Values	Long Integer
Default	No default

COMPONENT McsMgr DprsMcsEpG Ep CallAdmissionControl (Cac)

Groups	GROUP McsMgr DprsMcsEpG Ep Cac Operational (Oper)
	COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl
Scope	Network
Description	*McsMgr DprsMcsEpG/n Ep/n CallAdmissionControl* This component indicates the operational values of the attributes specified by the *McsMgr DprsMcsEpG/n Ep/n Cac Cacd* component. Provisioning this component under an *EndPoint* forces each Frame Relay service connection using the switched path created by the given *EndPoint* to perform a service level CAC as the VC for the Frame Relay service connection is being established. Each Frame Relay service connection is either accepted or rejected based on the CAC attributes specified through the *Cacd* subcomponent. This component is optional on the originating End Point and Call Admission Control is not performed when this component is not provisioned on the originating End Point. This component is dynamic on the dynamic End Point and is present when

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there is a provisioned instance of the *CallAdmissionControl* component on the originating End Point.

Mib DprsMcsEp

Subcomponents COMPONENT McsMgr DprsMcsEpG Ep Cac CallAdmissionControlDescriptor (Cacd)

Common Verbs
Help
List
Display
Add
DELete

GROUP McsMgr DprsMcsEpG Ep Cac Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *CallAdmissionControl* component.

Mib DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidth (eBw)

Access Read only

Description This attribute indicates the total bandwidth which is used as the bandwidth pool for tracking call admission requests.
On the originating End Point the *effectiveBandwidth* is equal to the *forwardBandwidth* attribute specified in this End Point's *Epd* component multiplied by the *forwardOversubFactor* specified in the *Cacd* subcomponent.
On the terminating End Point the *effectiveBandwidth* is equal to the *reverseBandwidth* attribute specified in this End Point's *Epd* component multiplied by this End Point's *reverseOversubFactor* specified in the *Cacd* subcomponent.
This value indicates CIR bandwidth when the *cacType* attribute of the *Cacd* subcomponent is specified as ***cir***.
This value indicates EIR bandwidth when the *cacType* attribute of the *Cacd* subcomponent is specified as ***eir***.

Mib DprsMcsEp

Values Long Integer

Units bit/s

Default No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidthAvailable (eBwAvail)

Access Read only

Description This attribute indicates the effective bandwidth that is still available in the bandwidth pool for use by Frame Relay service connections requesting

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bandwidth. This value is the amount of *effectiveBandwith* less the amount reserved by Frame Relay service connections that have been admitted.
To display the specific Frame Relay service connections which have successfully completed call admission and to see the amount of bandwidth they have reserved, the network operator can use the following command:
*Display McsMgr DprsMcsEpG/n Ep/n Connection/**
This value indicates CIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is specified as ***cir***.
This value indicates EIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is specified as ***eir***.

Mib	DprsMcsEp
Values	Long Integer
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCallsActive (numOfCalls)

Access	Read only
Description	This attribute indicates the total number of Frame Relay service connections which have successfully completed call admission and are currently in service. To display the specific Frame Relay service connections which have successfully completed call admission and to see the amount of bandwidth they have reserved the network operator can use the following command: *Display McsMgr DprsMcsEpG/n Ep/n Connection/**
Mib	DprsMcsEp
Values	Decimal (0..512)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac cacPolicy (cacp)

Access	Read only
Description	This attribute indicates the CAC policy in use at this end of the switched path. For the originating End Point this is the value specified by the *forwardCacPolicy* attribute of the *Cacd* subcomponent. For the terminating End Point this is the value specified by the *reverseCacPolicy* attribute of the *Cacd* subcomponent of the originating End Point at the other end of the switched path. To determine the component name of the originating End Point, the following command can be used: *Display McsMgr DprsMcsEpG/n Ep/n remoteComponentName*
Mib	DprsMcsEp
Values	enforced (enf) monitored (mon)

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Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **cacType (cact)**

Access	Read only
Description	This attribute indicates the CAC type in use at this end of the switched path. For the originating End Point this is the value specified by the *forwardCacType* attribute of the *Cacd* subcomponent. For the terminating End Point this is the value specified by the *reverseCacType* attribute of the *Cacd* subcomponent of the originating End Point at the other end of the switched path.To determine the component name of the originating End Point, the following command can be used: *Display McsMgr DprsMcsEpG/n Ep/n remoteComponentName*
Mib	DprsMcsEp
Values	eir cir
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **maximumSvcBandwidth (maxSvcBw)**

Access	Read only
Description	This attribute indicates the largest amount of SVC bandwidth which can be reserved for a single Frame Relay service connection using the switched path. For the originating End Point this is the value specified by the *forwardMaximumSvcBw* attribute of the *Cacd* subcomponent. For the terminating End Point this is the value specified by the *reverseMaximumSvcBw* attribute of the *Cacd* subcomponent by the originating End Point at the other end of the switched path. This value indicates CIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is ***cir***. This value indicates EIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is ***eir***. The value of ***noMaximum*** for this attribute indicates that this attribute has either been provisioned not to have a maximum value or that the *cacPolicy* is ***monitored.***
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **maximumPvcBandwidth (maxPvcBw)**

Access	Read only

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Description	This attribute indicates the largest amount of PVC bandwidth allowed to be reserved for a single Frame Relay service connection using the switched path. For the originating End Point this is the value specified by the *forwardMaximumSvcBw* attribute of the *Cacd* subcomponent. For the terminating End Point this is the value specified by the *reverseMaximumSvcBw* attribute of the *Cacd* subcomponent by the originating End Point at the other end of the switched path. This value indicates CIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is ***cir***. This value indicates EIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is ***eir.*** The value of ***noMaximum*** for this attribute indicates that this attribute has either been provisioned not to have a maximum value or that the *cacPolicy* is ***monitored.***
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **numberOfCacFailures (numCacFailed)**

Access	Read only
Description	This attribute counts the total number of Frame Relay service connections which have failed to successfully complete call admission on the given switched path. This number does not increase if the *cacPolicy* attribute of the *McsMgr DprsMcsEpG/n EndPoint/m Cac* component is set to ***monitored***. This value wraps back to 0 when its maximum value is exceeded.
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **lastFailedFrDlci (lastFldFrDlci)**

Access	Read only
Description	This attribute indicates the component name of the last Frame Relay service connection which did not successfully complete call admission. This value is empty if no call admission failure has occurred.
Mib	DprsMcsEp
Values	The name of the component
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **lastFailedReason (failedReason)**

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Access	Read only
Description	This attribute indicates the reason for the failure of the last Frame Relay service connection's attempt at call admission. ***none*** indicates that there has been no call admission failure. ***noBandwidthAvailable*** indicates that there was insufficient ***effectiveBandwidthAvailable*** to admit the Frame Relay service connection. ***maxSvcExceeded*** indicates that an SVC was attempting to reserve more bandwidth than that specified by *maximumSvcBandwidth* attribute. ***maxPvcExceeded*** indicates that an SVC was attempting to reserve more bandwidth than that specified by *maximumPvcBandwidth* attribute. ***endPointCacUnavailable*** indicates that the End Point was not in a state in which it could process the call admission request. The Frame Relay service should attempt call admission again after a suitable backoff period. ***maxConsExceeded*** indicates that 512 call admission connections have already been accepted on this End Point.
Mib	DprsMcsEp
Values	none noBandwidthAvailable (noBw) maxSvcExceeded (maxSvc) maxPvcExceeded (maxPvc) epCacUnavailable (epCacUnavail) maxConsExceeded (maxCons)
Default	none

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **overSubscriptionFactor (osFactor)**

Access	Read only
Description	This attribute indicates the oversubscription factor that is applied to the forward and reverse bandwidth attributes of the parent component to determine the *effectiveBandwidth*. On the originating side of the switched path this value is equal to the *forwardOsFactor* specified in the *Cacd* subcomponent. On the terminating side of the switched path this value is equal to the *reverseOsFactor* attribute of the *Cacd* subcomponent at the originating end of the switched path.
Mib	DprsMcsEp
Values	Decimal (0.00..100.00)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **alarmThreshold**

Access	Read only
Description	This attribute indicates the alarm threshold values that are used at this end

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	of the switched path. On the originating end of the switch path these values are those specified by the *forwardAlarmThresholds* attribute of the *Cacd* subcomponent. On the terminating end of the switched path these values are those specified by the *reverseAlarmThresholds* attribute of the *Cacd* subcomponent on the originating end of the switched path
Mib	DprsMcsEp
Vector of	Decimal (0..100)
Index	minor major critical
Default	No default
Default	COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl
Description	The statistics record generated by the McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl component.

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidth

Description	This value indicates the level of effective bandwidth available during the last statistics collection interval, as indicated by the *effectiveBandwidth* attribute of the *McsMgr DprsMcsEpG/m EndPoint/n Cac* component in thousands of bits per second.
Values	Decimal (0..4294967295)
Units	kbit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidthAvailableLWM

Description	This value indicates the lowest level of effective bandwidth available as indicated by the *effectiveBandwidthAvailable* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component, in thousands of bits per second during the last statistics collection interval.
Values	Decimal (0..4294967295)
Units	kbit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCallsActiveHWM

Description	This value indicates the highest level of the *numberOfCallsActive* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component, during the last statistics collection interval.
Values	Decimal (0..512)

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCacFailures

Description	This value indicates the number of call admission failures in the last statistics collection interval. This value equals the increase in the

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numberOfCacFailures attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component during the last statistics collection interval.

Values: Decimal (0..4294967295)

COMPONENT McsMgr DprsMcsEpG Ep Cac CallAdmissionControlDescriptor (Cacd)

Groups: GROUP McsMgr DprsMcsEpG Ep Cac Cacd Forward (Frwd)
GROUP McsMgr DprsMcsEpG Ep Cac Cacd Reverse (Rvrs)

Scope: Network

Description: The component allows the network operator to specify the CAC attributes used for call admission for the originating and terminating End Points of this switched path. This component is provisioned at the originating End Point only.

Mib: DprsMcsEp

Common Verbs:
Help
List
Display

GROUP McsMgr DprsMcsEpG Ep Cac Cacd Forward (Frwd)

Properties: Provisioned

Description: This group contains the parameters that are used to specify the call admission control characteristics for the given End Point in the forward direction.

Mib: DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardCacPolicy (fCacP)

Access: Read and write

Description: This attribute specifies the call admission policy which is to be used in the forward direction.
When this attribute is set to ***enforced***, a Frame Relay service connection fails call admission if there is insufficient *effectiveBandwidth* available in the forward direction, the *forwardMaximumSvcBw* is exceeded, or the *forwardMaximumPvcBw* is exceeded. Call admission failure causes the Frame Relay service connection to clear.
When this attribute is set to ***monitored*** no Frame Relay service call will ever fail call admission.

Mib: DprsMcsEp

Values: enforced (enf)
monitored (mon)

Default: monitored

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardCacType (fCacT)

Access: Read and write

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Description	This attributes specifies whether the *effectiveBandwidth* in the forward direction is treated as ***eir*** or ***cir*** bandwidth.
Mib	DprsMcsEp
Values	eir cir
Default	cir

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd **forwardOversubFactor (fOsFactor)**

Access	Read and write
Description	This attribute specifies the level of oversubscription to be used when calculating the parent component's *effectiveBandwidth* in the forward direction. The *forwardBandwidth* attribute of the *McsMgr DprsMcsEpG/m Ep/n Epd* subcomponent is multiplied by this attribute to determine the *effectiveBandwidth* attribute.
Mib	DprsMcsEp
Values	Decimal (0.00..100.00)
Default	1.00

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd **forwardMaximumSvcBw (fMaxSvcBw)**

Access	Read and write
Description	This attribute specifies the maximum bandwidth that can be reserved by a Frame Relay SVC. The *forwardCacType* parameter specifies if this value is to be treated as an EIR or CIR value. If this attribute is set to ***noMaximum*** or the *forwardCacPolicy* is set to ***monitored*** this check is not made.
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum
Units	bit/s
Default	noMaximum

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd **forwardMaximumPvcBw (fMaxPvc)**

Access	Read and write
Description	This attribute specifies the maximum bandwidth that can be reserved by a Frame Relay PVC. The *forwardCacType* parameter specifies if this value is to be treated as an EIR or CIR value. If this attribute is set to ***noMaximum*** or the *forwardCacPolicy* is set to ***monitored*** this check is not made.
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum

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Units	bit/s
Default	noMaximum

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardAlarmThresholds (fAlarmThresh)

Access	Read and write
Description	This attribute specifies the bandwidth reservation level at which the minor, major, and critical alarms are raised at in the forward direction. By default all alarms are set to 0 disables alarm generation. Each of these threshold alarms is cleared when the reservation level falls 10% below the respective threshold level.
Mib	DprsMcsEp
Vector of	Decimal (0..100)
Index	minor major critical
Default	(0, 0, 0)

GROUP McsMgr DprsMcsEpG Ep Cac Cacd Reverse (Rvrs)

Properties	Provisioned
Description	This group contains the parameters that are used to specify the call admission control characteristics for the given End Point in the reverse direction.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd reverseCacPolicy (rCacPolicy)

Access	Read and write
Description	This attribute is used to specify the CAC policy to be used in the reverse direction. When this attribute is set to ***enforced*** a Frame Relay service connection will fail call admission if there insufficient *effectiveBandwidth* in the reverse direction, the *reverseMaximumSvcBw* is exceeded or the *reverseMaximumPvcBw* is exceeded. Call admission failure causes the Frame Relay service connection clear. When this attribute is set to ***monitored*** no Frame Relay service call is ever rejected. When this attribute is set to ***sameAsForward*** the *reverseCacPolicy* is the same as that specified by the *forwardCacPolicy* attribute.
Mib	DprsMcsEp
Values	enforced (enf) monitored (mon) sameAsForward (sameAsForw)
Default	sameAsForward

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ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd **reverseCacType (rCacType)**

Access	Read and write
Description	This attributes specifies if the *effectiveBandwidth* in the reverse direction is treated as ***eir*** or ***cir*** bandwidth. When this attribute is set to ***sameAsForward*** the *reverseCacType* is the same as that specified by the *forwardCacType* attribute.
Mib	DprsMcsEp
Values	eir cir sameAsForward (sameAsFor)
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd **reverseCacOverSub (rOsFactor)**

Access	Read and write
Description	This attribute specifies the level of over subscription to be used when calculating the parent component's *effectiveBandwidth* in the reverse direction. The *reverseBandwidth* attribute of the *McsMgr DprsMcsEpG/m Ep/n Epd* subcomponent is multiplied by this attribute to determine the *effectiveBandwidth* in the reverse direction. When this attribute is set to ***sameAsForward*** the *reverseCacOverSub* is the same as that specified by the *forwardCacOverSub* attribute.
Mib	DprsMcsEp
Values	Decimal (0.00..100.00) sameAsForward
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd **reverseMaxSvcBw (rMaxSvcBw)**

Access	Read and write
Description	This attribute specifies the maximum bandwidth that can be reserved by a Frame Relay SVC. The *reverseCacType* parameter specifies if this value is to be treated as an EIR or CIR value. If the *reverseCacPolicy* is set to ***monitored*** or the value of this attribute is set to ***noMaximum*** this check is not made. When this attribute is set to ***sameAsForward*** the *reverseMaxSvcBw* is the same as that specified by the *forwardMaxSvcBw* attribute.
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum sameAsForward
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd **reverseMaxPvcBw (rMaxPvcBw)**

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Access	Read and write
Description	This attribute specifies the maximum bandwidth that can be reserved by a Frame Relay PVC. The *reverseCacType* parameter specifies if this value is to be treated as an EIR or CIR value. If the *reverseCacPolicy* is set to ***monitored*** or the value of this attribute is set to ***noMaximum*** this check is not made. When this attribute is set to ***sameAsForward*** the *reverseMaxPvcBw* is the same as that specified by the *forwardMaxPvcBw* attribute.
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum sameAsForward
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd **reverseAlarmThresholds (rAlarmThresh)**

Access	Read and write
Description	This attribute specifies the reservation level at which the minor, major, and critical alarms are raised in the reverse direction. By default all alarms are set to 0 which is the off setting. Each of these threshold alarms are cleared when the reservation level falls 10% below each respective threshold level.
Mib	DprsMcsEp
Vector of	Decimal (0..100)
Index	minor major critical
Default	(0, 0, 0)

COMPONENT McsMgr DprsMcsEpG Ep **Connection (Con)**

Instance	Decimal (1..512)
Groups	GROUP McsMgr DprsMcsEpG Ep Con Operational (Oper)
Scope	Network
Description	*McsMgr DprsMcsEpG/n Ep/n Connection/n* This component represents a Frame Relay service connection which has successfully completed call admission on a given switched path.
Mib	DprsMcsEp
Common Verbs	Help List Display

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GROUP McsMgr DprsMcsEpG Ep Con **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *Connection* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep Con **frameRelayDlci (frDlci)**

Access	Read only
Description	This attribute indicates the DLCI of a Frame Relay service connection that has successfully completed call admission and has reserved bandwidth on this switched path.
Mib	DprsMcsEp
Values	The name of the component
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Con **reservedBandwidth (rBw)**

Access	Read only
Description	This attribute indicates the amount of bandwidth reserved by the given Frame Relay service connection. To determine if this is EIR or CIR bandwidth see the *cacType* attribute for this *EndPoint*.
Mib	DprsMcsEp
Values	Decimal (0..155000000)
Units	bit/s
Default	No default

COMPONENT McsMgr **Frf5EndPointGroup (Frf5EpG)**

Instance	Decimal (1..8191)
Scope	Application

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Description	*McsMgr Frf5EndPointGroup/n* The *Frf5EpG* component contains FRF.5 End Points that share a common destination NSAP address, and a list of address prefixes.
Mib	Frf5Ep
Subcomponents	COMPONENT McsMgr Frf5EpG Address (Addr)
Opt. Subcomp.	COMPONENT McsMgr Frf5EpG EndPoint (Ep)
Common Verbs	Help List Display Add DELete

COMPONENT McsMgr Frf5EpG Address (Addr)

Groups	GROUP McsMgr Frf5EpG Addr Provisioned (Prov)
Scope	Application
Description	*McsMgr Frf5EpG/n Address* This component contains the destination NSAP address used by all FRF.5 End Points provisioned under an *Frf5EpG*. The *Address* also provides the list of address prefixes directed to the end points under this group.
Mib	Frf5Ep
Common Verbs	Help List Display

GROUP McsMgr Frf5EpG Addr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Address* component.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Addr remoteAddress (rAddr)

Access	Read and write
Description	This attribute specifies the ATM End System Address (AESA) in the ISO NSAP format that is used by each *EndPoint* under this *Frf5EpG* to establish a VCC. For example, NSAP ATM address “45000006138292323F000000000020480D002900”.
Mib	Frf5Ep
Values	String (0..44, ASCII)

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Default	No default

ATTRIBUTE McsMgr Frf5EpG Addr commentText

Access	Read and write
Description	This optional attribute contains additional textual information to be added by the network operator.
Mib	Frf5Ep
Values	String (0..750, ASCII)
Default	""

ATTRIBUTE McsMgr Frf5EpG Addr addressPrefix (addrPre)

Access	Read and write
Description	This attribute specifies the list of prefixes directed to the *EndPoints* under this *Frf5EndPointGroup*. The individual end point is selected for each sub-connection on the basis of its supported Transfer priorities as defined by the *supportedTransferPriorities* attribute. For example, E.164 prefix “e.613722”, X.121 prefix “x.302”.
Mib	Frf5Ep
List of	String (3..17, ASCII)
Default	No default

COMPONENT McsMgr Frf5EpG EndPoint (Ep)

Instance	Decimal (0..15)
Groups	GROUP McsMgr Frf5EpG Ep OsiState (State) GROUP McsMgr Frf5EpG Ep Operational (Oper)
Scope	Application

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Description	*McsMgr Frf5EpG/n EndPoint/n* The *EndPoint* component represents a single ATM VCC that can multiplex multiple Frame Relay DLCIs.
Mib	Frf5Ep
Subcomponents	COMPONENT McsMgr Frf5EpG Ep EndPointDescriptor (Epd)
Opt. Subcomp.	COMPONENT McsMgr Frf5EpG Ep LocalManagementInterface (Lmi)
Dyn. Subcomp.	COMPONENT McsMgr Frf5EpG Ep DataLinkConnectionIdentifier (Dlci) COMPONENT McsMgr Frf5EpG Ep AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP McsMgr Frf5EpG Ep OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Frf5Ep

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE McsMgr Frf5EpG Ep operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Frf5Ep

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE McsMgr Frf5EpG Ep usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Frf5Ep

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Values	idle active (activ) busy
Default	idle

ATTRIBUTE McsMgr Frf5EpG Ep availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

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The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Frf5Ep
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Frf5Ep
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Frf5Ep
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Frf5Ep

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE McsMgr Frf5EpG Ep **standbyStatus (osiStby)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Frf5Ep
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE McsMgr Frf5EpG Ep unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Frf5Ep
Values	false true
Default	false

GROUP McsMgr Frf5EpG Ep Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the FRF.5 ATM connection.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep lastVccClearCause

Access	Read only
Description	This attribute indicates the clear cause value of the last SPVC release message received on the FRF.5 end point VCC pipe.
Mib	Frf5Ep
Values	Decimal (0..255)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep connectionTransferPriority (conntp)

Access	Read only
Description	This attribute indicates the transfer priority used to establish the ATM connection and to multiplex the Frame Relay DLCIs.
Mib	Frf5Ep

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Values	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep serviceCategory (sc)

Access	Read only
Description	This attribute indicates the ATM service category that is used for this connection.
Mib	Frf5Ep
Values	ubr cbr rtVbr nrtVbr
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep peakCellRate01 (pcr01)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the FRF.5 ATM VCC for all cells (with CLP=0 and CLP=1). The *pcr01* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority*. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep sustainedCellRate0 (scr0)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the FRF.5 ATM VCC for high priority cells (with CLP=0). The *scr0* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority*. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

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ATTRIBUTE McsMgr Frf5EpG Ep sustainedCellRate01 (scr01)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the FRF.5 ATM VCC for all cells (with CLP=0 and CLP=1). The *scr01* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority*. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep maximumBurstSize0 (mbs0)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the FRF.5 ATM VCC for high priority cells (with CLP=0). The *mbs0* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority*. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep maximumBurstSize01 (mbs01)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the FRF.5 ATM VCC for all cells (with CLP=0 and CLP=1). The *mbs01* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority*. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep avgFrameSize (afs)

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Access	Read only
Description	This attribute indicates the average frame size that is used in the traffic parameter conversion policy calculations for this end point.
Mib	Frf5Ep
Values	Decimal (1..8187)
Units	bytes
Default	128

ATTRIBUTE McsMgr Frf5EpG Ep trafficParmConvPolicy (tpcp)

Access	Read only
Description	This attribute indicates the traffic parameter conversion policy used to specify the equivalent ATM bandwidth rate at this end point. Policy 3 characterizes the traffic in the following way: - ATM traffic descriptor type 6 is selected - PCR0+1 is based on the AR - SCR0+1 is based on the CIR and EIR - MBS0+1 is based on Bc, Be, CIR, EIR, and AR - Takes into account that the instantaneous rate of the frame relay stream can burst above CIR and up to the AR. Policy 4 characterizes the traffic in the following way: - ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer. - PCR0+1 is based on the AR - SCR0 is based on the CIR - MBS0 is based on Bc, CIR, and AR - There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR. Policy 5 characterizes the traffic in the following way: - ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer - PCR0+1 is based on CIR and EIR - SCR0 is based on the CIR - MBS0 is based on the Bc, CIR, and AR - The maximum PCR is no longer based on AR but based on the CIR and EIR. Policy 6 characterizes the traffic in the following way: - ATM traffic descriptor type 3 is selected - PCR0+1 is based only on CIR.
Mib	Frf5Ep

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Values	3 4 5 6
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep type

Access	Read only
Description	This attribute indicates the FRF.5 End Point type. If the value is ***master***, this End Point is responsible for initiating the call to set up the FRF.5 ATM VCC. If the value is ***slave***, this End Point receives call setup requests from the remote end.
Mib	Frf5Ep
Values	master slave
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep lastVccCauseDiag

Access	Read only
Description	This attribute indicates the diagnostic value of the last SPVC release message received on the FRF.5 end point VCC pipe.
Mib	Frf5Ep
Values	String (1..8, Hex)
Default	No default

COMPONENT McsMgr Frf5EpG Ep LocalManagementInterface (Lmi)

Groups	GROUP McsMgr Frf5EpG Ep Lmi ProtocolParameters (Parms) GROUP McsMgr Frf5EpG Ep Lmi NniProtocolParameters (NniParms) GROUP McsMgr Frf5EpG Ep Lmi OsiState (State) GROUP McsMgr Frf5EpG Ep Lmi ProtocolStatusInfo (Psi) GROUP McsMgr Frf5EpG Ep Lmi Statistics (Stats)
Scope	Application

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Description	*DsMgr Frf5EpG/n Ep/m LocalManagementInterface* This component defines the parameters for implementing the Frame Relay Forum FRF.5 Local Management Interface protocol.
Mib	Frf5Ep
Common Verbs	Help List Display Add DELete

GROUP McsMgr Frf5EpG Ep Lmi ProtocolParameters (Parms)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Local Management Interface component.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi procedures (proc)

Access	Read and write
Description	This attribute selects the procedures to be used for the Local Management Interface. The following are the supported procedures: ***none***: no Local Management Interface procedures are running on the ATM VCC. This accommodates remote interworking functions which do not implement LMI procedures. In this case, the remaining attributes of this group will be ignored. ***ccitt***: Local Management Interface procedures from the CCITT specification are supported. *Dlci/0* is used for the LMI protocol, to comply with FRF.5. ***ansi***: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol.
Mib	Frf5Ep
Values	none ansi ccitt
Default	ccitt

ATTRIBUTE McsMgr Frf5EpG Ep Lmi asyncStatusReport (asr)

Access	Read and write

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Description

This attribute selects the use of asynchronous PVC status report procedures as specified in the CCITT specification (ITU-T Q.933, Annex A), and the ANSI specification Annex D.

Mib: Frf5Ep

Values: off
on

Default: on

ATTRIBUTE McsMgr Frf5EpG Ep Lmi errorEventThreshold (n392)

Access: Read and write

Description

For the network side procedure, an event is defined as follows: (1) receipt of a STATUS ENQUIRY message, or (2) expiration of timer T392. An error event is (1) nonreceipt of STATUS ENQUIRY in T392 seconds; (2) invalid format of an LMI message; (3) invalid receive sequence number.
For the user side procedure, an event is defined as a polling cycle or a status enquiry and status report exchange. An error event is (1) non-receipt of a STATUS within the polling cycle, or (2) invalid format of an LMI message, or (3) invalid sequence number.

This attribute specifies the number of error events which, if they occur within *eventCount* events, will cause a protocol error condition. The condition is cleared after *eventCount* sequential correct events occur.

It must be less than or equal to *eventCount* (n393).

Mib: Frf5Ep

Values: Decimal (1..10)

Default: 3

ATTRIBUTE McsMgr Frf5EpG Ep Lmi eventCount (n393)

Access: Read and write

Description

This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed.

It must be greater than or equal to *errorEventThreshold* (n392).

Mib: Frf5Ep

Values: Decimal (1..10)

Default: 4

ATTRIBUTE McsMgr Frf5EpG Ep Lmi checkPointTimer (t392)

Access: Read and write

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Description	This attribute selects the time (in seconds) within which a STATUS ENQUIRY message is expected. It must be greater than *linkVerificationTimer* (t391).
Mib	Frf5Ep
Values	Decimal (5..255)
Units	seconds
Default	200

ATTRIBUTE McsMgr Frf5EpG Ep Lmi side

Access	Read and write
Description	This attribute selects the user side procedure (DTE), or the network side procedure (DCE), or both the user side and the network side procedures of the LMI. This attribute can be set to ***user, network*** or ***both***.
Mib	Frf5Ep
Values	network user both
Default	both

GROUP McsMgr Frf5EpG Ep Lmi NniProtocolParameters (NniParms)

Properties	Provisioned
Description	This group contains the provisionable attributes of the FRF.5 LMI procedures which are unique to NNI.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi fullStatusPollingCycles (n391)

Access	Read and write
Description	This attribute specifies how frequently the FRF.5 LMI initiates a Status Enquiry for a full PVC status report. A polling cycle is a Status Enquiry and Status Report exchange.
Mib	Frf5Ep
Values	Decimal (1..255)
Default	1

ATTRIBUTE McsMgr Frf5EpG Ep Lmi linkVerificationTimer (t391)

Access	Read and write

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Description	This attribute specifies how frequently the FRF.5 LMI initiates a Status Enquiry for link integrity verification. It must be less than *checkPointTimer* (t392).
Mib	Frf5Ep
Values	Decimal (5..255)
Units	seconds
Default	180

GROUP **McsMgr Frf5EpG Ep Lmi** **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Frf5Ep

ATTRIBUTE **McsMgr Frf5EpG Ep Lmi** **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Frf5Ep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE **McsMgr Frf5EpG Ep Lmi** **operationalState (osiOper)**

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Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Frf5Ep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Frf5Ep
Values	idle active (activ) busy
Default	idle

GROUP McsMgr Frf5EpG Ep Lmi **ProtocolStatusInfo (Psi)**

Properties	Operational
Description	This group provides the protocol status of the Local Management Interface.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **protocolStatus**

Access	Read only
Description	This attribute indicates whether the LMI is in an error condition or whether

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the protocol is behaving normally. This attribute will be set to ***errorCondition*** after enough LMI errors have been detected to warrant a change in condition. This occurs when *n392* of the last *n393* events are in error.
The error condition is lifted when a sufficient number of consecutive events has occurred without error. This occurs when *n393* consecutive good events take place.
The consequence of an error condition is that all DLCIs on this interface will become inactive in both directions.

Mib: Frf5Ep

Values:
errorCondition
normalCondition

Default: normalCondition

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **opProcedures (opProc)**

Access: Read only

Criticality: Process

Description: This attribute indicates the procedures being used for the Local Management Interface. This attribute should be ignored if *protocolStatus* is not ***normalCondition***. The following procedures are supported:

none: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures.

ansi: Local Management Interface procedures from the ANSI specification are being used. DLCI 0 is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are being used. DLCI 0 is used for the LMI protocol.

Mib: Frf5Ep

Values:
none
ansi
itu

Default: No default

GROUP McsMgr Frf5EpG Ep Lmi **Statistics (Stats)**

Properties: Operational

Description:
This group contains the operational statistics for the FRF.5 NNI Local Management Interface.

Mib: Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **keepAliveStatusToInterface (kasti)**

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Access	Read only
Description	This attribute counts the Local Management Interface keep alive status messages sent to the ATM VCC in response to a status enquiry for keep alive status. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **fullStatusToInterface (fsti)**

Access	Read only
Description	This attribute counts the Local Management Interface full status messages sent to the ATM VCC in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **keepAliveStatusEnqFromInterface (kafi)**

Access	Read only
Description	This attribute counts the Local Management Interface valid keep alive status enquiry messages received from the ATM VCC. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **fullStatusEnqFromInterface (fsfi)**

Access	Read only
Description	This attribute counts the Local Management Interface valid full status enquiry messages received from the ATM VCC. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **networkSideEventHistory (nsh)**

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Access	Read only
Description	This attribute displays the Local Management Interface network side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The left most event is the most recent to occur. The provisioned *eventCount* dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status enquiry message. An error event is either a T392 timer expiry or receipt of a status enquiry with an incorrect sequence number.
Mib	Frf5Ep
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **userSideEventHistory (ush)**

Access	Read only
Description	This attribute displays the Local Management Interface user side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The left most event is the most recent to occur. The provisioned *eventCount* dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status message. An error event is either a T391 timer expiry or receipt of a status message with an incorrect sequence number.
Mib	Frf5Ep
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **protocolErrors (proto)**

Access	Read only
Description	This attribute counts the number of Local Management Interface protocol errors. It is the sum of the sequence (*sequenceErrors* and *statusSequenceErrors*) and timeout (*pollingVerifTimeouts* and *noStatusReportCount*) errors. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **unexpectedIes (uie)**

Access	Read only

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Description	This attribute counts the number of Local Management Interface frames received with an Information Element identifier that is unknown or unexpected. An unexpected Information Element is not a protocol error. When the maximum count is reached, this counter wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **sequenceErrors (seq)**

Access	Read only
Description	This attribute counts the number of Local Management Interface Status Enquiry message sequence errors. A sequence error is receipt of a Status Enquiry message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **statusSequenceErrors (stseq)**

Access	Read only
Description	This attribute counts the number of Local Management Interface Status message sequence errors. A sequence error is receipt of a Status message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi **unexpectedReports (ur)**

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an unknown or unexpected report type. An unexpected report type is not a protocol error. When the maximum count is reached the counter wraps to zero.
Mib	Frf5Ep

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi pollingVerifTimeouts (tmo)

Access	Read only
Description	This attribute counts the *checkPointTimer* (T392) expiries occurring on the Local Management Interface. When the maximum count is reached the counter wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi noStatusReportCount (nsrc)

Access	Read only
Description	This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented: i) after a status enquiry is sent out and the T391 timer expires without having a status report received. ii) if an invalid status report is received. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi keepAliveEnqTolf (kaeti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive enquiry status messages sent to the external user device for keep alive status. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi fullStatusEnqTolf (fseti)

Access	Read only

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Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

COMPONENT McsMgr Frf5EpG Ep EndPointDescriptor (Epd)

Groups	GROUP McsMgr Frf5EpG Ep Epd Provisioned (Prov) GROUP McsMgr Frf5EpG Ep Epd CustomerIdentifierData (CidData)
Scope	Application
Description	*McsMgr Frf5EpG/n Ep/n EndPointDescriptor* This component describes the ATM SPVC which supports the FRF.5 connection.
Mib	Frf5Ep
Common Verbs	Help List Display

GROUP McsMgr Frf5EpG Ep Epd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the FRF.5 End Point.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Epd remoteConnectionIdentifier (rci)

Access	Read and write
Description	This attribute specifies the remote connection identifier. It either represents the VPI.VCI logical channel number assignment of a remote ATM interface, or the *Endpoint.Frf5EndPointGroup* instances of a remote FRF.5 EndPoint.
Mib	Frf5Ep
Values	Integer Sequence (0..255; 0..16128)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep Epd connectionTransferPriority (conntp)

Access	Read and write

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Description	This attribute specifies the transfer priority used to establish the ATM connection. The *EndPoint* references the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component to determine the ATM service category to be used by the connection. This attribute is also used to determine which *EndPoint* within an *Frf5EndPointGroup* is to multiplex a particular *FrAtm Dlci*.
Mib	Frf5Ep
Values	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep Epd **committedInformationRate (cir)**

Access	Read and write
Description	This attribute specifies the committed information rate (CIR), and represents the rate at which the network FRF.5 ATM VCC agrees to transfer information under normal conditions. A conservative CIR value would be the sum of the CIRs of all the individual *FrAtm Dlci*s multiplexed by the VCC. The *cir* is converted into ATM service parameters according to the conversion policy specified by the *connectionTransferPriority* attribute. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE McsMgr Frf5EpG Ep Epd **excessInformationRate (eir)**

Access	Read and write
Description	This attribute specifies the excess information rate (EIR), and represents the rate at which the network FRF.5 ATM VCC attempts to transfer information. A conservative EIR value would be the sum of the EIRs of all the individual *FrAtm Dlci*s multiplexed by the VCC. The *eir* is converted into ATM service parameters according to the conversion policy specified by the *connectionTransferPriority* attribute. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bit/s
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Epd **committedBurstSize (bc)**

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Access	Read and write
Description	This attribute specifies the committed burst size (Bc), and represents the amount of data that the network FRF.5 ATM VCC agrees to transfer under normal conditions. A conservative Bc value would be the sum of the Bcs of all the individual *FrAtm Dlci*s multiplexed by the VCC. The *bc* is converted into ATM service parameters according to the conversion policy specified by the *connectionTransferPriority* attribute. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bits
Default	16000

ATTRIBUTE McsMgr Frf5EpG Ep Epd **type**

Access	Read and write
Description	This attribute specifies the FRF.5 End Point type. If the value is provisioned as ***master***, this End Point is responsible for initiating the SPVC call to set up the FRF.5 ATM VCC. If the value is provisioned as ***slave***, this End Point receives call setup requests from a master remote end.
Mib	Frf5Ep
Values	master slave
Default	master

ATTRIBUTE McsMgr Frf5EpG Ep Epd **accessRate (ar)**

Access	Read and write
Description	This attribute represents the access rate of the FRF.5 EndPoint. A conservative value would be the sum of the access rates of all the *FrAtms'* that have DLCIs multiplexed by the VCC. The access rate is converted into ATM service parameters when conversion policies 3, 4 and 5 are used. For policy 6, this attribute is ignored.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bit/s
Default	1536000

ATTRIBUTE McsMgr Frf5EpG Ep Epd **excessBurstSize (be)**

Access	Read and write

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Description	This attribute specifies the excess burst size (Be), and represents the amount of uncommitted data that the network FRF.5 ATM VCC agrees to transfer under normal conditions. A conservative Be value would be the sum of the Bes of all the individual *FrAtm Dlci*s multiplexed by the VCC. The *be* is converted into ATM service parameters according to the conversion policy specified by the *connectionTransferPriority* attribute. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bits
Default	0

GROUP McsMgr Frf5EpG Ep Epd **CustomerIdentifierData (CidData)**

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Epd **customerIdentifier (cid)**

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Frf5Ep
Values	Decimal (0; 1..8191)
Default	0

COMPONENT McsMgr Frf5EpG Ep **DataLinkConnectionIdentifier (Dlci)**

Instance	Decimal (16..1007; 1022)

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Groups	GROUP McsMgr Frf5EpG Ep Dlci Operational (Oper)
Scope	Application
Description	*McsMgr Frf5EpGrp/n Ep/n DataLinkConnectionIdentifier/n* This component represents a logical connection multiplexed inside the FRF.5 ATM VCC.
Mib	Frf5Ep
Common Verbs	Help List Display

GROUP McsMgr Frf5EpG Ep Dlci Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the FRF.5 DLCI.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Dlci aBitStatusToIf (abti)

Access	Read only
Description	This attribute indicates the most recent A-bit status sent to the ATM VCC. If the value is ***inactive***, the reason for the LMI failure is given by the *aBitReasonToNetwork*.
Mib	Frf5Ep
Values	inactive active
Default	inactive

ATTRIBUTE McsMgr Frf5EpG Ep Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute indicates the reason for the latest inactive A-bit status sent to the ATM VCC. The value is ***notApplicable*** when the *aBitStatusToNetwork* is ***active***. The value is ***remoteUserSignaled*** if the *FrAtm* originating the A-Bit status has detected that the virtual circuit is down at the remote network through the LMI protocol. The *FrAtm* must be running network site LMI protocol for this A-Bit status reason to be sent. The value is ***localLmiError*** if the LMI protocol is down at this *Ep*. The value is ***remoteLmiError*** if the LMI protocol is down at the *FrAtm* originating this A-Bit status reason. The value is ***localLinkDown*** if the physical interface is disabled at this *Ep*. The value is ***pvcDown*** if no A-Bit status has been sent to this *Ep* (i.e., no A-Bit status has been relayed from the *FrAtm*). The value is ***remoteLinkDown*** if the physical interface is disabled at the *FrAtm* originating this A-Bit status reason.

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Mib	Frf5Ep
Values	notApplicable remoteUserSignaled localLmiError remoteLmiError localLinkDown remoteLinkDown pvcDown
Default	notApplicable

ATTRIBUTE McsMgr Frf5EpG Ep Dlci **aBitStatusFromIf (abfi)**

Access	Read only
Description	This attribute indicates the most recent A-bit status received from the ATM VCC. If the value is ***inactive***, the reason for the LMI failure is given by the *aBitReasonFromNetwork*.
Mib	Frf5Ep
Values	inactive active
Default	inactive

ATTRIBUTE McsMgr Frf5EpG Ep Dlci **aBitReasonFromIf (abrfi)**

Access	Read only
Description	This attributes indicates the reason for the latest inactive A-bit status received from the ATM VCC. The value is ***notApplicable*** when the *aBitStatusFromNetwork* is ***active***. The value is ***remoteUserSignaled*** if the remote FRF.5 End Point originating the A-Bit status has detected that the virtual circuit is down at the remote network through the LMI protocol. The remote FRF.5 End Point must be running network site LMI protocol for this A-Bit status reason to be sent. The value is ***localLmiError*** if the LMI protocol is down at this *Ep*. The value is ***localLinkDown*** if the physical interface is disabled at this *Ep*. The value is ***missingFromLmiReport*** if the remote FRF.5 End Point did not provide a reason along with the inactive A-Bit status.
Mib	Frf5Ep
Values	notApplicable remoteUserSignalled localLmiError localLinkDown missingFromLmiReport
Default	notApplicable

ATTRIBUTE McsMgr Frf5EpG Ep Dlci **accessConnectionComponent (acc)**

Access	Read only

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Description	This attribute identifies the *FrAtm Dlci* to which this *Dlci* component is bound.
Mib	Frf5Ep
Values	String (0..26, ASCII)
Default	No default

COMPONENT McsMgr Frf5EpG Ep AtmConnection (AtmCon)

Groups	GROUP McsMgr Frf5EpG Ep AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Frf5Ep
Common Verbs	Help List Display

GROUP McsMgr Frf5EpG Ep AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Frf5Ep
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - McsMgr

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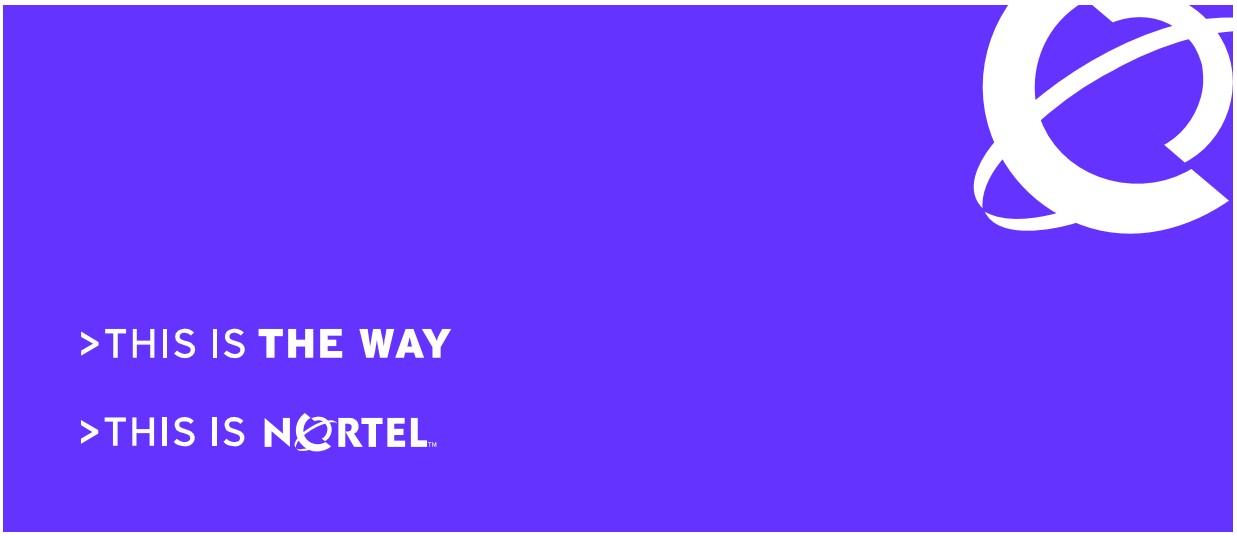

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - MmTx

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COMPONENT MaintenanceMonitorTx (MmTx)

Instance	Decimal (1..15)
Groups	GROUP MmTx CustomerIdentifierData (CidData) GROUP MmTx Provisioned (Prov) GROUP MmTx OsiState (State) GROUP MmTx Operational (Oper)
Scope	Application
Description	*MaintenanceMonitorTx/n* A *MaintenanceMonitorTx* component identifies an instance of the MaintenanceMonitor AAL1 Circuit Emulation Service. The service that is used to transport the copy of the monitored traffic to a local or remote observer is basic structured AAL1 CES. This stream is mono directional from the monitor point to the observer. Any ATM traffic that is received from the observer (which may occur if the observer uses a standard AAL1 CES service) is discarded at the monitoring point. A separate instance of this component is required for each monitored channel. Instance numbers, which are used to uniquely identify *MaintenanceMonitorTx* component instances, are arbitrary. Only one instance of *MaintenanceMonitorTx* may be linked to a particular *LogicalProcessor.*
Mib	CircuitEmulationService
Opt. Subcomp.	COMPONENT MmTx NailedUpAdaptationPoint (Nap)
Common Verbs	Help List Display Add DELete

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GROUP MmTx CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	CircuitEmulationService

ATTRIBUTE MmTx customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	CircuitEmulationService
Values	Decimal (0; 1..8191)
Default	0

GROUP MmTx Provisioned (Prov)

Properties	Provisioned
Description	This group contains basic provisioning data for the Maintenance Monitor Transmitter (MmTx). A MmTx represents a mono-directional AAL1 Circuit Emulation Service. AAL1 CES attributes in this group are essential information to the operator about the AAL1 CES service that must be matched in the *Aal1Ces* component that receives the monitored stream. The check escape checks that only one instance of a *MaintenanceMonitorTx* is linked to any one *Lp*.
Mib	CircuitEmulationService

ATTRIBUTE MmTx linkToLogicalProcessor (lpName)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the instance of a hardware component to which an instance of this component is linked. Only *Lp* components may be linked.
Mib	CircuitEmulationService
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE MmTx monitoredDirection (direction)

Access	Read and write
Criticality	Process
Description	This attribute specifies the direction of the monitored traffic. When ***ingress*** value is specified, the traffic coming from the interface and going to the backplane is monitored and specified by *chanToMonitor.* When ***Egress*** value is specified, the traffic coming from the backplane and going to the interface is monitored and specified by *chanToMonitor.*
Mib	CircuitEmulationService
Values	ingress egress
Default	ingress

ATTRIBUTE MmTx serviceType (servType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the service type of the CES. The *serviceType* attribute in the receiving *Aal1Ces* component must have the same value as this attribute.
Mib	CircuitEmulationService
Values	basicStructured
Default	basicStructured

ATTRIBUTE MmTx partialFill (partFill)

Access	Read and write
Criticality	Component
Description	This attribute specifies the number of octets that are carried in an ATM cell by the AAL1 CES service. A full cell contains 47 octets. The *partialFill* attribute in the receiving *Aal1Ces* component must have the same value as this attribute.

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Mib	CircuitEmulationService
Values	Decimal (47)
Units	octets
Default	47

GROUP MmTx OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	CircuitEmulationService

ATTRIBUTE MmTx adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	CircuitEmulationService
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE MmTx operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	CircuitEmulationService
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE MmTx usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	CircuitEmulationService
Values	idle active (activ) busy
Default	idle

ATTRIBUTE MmTx availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	CircuitEmulationService
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE MmTx proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	CircuitEmulationService
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE MmTx controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	CircuitEmulationService
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE MmTx alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	CircuitEmulationService
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE MmTx standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	CircuitEmulationService
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE MmTx unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	CircuitEmulationService
Values	false true
Default	false

GROUP MmTx Operational (Oper)

Properties	Operational
Description	This group contains status information about the AAL1 Circuit Emulation Service and the related ATM service. It also specifies the Channel to be monitored.
Mib	CircuitEmulationService

ATTRIBUTE MmTx connectionStatus (connStatus)

Access	Read only
Description	This attribute indicates if a service is non-operational because of a problem with the service interface side of the service (in which case, it is set to ***channelNotReady***) or because of a problem with the ATM side of the service (in which case, it is set to ***atmNotConfigured*** or ***atmNotReady***). When this attribute is set to ***channelNotReady***, it is an indication that the corresponding *Chan* component (as defined by the attribute *interfaceName*) or the *Chan* component's parent port component (*Lp/n Ds1/m* or *Lp/n E1/m*) is locked. When this attribute is set to ***atmNotConfigured***, it is an indication that no sub-component has been provisioned, and thus no ATM connection has been configured for the service.

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When this attribute is set to ***atmNotReady***, it is an indication that the ATM connection with which the service is associated (as defined by a sub-component) has been lost or that it is currently unable to carry CES data.

When this attribute is set to ***channelNotSpecified***, it is an indication that the *chanToMonitor* attribute is not set to a valid channel.

This attribute is set to ***connected*** when a service is operational (that is, the OSI attribute *operationalState* is ***enabled***.)

Mib — CircuitEmulationService

Values — connected
channelNotReady
atmNotReady
atmNotConfigured
channelNotSpecified

Default — channelNotReady

ATTRIBUTE MmTx chanToMonitor (chan)

Access — Read and write

Description — *chanToMonitor* specifies the LP, port (*E1* or *DS1*), and channel to monitor. The LP must be the same LP specified in the provisionable attribute *linkToLogicalProcessor*. This attribute's value is of the form Lp/x E1/y Chan/z or Lp/x DS1/y Chan/z.

Mib — CircuitEmulationService

Values — The name of the component

Default — No default

COMPONENT MmTx NailedUpAdaptationPoint (Nap)

Groups — GROUP MmTx Nap Provisioned (Prov)

Scope — Application

Description — *Aal1Ces/n NailedUpAdaptationPoint*

A *NailedUpAdaptationPoint* is a nailed-up point which straddles the CBR/ATM domains and which is associated with the adaptation of CBR data to/from ATM cells.

If a *NailedUpAdaptationPoint* component is provisioned under an *Aal1Ces*

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component, no other components may be provisioned under the same *Aal1Ces* component.

Mib	CircuitEmulationService
Common Verbs	Help List Display Add DELete

GROUP MmTx Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *NailedUpAdaptationPoint* component.
Mib	CircuitEmulationService

ATTRIBUTE MmTx Nap atmConnection (ac)

Access	Read and write
Criticality	Component
Description	This attribute specifies the identity of the component to which the *NailedUpAdaptationPoint* is linked. This is an *AtmIf Vcc NailedUpEndPoint or an AtmIf Vpt Vcc NailedUpEndPoint* (the AAL1 cells are transported off the switch over an ATM UNI, where they are routed to the appropriate AAL1 entity at the other end by the ATM bearer service).
Mib	CircuitEmulationService
Values	Link (Service, applicationName)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - MmTx

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Document status: Standard
Document issue: 7.2S1
Document date: March 2006
Product release: PCR7.2 and up
Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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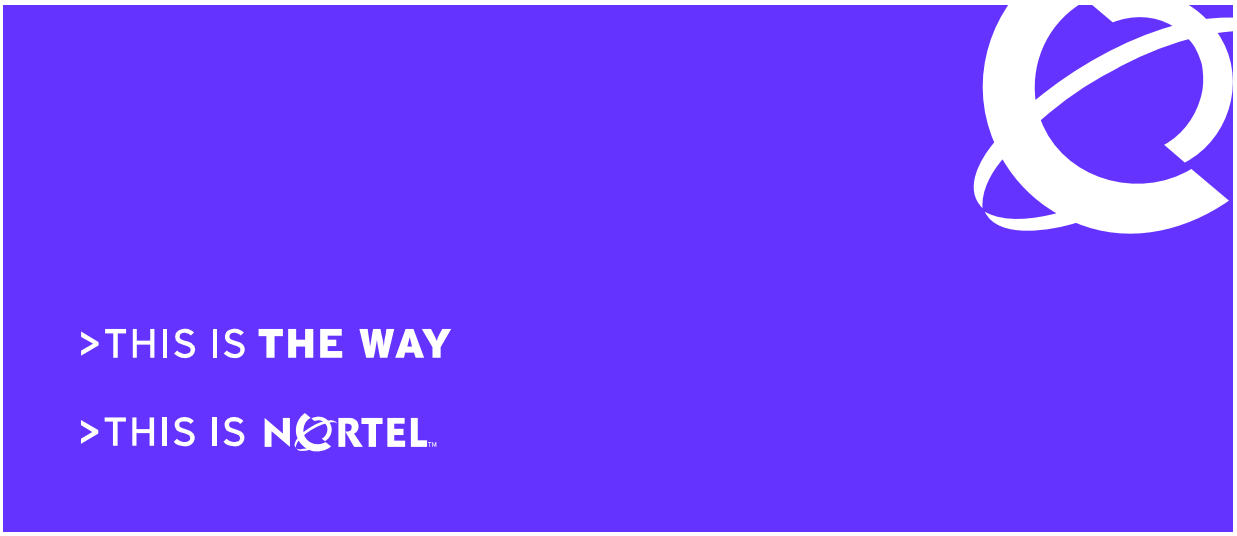

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Mod

NN10600-060

Document status: Standard
Document issue: 7.2S1
Document date: March 2006
Product release: PCR7.2 and up
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Type: NTP
Language type: U.S. English

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COMPONENT ModuleData (Mod)

Groups	GROUP Mod Provisioned (Prov)
Scope	Network
Description	Module wide provisioning data is used to define a number of attributes used by various systems within the module.
Mib	BaseShelf
Subcomponents	COMPONENT Mod FrameRelaySystem (Frs)
Opt. Subcomp.	COMPONENT Mod VirtualCircuitSystem (Vcs)
Common Verbs	Help List Display

GROUP Mod Provisioned (Prov)

Properties	Provisioned
Description	*Mod Provisionable* This group provides attributes that are used by internal and external systems to identify the module.
Mib	BaseShelf

ATTRIBUTE Mod nodeId

Access	Read and write
Criticality	Module
Description	This attribute specifies a number that uniquely identifies a node in the network. Changing the value of the *nodeId* attribute causes the node to be restarted.
Mib	BaseShelf
Values	Decimal (1..4095)
Default	No default

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ATTRIBUTE Mod nodeName

Access	Read and write
Criticality	Module
Description	This attribute specifies a string that is unique to this module in the network. This name is the component instance value of EM - the root of the component hierarchy. It has, therefore, the same restriction and behavior as any string instance value (for example, it is converted to upper case). Note that the EM component is typically suppressed on output. Changing the value of the *nodeName* attribute causes the node to restarted.
Mib	BaseShelf
Values	String (1..12, ASCII)
Default	NONAME

ATTRIBUTE Mod namsId

Access	Read and write
Criticality	Module
Description	This attribute specifies the Network Administration (Nams) Identifier associated with the node. It must be unique across the entire network of nodes supporting the transport of DPN traffic as well as all RMs and AMs in the network. The *namsId* attribute must be set when a *DpnAddressPlan* component is configured on a node. The value of the *namsId* attribute is used in accounting records, statistics records, and time change accounting records; it identifies nodes in these records. The Nams Id is assigned by the network administrator. A value of ***49151*** indicates that no Nams Id has been assigned to the module. Changing the value of the *namsId* attribute causes the node to be restarted.
Mib	BaseShelf
Values	Decimal (256..49151)
Default	49151

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ATTRIBUTE Mod regionId

Access	Read and write
Description	This attribute specifies the Topology Region to which the node belongs. Nodes only exchange topological information with connected nodes in the same region. Changing the value of the *regionId* attribute does NOT cause the node to be restarted.
Mib	BaseShelf
Values	Decimal (0..126)
Default	0

ATTRIBUTE Mod nodePrefix

Access	Read and write
Criticality	Module
Description	This attribute specifies an NSAP prefix which is distributed to all other nodes whose *clusterNode* attribute under the *Rtg* component is provisioned with the same value as this node within a Topology region. The attribute can be used to identify this node. This prefix is used by PORS, PNNI routing, and MCS. PORS calls that use NSAP addressing (for example, CES) look for the node with the longest NSAP prefix that matches the called party address. The NSAP prefixes that PORS matches against are the *nodePrefix* and the *alternatePorsPrefixes*. PNNI forms the default value of the *nodeAddressPrefix* attribute under the *AtmPnni* component with this NSAP prefix followed by a unique MAC address. MCS uses the *nodePrefix* to form an NSAP address that is registered with the Networking API. This NSAP address is used to identify this node when establishing an MCS switched path. The value entered must be 26 characters long. All characters must be hexadecimal with the following restrictions: - the first two characters are in the range of ‘10’ to ‘FE’, inclusive. - if the first two characters are ‘45’, the 18th character must be an ‘f’ or an ‘F’
Mib	BaseShelf
Values	String (0..26, ASCII)
Default	""

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ATTRIBUTE Mod alternatePorsPrefixes

Access	Read and write
Criticality	Module
Description	This attribute specifies four NSAP prefixes which are distributed to all other nodes whose *clusterNode* attribute under the *Rtg* component is provisioned with the same value as this node within a Topology region. The attribute can be used to identify this node. These prefixes are used by PORS. PORS calls that use NSAP addressing (for example, CES) look for the node with the longest NSAP prefix that matches the called party address. The NSAP prefixes that PORS matches against are the *alternatePorsPrefixes* and the *nodePrefix*. These prefixes may contain up to 40 hexadecimal characters.
Mib	BaseShelf
Vector of	String (0..40, ASCII)
Index	Decimal (0..3)
Default	([4] "")

COMPONENT Mod VirtualCircuitSystem (Vcs)

Groups	GROUP Mod Vcs AccountingOptions (AccOpt) GROUP Mod Vcs WindowOptions (WinOpt) GROUP Mod Vcs AddressingOptions (AddOpt) GROUP Mod Vcs InterfaceOptions (IntOpt)
Scope	Application
Description	*ModuleData Vcs* *ModuleData VirtualCircuitSystem* is used to define a number of general characteristics for all *Vcs* that originate from or terminate on a particular module. As an example, the *Vc* Window matrix is defined on a module basis to provide the expected virtual circuit window sizes to associate with all *Vcs* on the module. All the modules in the network should have identical *VirtualCircuitSystem* attributes. If these attributes are not consistent across the network applications which need *Vc* may not be able to establish calls.
Mib	SubnetInterface
Common Verbs	Help List Display Add DELete

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GROUP Mod Vcs AccountingOptions (AccOpt)

Properties	Provisioned
Description	Accounting information is owned by the *Vc* System; it is stored in the *Vc* Accounting component, which itself is considered to be a component on the switch. The Accounting Component contains a bit map indicating which of the accounting facilities are to be spooled in the accounting record - for example, bit '0' if set indicates that the accounting facility with facility code H.00 should be spooled if present in the *Vc* for accounting purposes. The data contained in the *Vc* Accounting must be identical network wide even though the component can be changed and upgraded on a module by module basis.
Mib	SubnetInterface

ATTRIBUTE Mod Vcs segmentSize

Access	Read and write
Description	This attribute specifies the segment size for accounting of national calls. Minimum allowed segment size is ***1***. If data segment is sent which is less than *segmentSize* it is still counted as one segment.
Mib	SubnetInterface
Values	1 2 4 8 16 32 64 128 256 512 1024 2048 4096
Default	128

ATTRIBUTE Mod Vcs unitsCounted

Access	Read and write
Description	This attribute specifies what is counted by frame services. If set to frames, frames are counted, else segments are counted.
Mib	SubnetInterface
Values	segments frames
Default	segments

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ATTRIBUTE Mod Vcs accountingFax (afax)

Access	Read and write
Description	Each value corresponds to an accounting facility code, of which there are currently 10 facility codes defined with codes H.00 to H.09, and corresponding to the above 10 facilities. Each of the above facilities may or may not be present and stored in the Vc for accounting purposes, depending on the nature of the call. For example, only those Vcs where a NUI (Network User Identifier) is used for charging or identification purposes will have a NUI stored in the Vc.
Mib	SubnetInterface
Set of	originalCalledAddressFax
Default	(originalCalledAddressFax)

ATTRIBUTE Mod Vcs generationMode (genMod)

Access	Read and write
Description	This attribute specifies part of the rules by which the network generates accounting records. If set to ***bothEnds***, then both ends of the *Vc* generate accounting records. If set to ***singleEnd***, then the charged end of the *Vc* generates accounting records. In single end generation mode, if the call does not clear gracefully, both ends of the *Vc* will generate accounting record.
Mib	SubnetInterface
Values	bothEnds singleEnd
Default	singleEnd

GROUP Mod Vcs WindowOptions (WinOpt)

Properties	Provisioned
Description	*WindowOptions group* defines attributes used when establishing *Vc*. These attributes are common to each *Vc* unless overridden by other options in a call. For example X.25 options used in call request.
Mib	SubnetInterface

ATTRIBUTE Mod Vcs windowSize (wins)

Access	Read and write
Description	This is the *windowSize* corresponding to the given packet size and throughput class. All *Vcs* using the windowSize matrix support large *Vc* windows on both ends of the *Vc*, and support the signaling of the chosen *Vc* window size from the destination (called) end to the source (calling)

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	end. This is the only matrix supported. The *windowSize* should be configured in the same way network wide, though it can be upgraded on a module by module basis. *Vcs* using the *windowSize* matrix will run properly if the matrices on different nodes differ since the *Vc* window is selected by the destination (called) side of the *Vc*.
Mib	SubnetInterface
Array of	Decimal (1..63)
Row	packetSize (pkt) [16 32 64 128 256 512 1024 2048 4096 8192 32768 65535]
Column	throughputClass (tpt) [Decimal (0..15)]
Default	([12 * 16] 4)

GROUP Mod Vcs AddressingOptions (AddOpt)

Properties	Provisioned
Description	The *Vc AddressingOptions* group describes the addressing parameters. It is currently owned by the *Vc*. Most of the data contained in the *Vc AddressingOptions* group is identical network wide even though the group can be changed and upgraded on a module by module basis.
Mib	SubnetInterface

ATTRIBUTE Mod Vcs defaultNumberingPlan (npi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the numbering plan used which determines the address format: X.121-- the international numbering plan for public packet switched data networks or E.164-- the international numbering plan for ISDN and PSTN. The default numbering plan does not need to be consistent across all of the nodes in the network.

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Mib	SubnetInterface
Values	x121 e164
Default	x121

ATTRIBUTE Mod Vcs networkIdType (nit)

Access	Read only
Description	This attribute specifies whether the network uses a DNIC or INIC. It is used by X.75 Gateways to indicate whether in network the DNIC or INIC is used in various utilities. If it is DNIC it can be DNIC or DCC type. If it is INIC it can be 4 digits only.
Mib	SubnetInterface
Values	dnic inic
Default	dnic

ATTRIBUTE Mod Vcs x121Type (xtyp)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether DNIC mode or DCC mode is used in X.121 address of international calls. If DCC is specified, then the first 3 digits of each DNA must be the Network ID Code. If this attribute is changed all Dnas in the network must start with this code. Numbering plan is affected by the change.
Mib	SubnetInterface
Values	dnic dcc
Default	dnic

ATTRIBUTE Mod Vcs networkIdCode (nic)

Access	Read and write
Description	This attribute specifies the DNIC (Data Network ID Code) of the network or DCC code.
Mib	SubnetInterface
Values	BCD (3..4)
Default	No default

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ATTRIBUTE Mod Vcs x121IntlAddresses (xia)

Access	Read and write
Description	This attribute indicates if any DTE is allowed to signal international addresses.
Mib	SubnetInterface
Values	disallowed allowed
Default	allowed

ATTRIBUTE Mod Vcs x121IntlPrefixDigit (xipd)

Access	Read and write
Description	This attribute indicates the prefix digit to be used for X.121 international calls. When this digit is provided the call will have full international address.
Mib	SubnetInterface
Values	Decimal (0..9)
Default	9

ATTRIBUTE Mod Vcs x121MinAddressLength (xmial)

Access	Read and write
Description	This attribute indicates minimum length of x121 address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	1

ATTRIBUTE Mod Vcs x121MaxAddressLength (xmaal)

Access	Read and write
Description	This attribute indicates maximum length of x121 address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	15

ATTRIBUTE Mod Vcs x121ToE164EscapeSignificance (xtees)

Access	Read and write
Description	This attribute specifies whether an X.121 to E.164 escape digit has significance in selecting an X.32 (analog) or an ISDN switched path. If two values are significant (the value 0 or the value 9) then yes is set to this

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attribute. If the value of the originally entered escape digit is not significant in routing the call then value of no is assigned to this attribute.

Mib SubnetInterface

Values
no
yes

Default no

ATTRIBUTE Mod Vcs e164IntlFormatAllowed (eifa)

Access Read and write

Description

This attribute indicates whether or not to allow national format E.164 addresses. If this attribute is set to a value of Yes (=1) then national format E.164 addresses are not allowed and international format addresses only are allowed. If this attribute is set to a value of No (=0), then national format E.164 addresses are allowed.

If only international format E.164 addresses are allowed, then the 'e164NatlPrefixDigit' attribute is not required, nor is the 'e164IntlPrefixDigits' required.

Mib SubnetInterface

Values
disallowed
allowed

Default allowed

ATTRIBUTE Mod Vcs e164IntlPrefixDigits (eipd)

Access Read and write

Description

This attribute specifies the E.164 international prefix digits. If applicable, it is specified as 1 to 3 BCD digits.

The 3 BCD digits are stored with the length of the international prefix in the low order nibble, nibble [0] followed by the most significant digit of the international prefix in the next low order nibble, nibble [1], etc.

This attribute is not required if the corresponding attribute, 'e164IntlFormatOnly' is set to a value of Yes (=1).

Mib SubnetInterface

Values BCD (0..3)

Default 0

ATTRIBUTE Mod Vcs e164NatlPrefixDigit (enpd)

Access Read and write

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Description	This attribute contains the E.164 national prefix which may be added in front of E.164 local or national call. If e164IntlFormatOnly is set to 1, this attribute is not needed.
Mib	SubnetInterface
Values	Decimal (0..9)
Default	1

ATTRIBUTE Mod Vcs e164LocalAddressLength (elal)

Access	Read and write
Description	This attribute indicates the length of a local E.164 DNA on this module. This attribute is not required if the corresponding attribute, e164IntlFormatOnly is set to a value of yes. This attribute does not need to be consistent across all of the nodes in the network.
Mib	SubnetInterface
Values	Decimal (4..15)
Default	7

ATTRIBUTE Mod Vcs e164TeleCountryCode (etcc)

Access	Read and write
Description	This attribute specifies the E.164 Telephone Country Code (TCC) for the country in which the network resides. If applicable, it is specified as 1 to 3 BCD digits. The 3 BCD digits are stored with the length of the TCC in the low order nibble, nibble [0] followed by the most significant digit of the TCC in the next low order nibble, nibble [1], etc.
Mib	SubnetInterface
Values	BCD (1..4)
Default	1

ATTRIBUTE Mod Vcs e164NatlMinAddressLength (enmial)

Access	Read and write
Description	This attribute indicates minimum length of e164 national address.
Mib	SubnetInterface
Values	Decimal (1..16)

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Default	1

ATTRIBUTE Mod Vcs e164NatlMaxAddressLength (enmaal)

Access	Read and write
Description	This attribute indicates maximum length of e164 national address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	15

ATTRIBUTE Mod Vcs e164IntlMinAddressLength (eimial)

Access	Read and write
Description	This attribute indicates minimum length of e164 international address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	1

ATTRIBUTE Mod Vcs e164IntlMaxAddressLength (eimaal)

Access	Read and write
Description	This attribute indicates maximum length of e164 international address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	15

ATTRIBUTE Mod Vcs e164LocalMinAddressLength (elmial)

Access	Read and write
Description	This attribute indicates minimum length of e164 local address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	1

ATTRIBUTE Mod Vcs e164LocalMaxAddressLength (elmaal)

Access	Read and write
Description	This attribute indicates maximum length of e164 local address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	15

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GROUP Mod Vcs InterfaceOptions (IntOpt)

Properties	Provisioned
Description	The *Vc InterfaceOptions* group defines *Vc* system parameters common in the network. It is owned by the *Vc* and is considered to be a module wide component on the switch. The data contained in the *Vc InterfaceOptions* group must be identical network wide even though this group can be changed and upgraded on a module by module basis.
Mib	SubnetInterface

ATTRIBUTE Mod Vcs highPriorityPacketSizes (hpps)

Access	Read only
Description	This attribute indicates which packet sizes are supported for high priority calls within the network.
Mib	SubnetInterface
Set of	16 32 64 128 256 512 1024 2048 4096
Default	(16, 32, 64, 128, 256, 512, 1024, 2048, 4096)

ATTRIBUTE Mod Vcs maxSubnetPacketSize (msps)

Access	Read and write
Description	This attribute specifies the maximum subnet packet size used for the connections originating or terminating on this module. All modules in the same network should have the same *maxSubnetPacketSize*. If this value is not identical throughout the network, the following points need to be considered: a) When a Nortel Networks Multiservice Switch and a DPN switch are connected in the same network, the *maxSubnetPacketSize* on a DPN switch can be at most 2048 and the DPN part of the network must be configured with hardware that supports this size: - Dedicated PE386 Network link/Trunk

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- Minimum measured link speed of 256kbit/s

This hardware has to be present on every potential data path between connecting end points!

b) The calling end of the connection signals the *maxSubnetPacketSize* value to the called end. The called end then compares this value to its own provisioned value and selects the smaller value. Note that this smaller value is not signaled back to the calling end. The calling and called ends can therefore have different *maxSubnetPacketSize* values.

Mib: SubnetInterface

Values:
16
32
64
128
256
512
1024
2048
4096

Default: 512

ATTRIBUTE Mod Vcs callSetupTimer (cst)

Access: Read and write

Description

This attribute specifies the *Vc callSetupTimer* in units of 1 second ticks. This timer specifies how long the *Vc* will wait, after sending a subnet Call Request packet into the network, for a response from the remote end of the *Vc* (in the form of a subnet Raccept packet). If, after sending a subnet Call packet into the network, a response is not received within this time period, the *Vc* will time out, clearing the call in the assumption that the remote end is unreachable. This timer must be long enough to take into account the time required for routing the subnet Call Request through the Source Call Routing and the Destination Call Routing systems in order to be delivered to the final destination.

Mib: SubnetInterface

Values: Decimal (5..100)

Default: 5

ATTRIBUTE Mod Vcs callRetryTimer (crt)

Access: Read and write

Description: This attribute specifies, for *Vc* implementing Direct Calls with the auto-call retry feature (including PVCs), the *Vc callRetryTimer* in units of 1 second

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ticks. This timer specifies how long the *Vc* will wait between unsuccessful call attempts.

Mib	SubnetInterface
Values	Decimal (30..300)
Default	60

ATTRIBUTE Mod Vcs delaySubnetAcks (dsa)

Access	Read and write
Description	This attribute specifies delay acknowledgment timer mechanism. If this attribute is set to ***no***, then the *Vc* will automatically return acknowledgment packets without delay. If this attribute is set to ***yes***, then the *Vc* will wait for one second in an attempt to piggyback the acknowledgment packet on another credit or data packet. If the *Vc* cannot piggyback the acknowledgment packet within this time, then the packet is returned without piggybacking.
Mib	SubnetInterface
Values	no yes
Default	no

COMPONENT Mod FrameRelaySystem (Frs)

Scope	Application
Description	*Mod FrameRelaySystem* The *Frs* component defines the overall module wide data that is applicable to the Frame Relay system.
Mib	ModCommon
Subcomponents	COMPONENT Mod Frs AtmNetworking (AtmNet) COMPONENT Mod Frs DprsNetworking (DprsNet) COMPONENT Mod Frs IpCosToFrQos (IpCosToFrQos)
Common Verbs	Help List Display Unlock

COMPONENT Mod Frs AtmNetworking (AtmNet)

Groups	GROUP Mod Frs AtmNet Provisioned (Prov)
Scope	Application
Description	*Mod Frs AtmNetworking* *AtmNetworking* is used to define a number of general characteristics for all Frame Relay to ATM interworking on module. All the modules in the

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network should have identical *AtmNetworking* attributes. If these attributes are not consistent across the network, then the service may be degraded.

Mib	ModAtmQos
Subcomponents	COMPONENT Mod Frs AtmNet TransferPriorityMapping (Tpm)
Common Verbs	Help List Display

GROUP Mod Frs AtmNet Provisioned (Prov)

Properties	Provisioned
Description	This group contains information related to the Frame Relay to ATM interworking.
Mib	ModAtmQos

ATTRIBUTE Mod Frs AtmNet retryTimerPeriod (rtp)

Access	Read and write
Description	This attribute specifies the module wide retry timer interval for failed SPVC calls using Frame Relay to ATM Networking. Changes to this attribute will take effect on subsequent call setups.
Mib	ModAtmQos
Values	Decimal (30..300)
Units	seconds
Default	60

COMPONENT Mod Frs AtmNet TransferPriorityMapping (Tpm)

Instance	Decimal (0..15)
Groups	GROUP Mod Frs AtmNet Tpm Provisioned (Prov)
Scope	Application
Description	*Mod Frs AtmNet TransferPriorityMapping/n* This component specifies call setup parameters for Frame Relay to ATM interworking using transfer priority *n*. The changed parameters will take effect on new calls.

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Some attributes can be overridden on per interface basis by *FrAtm Ca Tpm* component.

Mib ModAtmQos

Common Verbs
Help
List
Display
Add
Unlock

GROUP Mod Frs AtmNet Tpm Provisioned (Prov)

Properties Provisioned

Description This group specifies the mapping from Frame Relay parameters to ATM parameters for a Frame Relay using the defined transfer priority.

Mib ModAtmQos

ATTRIBUTE Mod Frs AtmNet Tpm emissionPriority (ep)

Access Read and write

Description This attribute specifies the egress emission priority at the FR to ATM interface. A value of 3 specifies the highest priority, whereas a value of 0 specifies the lowest priority.

Mib ModAtmQos

Values Decimal (0..3)

Default 0

ATTRIBUTE Mod Frs AtmNet Tpm atmServiceCategory (sc)

Access Read and write

Description This attribute specifies the ATM class of service value to be used on a transport connection.

Mib ModAtmQos

Values
ubr
cbr
rtVbr
nrtVbr

Default nrtVbr

ATTRIBUTE Mod Frs AtmNet Tpm avgFrameSize (afs)

Access Read and write

Description This attribute specifies the average frame size that is used in the traffic parameter conversion policy calculations for this transfer priority to determine the overhead factor for FR to ATM interworking. The overhead

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factor affects the granularity of the bandwidth requirements. The values should be identical across the network. Otherwise, there may result in bandwidth conversion inconsistencies.

Mib ModAtmQos

Values Decimal (1..8187)

Units bytes

Default 128

ATTRIBUTE Mod Frs AtmNet Tpm trafficParmConvPolicy (tpcp)

Access Read and write

Description This attribute specifies the traffic parameter conversion policy to use for this transfer priority to specify the equivalent bandwidth rate at the FrAtm interface.

Policy 3 characterizes the traffic in the following way:
- ATM traffic descriptor type 6 is selected
- PCR0+1 is based on the AR
- SCR0+1 is based on the CIR and EIR
- MBS0+1 is based on Bc,Be,CIR,EIR and AR
- Takes into account that the instantaneous rate of the frame relay stream can burst above CIR and up to the AR.

Policy 4 characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer.
- PCR0+1 is based on the AR
- SCR0 is based on the CIR
- MBS0 is based on Bc,CIR and AR
- There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR.

Policy 5 characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected . Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer
- PCR0+1 is based on CIR and EIR
- SCR0 is based on the CIR
- MBS0 is based on the Bc,CIR and AR
- The maximum PCR is no longer based on AR but based on the CIR and EIR.

Policy 6 characterizes the traffic in the following way:
- ATM traffic descriptor type 3 is selected
- PCR0+1 is based only on CIR.

Mib ModAtmQos

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Values	3 4 5 6
Default	6

ATTRIBUTE Mod Frs AtmNet Tpm assignedBandwidthPool (asgBwPool)

Access	Read and write
Description	This attribute specifies the bandwidth pool which is used to support this transfer priority. The bandwidth pool is defined in the *frAtm Ca* component.
Mib	ModAtmQos
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	0

COMPONENT Mod Frs DprsNetworking (DprsNet)

Scope	Application
Description	*Mod Frs DprsNetworking* *DprsNetworking* is used to define a number of general characteristics for all Frame Relay connections using DPRS networking. All the modules in the network should have identical *DprsNetworking* attributes. If these attributes are not consistent across the network, then the service may be degraded.
Mib	ModDprsQos
Subcomponents	COMPONENT Mod Frs DprsNet TransferPriorityMappingDprsNet (Tpm)
Common Verbs	Help List Display

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COMPONENT Mod Frs DprsNet TransferPriorityMappingDprsNet (Tpm)

Instance	Decimal (0..15)
Groups	GROUP Mod Frs DprsNet Tpm Provisioned (Prov)
Scope	Application
Description	*Mod Frs DprsNet TransferPriorityMappingDprsNet/n* This component represents default transfer priority mappings for Frame Relay connections using DPRS networking.
Mib	ModDprsQos
Common Verbs	Help List Display Add

GROUP Mod Frs DprsNet Tpm Provisioned (Prov)

Properties	Provisioned
Description	This group specifies the mapping from the defined transfer priority to the egress emission priority and routing class of service. The mapping of transfer priority to egress emission priority and routing class of service may be modified by the user. Any changes to transfer priority mappings take effect on new calls. Existing connections are not affected by changes to transfer priority mappings unless the service is reset by locking and unlocking the connection or resetting the card where the service resides.
Mib	ModDprsQos

ATTRIBUTE Mod Frs DprsNet Tpm emissionPriority (ep)

Access	Read and write
Description	This attribute specifies the egress emission priority at the Frame Relay interface. A value of ***3*** specifies the highest priority, whereas a value of ***0*** specifies the lowest priority.
Mib	ModDprsQos
Values	Decimal (0..3)
Default	0

ATTRIBUTE Mod Frs DprsNet Tpm routingClassOfService (rcos)

Access	Read and write
Description	This attribute specifies the routing class of service value to be used on a transport connection. A value of ***multimedia*** specifies the highest class of service and a value of ***throughput*** specifies the lowest class of service.
Mib	ModDprsQos

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Values	throughput delay multimedia
Default	throughput

ATTRIBUTE Mod Frs DprsNet Tpm assignedIngressBandwidthPool (asgInBwPool)

Access	Read and write
Description	This attribute specifies the ingress bandwidth pool which is used to support this transfer priority at the *FrUni* and *FrNni* interface. For *FrUni* and *FrNni*, this pool is defined by provisioning attributes *ingressCirBandwidthPool* and *ingressEirBandwidthPool* under the *FrUni Ca* and *FrNni Ca* component respectively. The value of this attribute can be overridden at the interface level by provisioning attribute *assignedIngressBandwidthPool* under the *FrUni Ca Tpm/n* and *FrNni Ca Tpm/n* component respectively.
Mib	ModDprsQos
Values	Decimal (0..15)
Default	0

ATTRIBUTE Mod Frs DprsNet Tpm assignedEgressBandwidthPool (asgEgBwPool)

Access	Read and write
Description	This attribute specifies the egress bandwidth pool which is used to support this transfer priority at the *FrUni* and *FrNni* interface. For *FrUni* and *FrNni*, this pool is defined by provisioning attributes *egressCirBandwidthPool* and *egressEirBandwidthPool* under the *FrUni Ca* and *FrNni Ca* component respectively. The value of this attribute can be overridden at the interface level by provisioning attribute *assignedEgressBandwidthPool* under the *FrUni Ca Tpm/n* and *FrNni Ca Tpm/n* component respectively.
Mib	ModDprsQos
Values	Decimal (0..15)
Default	0

COMPONENT Mod Frs IpCosToFrQos (IpCosToFrQos)

Scope	Application
Description	*Mod Frs IpCosToFrQos* This component is used to define a number of general characteristics for all Frame Relay connections using Frame Relay IP Traffic management. All the modules in the network should have identical *IpCosToFrQos*

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attributes. If these attributes are not consistent across the network, then the service may be degraded.

Mib	ModIpCosToFrQos
Subcomponents	COMPONENT Mod Frs IpCosToFrQos TypeOfServiceMapping (Tosm)
Common Verbs	Help List Display

COMPONENT Mod Frs IpCosToFrQos TypeOfServiceMapping (Tosm)

Instance	Decimal (0..255)
Groups	GROUP Mod Frs IpCosToFrQos Tosm Provisioned (Prov)
Scope	Application
Description	*Mod Frs IpCosToFrQos TypeOfServiceMapping/n* This component represents the type of service mappings for Frame Relay connections using Frame Relay IP Traffic Management. The instance corresponds to a particular IP TOS value. All 256 possible instances are always present. Instances of this component cannot be deleted.
Mib	ModIpCosToFrQos
Common Verbs	Help List Display Add

GROUP Mod Frs IpCosToFrQos Tosm Provisioned (Prov)

Properties	Provisioned
Description	This group specifies the mapping from the IP type of service value to the egress emission priority and discard priority. Any changes to TOS mappings will immediately take effect on new calls.
Mib	ModIpCosToFrQos

ATTRIBUTE Mod Frs IpCosToFrQos Tosm emissionPriority (ep)

Access	Read and write
Description	This attribute specifies the egress emission priority at the Frame Relay interface. A value of ***3*** specifies the highest priority, whereas a value of ***0*** specifies the lowest priority. Changes to this attribute effect only new calls.
Mib	ModIpCosToFrQos

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Values	Decimal (0..3)
Default	0

ATTRIBUTE Mod Frs IpCosToFrQos Tosm discardPriority (dp)

Access	Read and write
Description	This attribute specifies the egress discard priority at the Frame Relay interface. A value of ***normal*** specifies the lowest priority (more readily discarded), whereas a value of ***high*** specifies the highest priority (less readily discarded). Changes to this attribute effect only new calls.
Mib	ModIpCosToFrQos
Values	normal high
Default	normal

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Mod

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Document date: March 2006
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Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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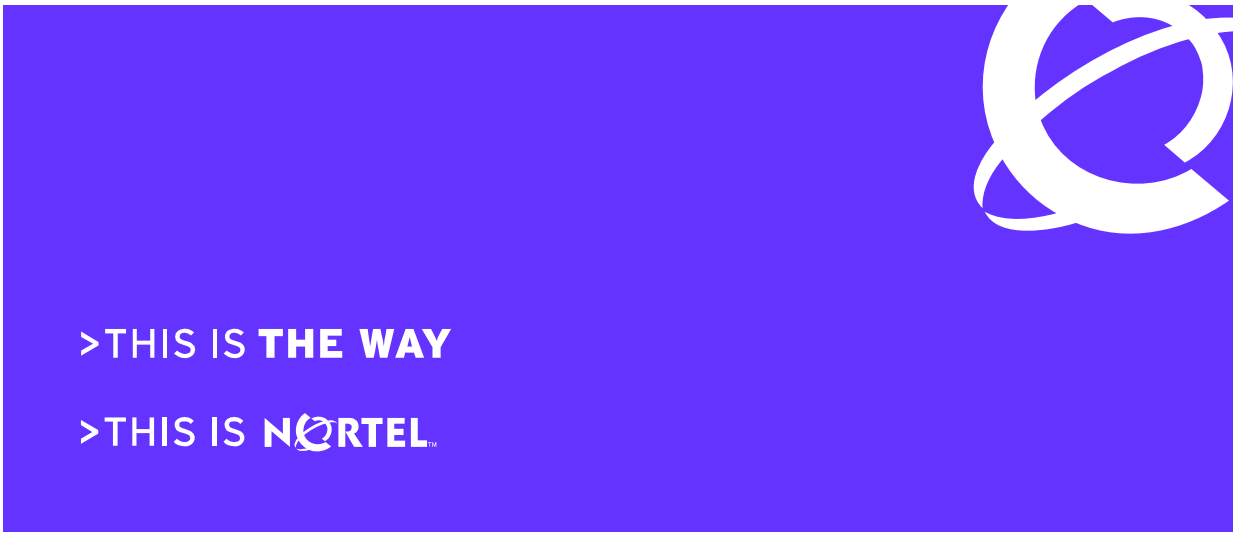

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Mpanl

NN10600-060

Document status: Standard
Document issue: 7.2S1
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Type: NTP
Language type: U.S. English

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COMPONENT MpaNetworkLink (Mpanl)

Instance	Decimal (1..65535)
Groups	GROUP Mpanl CustomerIdentifierData (CidData) GROUP Mpanl Provisioned (Prov) GROUP Mpanl EmissionPriorityQs GROUP Mpanl OsiState (State) GROUP Mpanl Statistics (Stats) GROUP Mpanl TrafficStatistics (TrafficStats) GROUP Mpanl IfEntryProv (IfEntry) GROUP Mpanl OperationalStatus (OperStatus) GROUP Mpanl Operational (Oper)
Scope	Network
Description	*MpaNetworkLink/<n>* This component defines an instance of the MPA Network Link (MPANL)

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service. The component instance value n is a unique positive integer within a module.

Mib	MpaNetworkLink
Subcomponents	COMPONENT Mpanl DataNetworkAddress (Dna) COMPONENT Mpanl Signaling (Sig) COMPONENT Mpanl LocalManagementInterface (Lmi) COMPONENT Mpanl VoiceOverFrameRelay (VoFr) COMPONENT Mpanl Voice
Opt. Subcomp.	COMPONENT Mpanl Framer COMPONENT Mpanl FrMuxSetup COMPONENT Mpanl Isdn
Dyn. Subcomp.	COMPONENT Mpanl PrefixDataNetworkAddress (PrefixDna) COMPONENT Mpanl DataLinkConnectionIdentifier (Dlci) COMPONENT Mpanl SignalingMpanl (SigMpanl)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Mpanl CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for the MPANL component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl customerIdentifier (cid)

Access	Read only
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to

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as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib	MpaNetworkLink
Values	Decimal (0; 1..8191)
Default	0

GROUP Mpanl Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes of the MPANL service.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl commentText

Access	Read and write
Description	This attribute specifies the name the customer wishes to associate with this MPANL interface.
Mib	MpaNetworkLink
Values	String (0..40, ASCII)
Default	No default

GROUP Mpanl EmissionPriorityQs

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the number of Frame Relay egress emission priority queues to be used on that Frame Relay Interface
Mib	MpaNetworkLink

ATTRIBUTE Mpanl numberOfEmissionQs

Access	Read only
Criticality	Process
Description	This attribute specifies the number of egress emission priority queues that will be used for that Frame Relay interface. The possible values of this attribute are 2 or 4: For V.35, V.11, HSSI, E1, DS1, E3, DS3 or 8pDS1 the possible values are: 2 (in which case they are hardware queues), or 4 (in which case they are software queues). For DS1C, E1C or DS3C the possible values are 2, 4 (in all cases they are software queues).

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Mib	MpaNetworkLink
Values	Decimal (2; 4)
Default	4

GROUP Mpanl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	MpaNetworkLink
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mpanl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

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The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: MpaNetworkLink

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Mpanl usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: MpaNetworkLink

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Mpanl availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test

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procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	MpaNetworkLink
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Mpanl proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	MpaNetworkLink
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Mpanl controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	MpaNetworkLink
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Mpanl alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	MpaNetworkLink
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Mpanl standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	MpaNetworkLink
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Mpanl unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	MpaNetworkLink
Values	false true
Default	false

GROUP Mpanl Statistics (Stats)

Properties	Operational
Description	FrUni/n Statistics This group contains the statistics about the operational behavior of the service at the interface level.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl lastUnknownDlci (ludlc)

Access	Read only
Description	This attribute identifies the most recent DLCI which user frames were received on for which a DLCI has not been provisioned on the port.
Mib	MpaNetworkLink
Values	Decimal (0..1023)
Default	0

ATTRIBUTE Mpanl unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute contains a count of the number of frames received from the

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	interface with an unknown DLCI (DLCI which is not provisioned). When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

GROUP Mpanl TrafficStatistics (TrafficStats)

Properties	Operational
Description	This operational group provides the traffic statistics of the service at the interface level. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl frmToIf

Access	Read only
Description	This attribute counts frames transmitted to the interface. This count may differ from its framer counterpart because Voice over Frame Relay function may fragment and pack the Frame Relay frames before transmission. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl octetToIf

Access	Read only
Description	This attribute counts octets transmitted to the interface. This count may differ from its framer counterpart because Voice over Frame Relay function may fragment and pack the Frame Relay frames before transmission. When the maximum is reached the count wraps to zero.

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Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl frmFromIf

Access	Read only
Description	This attribute counts frames received from the interface. This count may differ from its framer counterpart because Voice over Frame Relay function may fragment and pack the Frame Relay frames before transmission. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl octetFromIf

Access	Read only
Description	This attribute counts octets received from the interface. This count may differ from its framer counterpart because Voice over Frame Relay function may fragment and pack the Frame Relay frames before transmission. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl frmToIfByQueue

Access	Read only
Description	This attribute counts the total number of frames transmitted to the interface per egress emission priority queue since the component has been activated. There is potentially a maximum of 4 emission priority queues. The number of available egress queues varies according to the value of the provisionable attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, while egress queue 3 has the highest priority.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

ATTRIBUTE Mpanl octetToIfByQueue

Access	Read only

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Description	This attribute counts the total number of octets transmitted from the service to the interface per emission priority queue since the component has been activated. There is potentially a maximum of 4 emission priority queues. The number of available egress queues varies according to the value of the provisionable attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, while egress queue 3 has the highest priority.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

GROUP Mpanl IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	MpaNetworkLink
Values	up down testing
Default	up

ATTRIBUTE Mpanl ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	MpaNetworkLink
Values	Decimal (1..65535)
Default	No default

GROUP Mpanl OperationalStatus (OperStatus)

Properties	Operational

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Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	MpaNetworkLink
Values	up down testing
Default	up

GROUP Mpanl Operational (Oper)

Properties	Operational
Description	This group contains miscellaneous operational attributes of the MPANL service.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the round trip delay of the MPANL interface. The round trip delay measurement is only made when this attribute is displayed. The measured value is rounded up to the next millisecond. This attribute has the value 0, if the delay measurement cannot be made.
Mib	MpaNetworkLink
Values	Decimal (0..10000)
Units	msec
Default	No default

COMPONENT Mpanl DataNetworkAddress (Dna)

Groups	GROUP Mpanl Dna OutgoingOptions GROUP Mpanl Dna CallOptions
Scope	Network
Description	*Mpanl/<n> DataNetworkAddress* This component contains the attributes necessary for creating a virtual

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circuit. These attributes indicate the default call setup capabilities for the interface.

Mib MpaNetworkLink

Common Verbs
Help
List
Display

GROUP Mpanl Dna OutgoingOptions

Properties Provisioned

Description *DnaOutOptionsProv* group defines call options of a *Dna* for calls which are made out of the interface represented by *Dna*. All these options are not used for calls arriving to the interface represented by *Dna*.

Mib MpaNetworkLink

ATTRIBUTE Mpanl Dna defaultTransferPriority (dtp)

Access Read and write

Description This attribute specifies the default transfer priority to network for all outgoing calls using this particular *Dna*.

The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n indicates the transfer priority index, contains a default setting for routing class of service (multimedia, delay or throughput) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.

The default *defaultTransferPriority* is ***0***.

Mib MpaNetworkLink

Values
0
1
2
3
4
5
6
7
8
9

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10
11
12
13
14
15

Default 0

GROUP Mpanl Dna CallOptions

Properties Provisioned

Description *DnaCallOptions* group defines additional options for calls not related directly to direction of a call.

Mib MpaNetworkLink

ATTRIBUTE Mpanl Dna accountClass (acl)

Access Read and write

Description This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator.
This attribute is returned by the local VC in the accounting record for all calls setup using this particular DNA.

Mib MpaNetworkLink

Values Decimal (0..255)

Default 0

ATTRIBUTE Mpanl Dna accountCollection (aco)

Access Read and write

Description This set attribute indicates that accounting records are to be collected by the network for the various reasons: billing, test, study, auditing. The last of the parameters, force, indicates that accounting records are to be collected irrespective of other collection reasons. The force option is available for X.75 Gateways only. If none of these reasons are set, then accounting will be suppressed.

To set a specific accounting collection reason, the reason is entered and the corresponding bit in the structure is set to a value of 1. To turn off a specific accounting collection reason, the reason is entered preceded with the '^' character, and the corresponding bit in the structure is set to a value of 0.

The bit placement for the accounting collection reasons is as follows:
Bit 0 - Bill
Bit 1 - Test

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Bit 2 - Study
Bit 3 - Audit
Bit 4 - Force

Mib: MpaNetworkLink

Set of:
bill
test
study
audit
force

Default: (bill)

ATTRIBUTE Mpanl Dna serviceExchange (sre)

Access: Read and write

Description: This attribute is an arbitrary number, Data Service Exchange, as entered by the network operator and reported in accounting record. It is converted into an internal 8-bit integer value for use in the accounting record as well as in various X.25 and X.75 Tariff utilities.

Mib: MpaNetworkLink

Values: Decimal (0..255)

Default: 0

ATTRIBUTE Mpanl Dna egressAccounting (ega)

Access: Read and write

Description:

This attribute specifies if Egress accounting is enabled by the MPANL service. Disabling of Egress accounting means that only segment counts are collected by VC and there are no frame relay counts in accounting records for the MPANL service. Enabling of Egress accounting means that the accounting records for MPANL contain frame relay specific counts.

Mib: MpaNetworkLink

Values:
yes
no

Default: no

COMPONENT Mpanl Framer

Groups:
GROUP Mpanl Framer Provisioned (Prov)
GROUP Mpanl Framer LinkOptions (Link)
GROUP Mpanl Framer OsiState (State)
GROUP Mpanl Framer Statistics (Stats)
GROUP Mpanl Framer LinkUtilization (Util)

COLLECTED STATS MpaNetworkLink Framer

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Scope	Network
Description	*Mpanl/<n> Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).
Mib	MpaNetworkLink
Common Verbs	Help List Display Add DELete

GROUP Mpanl Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	MpaNetworkLink

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Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Mpanl Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Framer dataInversion

Access	Read and write
Description	This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed. This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density. Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted. This attribute may only take its default value for non-MSA cards.
Mib	MpaNetworkLink
Values	off on
Default	off

ATTRIBUTE Mpanl Framer frameCrcType

Access	Read and write
Description	This attribute defines the type of CRC used. The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used. This attribute may take only its default value for non-MSA cards.
Mib	MpaNetworkLink

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Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE Mpanl Framer flagsBetweenFrames

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.
Mib	MpaNetworkLink
Values	Decimal (1..16)
Default	1

GROUP Mpanl Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	MpaNetworkLink

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mpanl Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MpaNetworkLink
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mpanl Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

GROUP Mpanl Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.

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Mib	MpaNetworkLink

ATTRIBUTE Mpanl Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer nonOctetErrors

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer overruns

Access	Read only

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Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer underruns

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer largeFrmErrors

Access	Read only
Description	This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer frmModeErrors

Access	Read only
Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer frmToIf

Access	Read only

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Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

GROUP Mpanl Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	MpaNetworkLink

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ATTRIBUTE Mpanl Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	MpaNetworkLink
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Mpanl Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	MpaNetworkLink
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS MpaNetworkLink Framer

Description	The statistics record generated by the MpaNetworkLink Framer component.

ATTRIBUTE Mpanl Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Mpanl Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

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ATTRIBUTE Mpanl Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Mpanl Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Mpanl Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Mpanl PrefixDataNetworkAddress (PrefixDna)

Instance	numberingPlanIndicator [x121 e164] dataNetworkAddress [BCD (1..15)]
Scope	Network
Description	*Mpanl/<n> PrefixDataNetworkAddress/<npi>,<dna>* This component identifies a prefixDNA provided by the MPA DTE via the MPANL protocol. It has no attributes because all of the relevant information is contained in the indices of this component. The first index is the numbering plan indicator (x121/e164) and the second index is the prefixDNA digits.
Mib	MpaNetworkLink
Common Verbs	Help List Display

COMPONENT Mpanl DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (17..1007)
Groups	GROUP Mpanl Dlci OsiState (State) GROUP Mpanl Dlci CallData (CalId) GROUP Mpanl Dlci ServiceParametersOp (SpOp) GROUP Mpanl Dlci Statistics (Stats) GROUP Mpanl Dlci IntervalData (Int) GROUP Mpanl Dlci ABitStatus (Abit)
Scope	Network

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Description	*Mpanl/n DataLinkConnectionIdentifier/n* This component is responsible for the Frame Relay U-plane (User-plane) protocol for the specified instance. There can be many instances of *Dlci* for each *Mpanl*. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which a frame is associated. All frames carried within a particular physical channel and having the same DLCI value are associated with the same logical connection. A DLCI refers to a switched virtual circuit (SVC) which is created dynamically through signaling.
Mib	MpaNetworkLink
Dyn. Subcomp.	COMPONENT Mpanl Dlci LoopBack (Lb) COMPONENT Mpanl Dlci Vc COMPONENT Mpanl Dlci LogicalConnection (LCo) COMPONENT Mpanl Dlci JunctorVc (Jvc)
Common Verbs	Help List Display

VERB CLEAR Mpanl Dlci

Impact	Service
Description	*Clear Mpanl/n Dlci/n* This command is used to clear an MPANL connection.

GROUP Mpanl Dlci **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: MpaNetworkLink

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Mpanl Dlci operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: MpaNetworkLink

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Mpanl Dlci usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare

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operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Mpanl Dlci availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of

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disabled is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	MpaNetworkLink
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Mpanl Dlci proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is

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enabled.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — MpaNetworkLink

Set of
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Mpanl Dlci controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — MpaNetworkLink

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Mpanl Dlci alarmStatus (osiAlarm)

Access — Read only

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Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	MpaNetworkLink
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Mpanl Dlci standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

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The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — MpaNetworkLink

Values — hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE Mpanl Dlci unknownStatus (osiUnknw)

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — MpaNetworkLink

Values — false
true

Default — false

GROUP Mpanl Dlci CallData (CallId)

Properties — Operational

Description — This group of attributes describes the characteristics of the call such as call type and call state.

Mib — MpaNetworkLink

ATTRIBUTE Mpanl Dlci q933CallState (qstate)

Access — Read only

Description

This attribute indicates the Q.933 state of an SVC call. In the description that follows, “local” refers to the user who has initiated the SETUP request, and “remote” refers to the user to whom the local user wishes to connect.

State description:
In the ***null*** state, the network has neither received nor sent call setup requests for this DLCI.

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In the ***callInitiated*** state, the network has received a SETUP message from the local user.
In the ***outgoingCallProceeding*** state, the network has sent a CALL PROCEEDING message to the local user in response to the SETUP message.
In the ***callPresent*** state, the network has sent a SETUP message to the remote user.
In the ***incomingCallProceeding*** state, the network has received a CALL PROCEEDING message from the remote user in response to a SETUP message.
In the ***active*** state, either the network has sent a CONNECT message to the local user, or the network has received a CONNECT from the remote user.
In the ***disconnectRequest*** state, the network has received a DISCONNECT message from the local user.
In the ***disconnectIndication*** state, the network has sent a DISCONNECT to the local user.
In the ***releaseRequest*** state, the network has sent out a RELEASE message to the local user.
The ***notApplicable*** state indicates that this attribute is meaningless because the DLCI is a PVC.

Mib: MpaNetworkLink

Values:
null
callInitiated
outgoingCallProceeding
callPresent
incomingCallProceeding
active
disconnectRequest
disconnectIndication
releaseRequest
notApplicable

Default: No default

ATTRIBUTE Mpanl Dlci q933CallReference (callref)

Access: Read only

Description:
This attribute indicates the Q.933 call reference number associated with this DLCI.

Mib: MpaNetworkLink

Values: Decimal (0..32767)

Default: No default

GROUP Mpanl Dlci ServiceParametersOp (SpOp)

Properties: Operational

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Description	This group contains the service parameters specific to this instance of *Dlci*.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci maximumFrameSize (n203)

Access	Read only
Description	This attribute specifies the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Frame Relay Vendor Forum Specification.
Mib	MpaNetworkLink
Values	Decimal (1..4096)
Units	octets
Default	No default

ATTRIBUTE Mpanl Dlci committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	MpaNetworkLink
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Mpanl Dlci excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	MpaNetworkLink

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Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Mpanl Dlci accounting (ac)

Access	Read only
Description	This attribute indicates whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be occur, the *accountingOn* attribute must be ***on*** and at least one of the *accountCollection* options in the *DataNetworkAddress* component must be selected.
Mib	MpaNetworkLink
Values	off on
Default	No default

ATTRIBUTE Mpanl Dlci emissionPriorityToIf (epToIf)

Access	Read only
Description	This attribute indicates the emission priority of frames sent to the interface. A larger value denotes a higher priority.
Mib	MpaNetworkLink
Values	Decimal (0; 1; 2; 3)
Default	No default

ATTRIBUTE Mpanl Dlci transferPriorityToNetwork (tpToNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred to the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay*** or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered

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by a user if required.

Mib	MpaNetworkLink
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Mpanl Dlci transferPriorityFromNetwork (tpFromNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred from the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay*** or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.
Mib	MpaNetworkLink
Values	Decimal (0..15)
Default	No default

GROUP Mpanl Dlci Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the MPANL Data Link Connection Identifier.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci frmTolf (fti)

Access	Read only
Description	This attribute counts the frames sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci bciToSubnet (bcits)

Access	Read only
Description	This attribute counts the frames sent into the network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci deFrmToIf (deti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discCongestedToIf (discardcti)

Access	Read only
Description	This attribute counts the number of frame discards at the MPANL service due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discDeCongestedToIf (discarddecti)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the MPANL service, due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci frmFromIf (ffi)

Access	Read only
Description	This attribute counts the frames received from the interface. Frames that are discarded due to error or excess are not counted. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.

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Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci becnFrmFromIf (becnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci fciFromSubnet (fcifs)

Access	Read only
Description	This attribute counts the frames received from the network with the Forward Congestion Indication (FCI) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci bciFromSubnet (bcifsb)

Access	Read only
Description	This attribute counts the frames received from the network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the frames received from the interface with the

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Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci excessFrmFromIf (excess)

Access Read only

Description

This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci discExcessFromIf (discardefi)

Access Read only

Description

This attribute counts the frames which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci discFrameAbit (discfab)

Access Read only

Description

This attribute counts the number of frame discards at the MPANL Service, due to an inactive PVC status, in the direction toward the network. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci discCongestedFromIf (discardcfi)

Access Read only

Description

This attribute counts the number of frame discards at the MPANL service

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due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci discDeCongestedFromIf (discarddecfi)

Access Read only

Description

This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the MPANL service, due to local congestion, in the direction toward the network. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci errorShortFrmFromIf (shortfi)

Access Read only

Description This attribute counts the frames received with 0 octets in the information field. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci errorLongFrmFromIf (longfi)

Access Read only

Description This attribute counts the frames received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Frames whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci becnFrmSetByService (becnset)

Access Read only

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Description	This attribute counts the number of frames with BECN set by the MPANL service. It is incremented whenever the MPANL service sets BECN on a frame upon detecting local congestion. This count is incremented regardless of whether the frame already bears a set BECN bit since its use is to determine the place of congestion. When the count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci bytesToIf (bti)

Access	Read only
Description	This attribute counts the bytes sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci deBytesToIf (debti)

Access	Read only
Description	This attribute counts the bytes sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discCongestedToIfBytes (discardctib)

Access	Read only
Description	This attribute counts the number of byte discards at the MPANL service due to local congestion in the direction toward the link. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Mpanl Dlci discDeCongestedToIfBytes (discarddectib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the MPANL service due to local congestion in the direction toward the link. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the bytes received from the interface. Bytes that are discarded due to error or excess are not counted. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci excessBytesFromIf (excessb)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Mpanl Dlci discExcessFromIfBytes (discardebi)

Access	Read only
Description	This attribute counts the bytes which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discByteAbit (discbab)

Access	Read only
Description	This attribute counts the bytes which were discarded due to aBit turned off.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discCongestedFromIfBytes (discardcbib)

Access	Read only
Description	This attribute counts the number of byte discards at the MPANL service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discDeCongestedFromIfBytes (discarddecbib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the MPANL service due to local congestion in the direction toward the network. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Mpanl Dlci errorLongBytesFromIf (longbi)

Access	Read only
Description	This attribute counts the bytes received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Bytes whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

GROUP Mpanl Dlci IntervalData (Int)

Properties	Operational
Description	This group contains the operational statistics for the MPANL Data Link Connection Identifier interval data.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci startTime

Access	Read only
Description	This attribute indicates the start time of this interval period. If the VC spans 12 hour time or time of day change, *startTime* reflects new time as recorded at 12 hour periods or time of day changes. A new interval period is started each time an accounting record is generated.
Mib	MpaNetworkLink
Values	Time (DHMS)
Default	No default

ATTRIBUTE Mpanl Dlci totalIngressBytes (tib)

Access	Read only
Description	This attribute counts the total bytes received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

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ATTRIBUTE Mpanl Dlci totalEgressBytes

Access	Read only
Description	This attribute counts the total bytes sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci eirIngressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci eirEgressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci discardedBytes

Access	Read only
Description	This attribute counts the total bytes in invalid frames received from the interface and discarded at the DLCI since the start of the interval period. This count is a sum of octets in frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement. The start of the interval period is captured in the *startTime* attribute. The count is reset

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to zero when an accounting record is generated.

Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci totalIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is *segments*, this attribute counts the total number of segments in frames received from the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is *frames*, this attribute counts the total number of frames received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci totalEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is *segments*, this attribute counts the total number of segments in frames sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is *frames*, this attribute counts the total number of frames sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci eirIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is *segments*, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData*

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component is *frames*, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.

Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci eirEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is *segments*, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is *frames*, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discardedSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in invalid frames received from the interface and discarded at the DLCI. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of invalid frames received from the interface and discarded at the DLCI. Segments of frames are counted since the start of the interval period. The count is reset to zero when an accounting record is generated. The count is a sum of segments in frames or frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Mpanl Dlci callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci elapsedDifference

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since the call started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

GROUP Mpanl Dlci ABitStatus (Abit)

Properties	Operational
Description	This group contains the A-Bit status information for this Data Link Connection Identifier. A-Bit status information is only applicable for SPVCs. For SVCs, the values of attributes under this group are all **notApplicable**.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci aBitStatusToIf (abti)

Access	Read only
Description	This attribute is the most recent A-Bit status sent to the interface. The A-Bit status is originated from the SPVC end point at the remote end of the subnet and it is relayed to the interface by *Mpanl.* When an inactive setting is sent out, *Mpanl* will discard any data offered from the interface. When an active setting is sent out, *Mpanl* will try to relay all data offered from the interface to the other end of the SPVC.

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Mib	MpaNetworkLink
Values	inactive active notApplicable
Default	inactive

ATTRIBUTE Mpanl Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute provides the reason (if any) for an inactive status to be sent to the interface. This reason is not applicable for an active status. A-Bit status reason description: The A-Bit status reason is ***notApplicable*** when the A-Bit status is active. The A-Bit status reason is ***remoteUserSignaled*** if the SPVC end point originating the A-Bit status has detected that the virtual circuit is down at the remote network through the LMI protocol. The SPVC end point must be running network site LMI protocol for this A-Bit status reason to be sent. The A-Bit status reason is ***remoteLmiError*** if the LMI protocol is down at the SPVC end point originating this A-Bit status reason. The A-Bit status reason is ***remoteLinkDown*** if the physical interface is disabled at the SPVC end point originating this A-Bit status reason. The A-Bit reason is ***vcDown*** if no A-Bit status has been sent to the interface (i.e., no A-Bit status has been relayed).
Mib	MpaNetworkLink
Values	notApplicable remoteUserSignaled remoteLmiError remoteLinkDown vcDown
Default	vcDown

ATTRIBUTE Mpanl Dlci aBitStatusFromIf (abfi)

Access	Read only
Description	This attribute is the most recent A-Bit status received from the interface. It is an indication from the equipment attached to the interface on whether it is ready to accept data. *Mpanl* relays the A-Bit status from interface to the other end of the SPVC. When an inactive setting is received, *Mpanl* will discard any data offered from the subnet. When an active setting is received, *Mpanl* will try to relay all data offered from the subnet to the interface.
Mib	MpaNetworkLink

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Values	inactive active notApplicable
Default	inactive

ATTRIBUTE Mpanl Dlci aBitReasonFromIf (abrfi)

Access	Read only
Description	This attribute provides the reason (if any) for an inactive status to be sent to the subnet. This reason is not applicable for an active status. A-Bit status reason description: The A-Bit status reason is ***notApplicable*** when the A-Bit status is active. The A-Bit status reason is ***remoteUserSignaled*** if the SPVC end point originating the A-Bit status has detected that the DLCI is inactive at the remote network through the LMI protocol. The SPVC end point must be running network site LMI protocol for this A-Bit status reason to be sent. The A-Bit status reason is ***remoteLmiError*** if the LMI protocol is down at the SPVC end point originating this A-Bit status reason. The A-Bit status reason is ***remoteLinkDown*** if the physical interface is disabled at the SPVC end point originating this A-Bit status reason. The A-Bit reason is ***vcDown*** if no A-Bit status has been received from the interface (i.e., no A-Bit status has been relayed).
Mib	MpaNetworkLink
Values	notApplicable remoteUserSignaled remoteLmiError remoteLinkDown vcDown
Default	vcDown

ATTRIBUTE Mpanl Dlci loopbackState

Access	Read only
Description	This attribute has the value ***on*** when the DLCI is in loopback mode and ***off*** otherwise. This loopback command verbs *start* and *stop* are used to initiate and terminate the loopback mode for a DLCI. While *loopbackState* is ***on***, an active A-bit signal will be reliably propagated across the subnet to the remote DLCI.
Mib	MpaNetworkLink
Values	off on
Default	off

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COMPONENT Mpanl Dlci LoopBack (Lb)

Groups	GROUP Mpanl Dlci Lb Statistics (Stats)
Scope	Application
Description	*FrUni/n Dlci/n LoopBackFrNni/n Dlci/n LoopBack*This component is the data loopback tool for the parent *DLCI*.
Mib	MpaNetworkLink
Common Verbs	Help List Display

VERB START Mpanl Dlci Lb

Impact	Service
Description	*start FrUni/n Dlci/n LoopBack* *start FrNni/n Dlci/n LoopBack*This command resets the *LoopbackStatistics* and initiates the loopback mode. The *loopbackState* for this *DLCI* is set to ***on*** for the duration of the loopback mode. When a *DLCI* is in loopback mode, frames coming from the link are returned to the link, incrementing the local loopback statistics. Also, frames coming from the VC are returned to the VC, incrementing the remote loopback statistics. The loopback mode is ended using the stop command.

VERB STOP Mpanl Dlci Lb

Impact	Service
Description	*stop FrUni/n Dlci/n LoopBack stop FrNni/n Dlci/n LoopBack* This command terminates the loopback mode and displays the loopback statistics.

GROUP Mpanl Dlci Lb Statistics (Stats)

Properties	Operational
Description	This group contains all the statistics for the data loopback tool.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Lb localTotalFrm (ltf)

Access	Read only
Description	This attribute records the number of frames looped back to the link since loopback was last started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localTotalBytes (ltb)

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Access	Read only
Description	This attribute records the number of bytes looped back to the link since loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localFecnFrm (lff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the link since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localBecnFrm (lbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the link since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localDeFrm (ldf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localDeBytes (ldb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.

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Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteTotalFrm (rtf)

Access	Read only
Description	This attribute records the number of frames looped back to the subnet since loopback was last started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteTotalBytes (rtb)

Access	Read only
Description	This attribute records the number of bytes looped back to the subnet since loopback was last started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteFecnFrm (rff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteBecnFrm (rbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Mpanl Dlci Lb remoteDeFrm (rdf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteDeBytes (rdb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

COMPONENT Mpanl Dlci Vc

Groups	GROUP Mpanl Dlci Vc CallData (Cad) GROUP Mpanl Dlci Vc IntervalData (Intd) GROUP Mpanl Dlci Vc FrameRelayData (Frd)
Scope	Network
Description	*Mpanl/<n> Dlci/<n> Vc* This component defines attributes collected by *Mpanl/n Dlci/n Vc.*
Mib	MpaNetworkLink
Common Verbs	Help List Display

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VERB Ping **Mpanl Dlci Vc**

Impact: Passive

Description: *Ping [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] Mpanl/<n> Dlci/<n> Vc*

Ping causes a query packet to be sent to the destination module where an MPANL Frame Relay DLCI VC terminates. This command can only be used on an MPANL Frame Relay VC type. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the *ping* query packet will be the same as that of the Frame Relay data except at the source and destination module. The *ping* packets originate from the CP rather than the MPANL Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the MPANL FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The *ping* command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the *roundTripDelay* option is specified, the command reports the time taken to reach the destination and back. For the *roundTripDelay* option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the *ping* packets are generated and bounced back by the CP rather than the MPANL Frame Relay DLCI's FP.

The *ping* command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the *sendPktSize* and *returnPktSize* options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the

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subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the *-rtd* option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the time-out response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the *-rtd* option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the time-out response.

GROUP Mpanl Dlci Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	MpaNetworkLink
Values	pvc svc spvc frf10spvc

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Default	No default

ATTRIBUTE Mpanl Dlci Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	MpaNetworkLink
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Mpanl Dlci Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	MpaNetworkLink
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Mpanl Dlci Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

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ATTRIBUTE Mpanl Dlci Vc **previousDiagnosticCode**

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci Vc **calledNpi**

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	MpaNetworkLink
Values	x121 e164
Default	No default

ATTRIBUTE Mpanl Dlci Vc **calledDna**

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	MpaNetworkLink
Values	BCD (1..15)
Default	No default

ATTRIBUTE Mpanl Dlci Vc **calledLcn**

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	MpaNetworkLink
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Mpanl Dlci Vc **callingNpi**

Access	Read only

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Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	MpaNetworkLink
Values	x121 e164
Default	No default

ATTRIBUTE Mpanl Dlci Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	MpaNetworkLink
Values	BCD (1..15)
Default	No default

ATTRIBUTE Mpanl Dlci Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	MpaNetworkLink
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Mpanl Dlci Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	MpaNetworkLink
Values	yes no
Default	No default

ATTRIBUTE Mpanl Dlci Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	MpaNetworkLink

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Values	yes no
Default	No default

ATTRIBUTE Mpanl Dlci Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	MpaNetworkLink
Values	high normal
Default	No default

ATTRIBUTE Mpanl Dlci Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	MpaNetworkLink
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Mpanl Dlci Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	MpaNetworkLink
Values	normal high
Default	No default

ATTRIBUTE Mpanl Dlci Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	MpaNetworkLink
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Mpanl Dlci Vc maxSubnetPktSize

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Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	MpaNetworkLink
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Mpanl Dlci Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	MpaNetworkLink
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Mpanl Dlci Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	MpaNetworkLink
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Mpanl Dlci Vc emissionPriorityToNetwork (epto)

Access	Read only
Description	This attribute displays the network internal emission priority to the network.
Mib	MpaNetworkLink
Values	normal high interrupting
Default	No default

ATTRIBUTE Mpanl Dlci Vc emissionPriorityFromNetwork (epfrom)

Access	Read only

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Description	This attribute displays the network internal emission priority from the network.
Mib	MpaNetworkLink
Values	normal high interrupting
Default	No default

ATTRIBUTE Mpanl Dlci Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.
Mib	MpaNetworkLink
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Mpanl Dlci Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	MpaNetworkLink
List of	The name of the component
Default	No default

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GROUP Mpanl Dlci Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	MpaNetworkLink
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Mpanl Dlci Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	MpaNetworkLink
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Mpanl Dlci Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.

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Mib	MpaNetworkLink
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Mpanl Dlci Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	MpaNetworkLink
Values	Time (DHMS)
Default	No default

ATTRIBUTE Mpanl Dlci Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

GROUP Mpanl Dlci Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*.

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	Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Vc frmCongestedToSubnet

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc cannotForwardToSubnet

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.

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Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc frmLossTimeouts

Access	Read only

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Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc ooSeqByteCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current

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	implementation also uses this statistics to set a maximum size for the out-of-sequenced queue.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	MpaNetworkLink
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Mpanl Dlci Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	MpaNetworkLink

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Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	MpaNetworkLink
Values	Decimal (0..50000)
Default	No default

COMPONENT Mpanl Dlci LogicalConnection (LCo)

Groups	GROUP Mpanl Dlci LCo PathData GROUP Mpanl Dlci LCo Statistics (Stats) GROUP Mpanl Dlci LCo CallData
Scope	Application
Description	*Mpanl/n Dlci/m LCo* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	MpaNetworkLink
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VERB RERoute Mpanl Dlci LCo

Impact	Service
Description	RERoute.Lc This command is used to request a *Logical Connection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the RERoute is not completely successful. The connection must not be attempting rerouting at present. If this command is attempted on a connection that is not up but is in state pathDownRetrying an immediate route request is sent.

GROUP Mpanl Dlci LCo **PathData**

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci LCo **state**

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates that the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to the route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	MpaNetworkLink
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE Mpanl Dlci LCo **end**

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	MpaNetworkLink
Values	calling called
Default	No default

ATTRIBUTE Mpanl Dlci LCo **costMetric (cost)**

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Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an *LCo* that is originated and terminated on the same module is 0.
Mib	MpaNetworkLink
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Mpanl Dlci LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an *LCo* that is originated and terminated on the same module is 0.
Mib	MpaNetworkLink
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Mpanl Dlci LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	MpaNetworkLink
Values	Decimal (0..200000)
Units	msec

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Default	No default

ATTRIBUTE Mpanl Dlci LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	MpaNetworkLink
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Mpanl Dlci LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	MpaNetworkLink
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	MpaNetworkLink
Values	Decimal (0..2048000)
Units	bit/s
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value

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Mib	MpaNetworkLink
Values	Decimal (0..2048000)
Units	bit/s
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.
Mib	MpaNetworkLink
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Mpanl Dlci LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

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Mib	MpaNetworkLink
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	MpaNetworkLink
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	MpaNetworkLink
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Mpanl Dlci LCo emissionPriority (epri)

Access	Read only

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Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	MpaNetworkLink
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Mpanl Dlci LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	MpaNetworkLink
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Mpanl Dlci LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of the connection. This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully reconnected. It is set to zero the first time the path is up. If a path fails anytime after connecting, this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See

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retryCount(rcount) - page 78. This attribute stops counting at its maximum value.

Mib — MpaNetworkLink

Values — Decimal (0..65535)

Default — No default

ATTRIBUTE Mpanl Dlci LCo reasonForNoRoute (rnr)

Access — Read only

Description — This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory.

Mib — MpaNetworkLink

Values —
none
destinationNameTooLong
destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default — none

ATTRIBUTE Mpanl Dlci LCo lastTearDownReason

Access — Read only

Description — This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may indicate why the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown. ***normalShutDown*** - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.

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trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PAs at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LCs). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing. Check remote provisioned DNA.
farEndBusy - The far end has been reached but it is busy. Check remote provisioned DNA and remote end provisioning.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
serviceTypeMismatch - The remote service type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority,* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active; this just indicates why the path changed.

Mib

MpaNetworkLink

Values

none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound

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	farEndNotFound wrongModuleReached farEndBusy callLoopedBack unknownReason farEndNotReady remoteNameMismatch serviceTypeMismatch reconnectFromFarEnd bumped accessCardFailure optimized overrideRemoteName
Default	none

ATTRIBUTE Mpanl Dlci LCo pathFailureAction

Access	Read only
Description	This attribute displays whether the application is set to tolerate a momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. All *pathTypes* respect this attribute. Also, on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.
Mib	MpaNetworkLink
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Mpanl Dlci LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during the route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *holdingPriority* is lower (numerically higher) than the connection's *setupPriority.* A connection may also always bump in order to obtain the best route.
Mib	MpaNetworkLink

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Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Mpanl Dlci LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	MpaNetworkLink
Values	disabled enabled
Default	No default

ATTRIBUTE Mpanl Dlci LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	MpaNetworkLink
Values	Time (DHMS)
Default	No default

ATTRIBUTE Mpanl Dlci LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	MpaNetworkLink
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Mpanl Dlci LCo Statistics (Stats)

Properties	Operational

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Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote *LCo* via the network. This attribute wraps to 0.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote *LCo* via the network. This attribute wraps to 0.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

GROUP Mpanl Dlci LCo CallData

Properties	Operational

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Description	This group contains all operational attributes for the path oriented LCo.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci LCo callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	MpaNetworkLink
Values	x121 e164
Default	x121

ATTRIBUTE Mpanl Dlci LCo callingDna

Access	Read only
Description	This attribute displays the Data Network Address (DNA) of the calling end.
Mib	MpaNetworkLink
Values	BCD (0..15)
Default	No default

ATTRIBUTE Mpanl Dlci LCo elapsedTimeTillNow

Access	Read only
Description	This attribute displays the total duration in tenths of miliseconds that a connection has been up for a call.
Mib	MpaNetworkLink
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Mpanl Dlci LCo callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	MpaNetworkLink
Values	Hex (H.0..H.ffffff)
Default	No default

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ATTRIBUTE Mpanl Dlci LCo **calledNpi**

Access	Read only
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the called end.
Mib	MpaNetworkLink
Values	x121 e164
Default	x121

ATTRIBUTE Mpanl Dlci LCo **calledDna**

Access	Read only
Description	This attribute indicates the Data Network Address (DNA) of the called (destination) DTE to which this call is sent. This address if defined at the receiving end will complete the logical connection.
Mib	MpaNetworkLink
Values	BCD (0..15)
Default	No default

COMPONENT Mpanl Dlci **JunctorVc (Jvc)**

Groups	GROUP Mpanl Dlci Jvc Operational (Oper) GROUP Mpanl Dlci Jvc Statisticsl (Stat)
Scope	Network
Description	*Mpanl/n Dlci/n JunctorVc* This component extends the GVC connectivity across MPANL. It allows applications in a Legacy Data Module (LDM) subnet to establish GVC connections with applications in the subnet.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl Dlci Jvc **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *Jvc* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Jvc **currentState**

Access	Read only

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Description	This attribute indicates the current state of the JVC process. The state can be one of: ***null***: waiting for an incoming call or a call request from MPANL, ***callRequest***: waiting for the call connected from MPANL, ***callIndication***: waiting for the call packet from MPANL, ***callBlockPresent***: waiting for the Raccept packet from the subnet, ***active***: relaying packets between the subnet and MPANL, ***discInitiated***: not used by the DCE JVC, ***discPktPresent***: not used by the DCE JVC, ***callDisconnected***: waiting for the termination request from MPANL, ***callTerminated***: waiting for the termination by MPANL.
Mib	MpaNetworkLink
Values	null callRequest callIndication callBlockPresent active discInitiated discPktPresent callDisconnected callTerminated
Default	No default

ATTRIBUTE Mpanl Dlci Jvc **previousState (ps)**

Access	Read only
Description	This attribute indicates the previous state of the JVC process. The state can be one of: ***null***: waiting for an incoming call or a call request from MPANL, ***callRequest***: waiting for the call connected from MPANL, ***callIndication***: waiting for the call packet from MPANL, ***callBlockPresent***: waiting for the Raccept packet from the subnet, ***active***: relaying packets between the subnet and MPANL, ***discInitiated***: not used by the DCE JVC, ***discPktPresent***: not used by the DCE JVC, ***callDisconnected***: waiting for the termination request from MPANL, ***callTerminated***: waiting for the termination by MPANL.
Mib	MpaNetworkLink
Values	null callRequest callIndication callBlockPresent active discInitiated discPktPresent callDisconnected callTerminated

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Default	No default

ATTRIBUTE Mpanl Dlci Jvc callingNpi (clgNpi)

Access	Read only
Description	This attribute contains the numbering plan indicator of the calling address. This attribute value is retrieved from the call packet.
Mib	MpaNetworkLink
Values	x121 e164
Default	No default

ATTRIBUTE Mpanl Dlci Jvc callingAddress (clgDna)

Access	Read only
Description	This attribute contains the calling *DataNetworkAddress* of the interface. It includes the DNIC (first 4 digits) for X.121, and the CC (Country Code) for the E.164 address of the calling end. The maximum length of this attribute is 15 digits. This attribute value is retrieved from the call packet.
Mib	MpaNetworkLink
Values	BCD (1..15)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc callingLcn (clgLcn)

Access	Read only
Description	This attribute contains the calling LCN (logical channel number) of the interface. This number is assigned to the call request at the calling end. This attribute value is retrieved from the call packet.
Mib	MpaNetworkLink
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc calledNpi (cldNpi)

Access	Read only
Description	This attribute contains the numbering plan indicator of the called address. This attribute value is retrieved from the call packet.
Mib	MpaNetworkLink
Values	x121 e164
Default	No default

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ATTRIBUTE Mpanl Dlci Jvc **calledAddress (cldDna)**

Access	Read only
Description	This attribute contains the called *DataNetworkAddress* of the interface. It includes the DNIC (first 4 digits) for X.121, and the CC (Country Code) for the E.164 address of the called end. The maximum length of this attribute is 15 digits. This attribute value is retrieved from the Raccept packet.
Mib	MpaNetworkLink
Values	BCD (1..15)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc **calledLcn (cldLcn)**

Access	Read only
Description	This attribute contains the called LCN (logical channel number) of the interface. This number is assigned to the call request at the called end. This attribute value is retrieved from the Raccept packet.
Mib	MpaNetworkLink
Values	Decimal (1..4095)
Default	No default

GROUP Mpanl Dlci Jvc **Statisticsl (Stat)**

Properties	Operational
Description	This group contains the statistics collected by the *Jvc* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Jvc **packetsFromSubnet (pfs)**

Access	Read only
Description	This attribute counts all packets including control packets received from the subnet. This number reflects also the packets sent to the MPANL process since the JVC does not drop or generate packets in this direction.The value of this attribute wraps to 0 when the maximum value is reached.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc **packetsToSubnet (pts)**

Access	Read only
Description	This attribute counts all packets including control packets sent into the subnet. This number includes Renew Call Timer Packets that are

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generated by the JVC. The value of this attribute wraps to 0 when the maximum value is reached.

Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc packetsDiscarded (pdis)

Access	Read only
Description	This attribute counts discarded packets that can not be forwarded into the subnet because of subnet congestion. This attribute is increased when packet forwarding fails to forward a packet into the subnet.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc protocolErrors (err)

Access	Read only
Description	This attribute counts the number of protocol errors detected by the JVC in both the MPANL and the subnet directions. A protocol error is counted in the following cases: - reception of a packet from MPANL while waiting for a Raccept packet from the subnet, - reception of a packet from the subnet following a call packet and before the callAccepted is received from MPANL, - reception of a packet from the subnet or from MPANL that is shorter than the subnet header. The value of this attribute wraps to 0 when the maximum value is reached.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Mpanl Signaling (Sig)

Groups	GROUP Mpanl Sig SystemParameters (SysParms) GROUP Mpanl Sig LapfSystemParameters (LapfSys) GROUP Mpanl Sig FrsSvcAcc (Svcacc) GROUP Mpanl Sig OsiState (State) GROUP Mpanl Sig Statistics (Stats) GROUP Mpanl Sig LapfStatus (LapfStatus) GROUP Mpanl Sig LapfStatistics (LapfStats)
Scope	Network

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Description	*Mpanl/<n> Signaling* This component defines the Q.933 and Q.922 (LAPF) parameters for Frame Relay switched virtual circuits at the *Mpanl* interface.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl Sig SystemParameters (SysParms)

Properties	Provisioned
Description	This group contains the provisionable Q.933 system parameters.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig callSetupTimer (t303)

Access	Read and write
Description	This attribute specifies the time the network will wait for a response to the SETUP message sent to the called user. Upon timer expiry, the SETUP message is retransmitted. The second expiry of this timer causes the call to be cleared. This value is specified in seconds.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE Mpanl Sig disconnectTimer (t305)

Access	Read and write
Description	This attribute specifies the time the network will wait for a response to the DISCONNECT message sent to the user. Upon timer expiry, the RELEASE message is sent. This value is specified in seconds.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	30

ATTRIBUTE Mpanl Sig releaseTimer (t308)

Access	Read and write

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Description	This attribute specifies the time the network will wait for a response to the RELEASE message sent to the user. Upon timer expiry, the RELEASE message is retransmitted. The second expiry of the timer causes the call to be released. This value is specified in seconds.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE Mpanl Sig callProceedingTimer (t310)

Access	Read and write
Description	This attribute specifies the time the network will wait for the CONNECT message from the called user after the network has received the optional CALL PROCEEDING message from the called user. Upon timer expiry, the call is cleared. This value is specified in seconds.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	10

ATTRIBUTE Mpanl Sig networkType (type)

Access	Read and write
Description	This attribute specifies whether this Frame Relay service is running on a public or a private network. This value is used solely in populating applicable information elements within those Q.933 messages that require a public or private network indication.
Mib	MpaNetworkLink
Values	private public
Default	private

ATTRIBUTE Mpanl Sig restartReqTimer (t316)

Access	Read and write
Description	This attribute specifies the time the network waits for the RESTART ACKNOWLEDGE message from the adjacent network after sending a first RESTART message. Upon timer expiry, another RESTART message is sent. After the second expiry, the interface is treated as idle.

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If the *restartReqTimer* attribute is set to the default value, then the interface is treated as idle when it receives an indication that the link is up and does not send a RESTART message.

Mib	MpaNetworkLink
Values	Decimal (0..255)
Units	seconds
Default	0

ATTRIBUTE Mpanl Sig restartRcvTimer (t317)

Access	Read and write
Description	This attribute specifies the time the local network waits for the processing of a RESTART message received by the interface. Upon expiry of this timer, an alarm will be displayed to report the problem. The timer value must be less than the *restartReqTimer* provisioned value at the other end.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	110

GROUP Mpanl Sig LapfSystemParameters (LapfSys)

Properties	Provisioned
Description	This group contains the provisionable attributes for the SVC data link layer. The data link layer is governed primarily through ITU specification Q.922, and operates over DLCI 0.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig windowSize (ws)

Access	Read and write
Description	This attribute specifies the window size. This is the maximum number of unacknowledged sequenced frames that may be outstanding from or to this interface at any one time.
Mib	MpaNetworkLink
Values	Decimal (1..127)
Default	7

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ATTRIBUTE Mpanl Sig retransmitLimit (rtl)

Access	Read and write
Description	This attribute specifies the number of times a frame can be retransmitted by the SVC data link layer before appropriate recovery action is taken.
Mib	MpaNetworkLink
Values	Decimal (0..20)
Default	3

ATTRIBUTE Mpanl Sig ackTimer (at)

Access	Read and write
Description	This attribute specifies the period in milliseconds that the network will wait for an acknowledgment to a sent frame. The value set for *ackTimer* must be less than the value set for *idleProbeTimer*.
Mib	MpaNetworkLink
Values	Decimal (1000..10000)
Units	msec
Default	1500

ATTRIBUTE Mpanl Sig ackDelayTimer (adt)

Access	Read and write
Description	This attribute specifies the maximum period in milliseconds that the network will wait before sending an acknowledgment for a received in-sequence I-frame. A value of 0 means there will be no delay in acknowledgment.
Mib	MpaNetworkLink
Values	Decimal (0..10000)
Units	msec
Default	0

ATTRIBUTE Mpanl Sig idleProbeTimer (ipt)

Access	Read and write
Description	This attribute specifies the time period in milliseconds the link will be permitted to remain idle (that is, no frames are exchanged on the data link). Upon expiry of this timer, the network's side link layer polls its peer for status. The value set for *idleProbeTimer* must be greater than the value set for *ackTimer*.

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Mib	MpaNetworkLink
Values	Decimal (1000..65535000)
Units	msec
Default	30000

GROUP Mpanl Sig FrsSvcAcc (Svcacc)

Properties	Provisioned
Description	This group contains the provisionable attribute to define the defaultAccounting attribute..
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig defaultAccounting (defAcc)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***defaultAccounting*** bit and at least one of the ***accountCollection*** bits in the ***FrsDataNetworkAddress*** component must be set to on.
Mib	MpaNetworkLink
Values	off on
Default	on

GROUP Mpanl Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — MpaNetworkLink

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Mpanl Sig operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — MpaNetworkLink

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Mpanl Sig usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

GROUP Mpanl Sig Statistics (Stats)

Properties	Operational
Description	This group contains the statistics related to the SVC signaling layer at the interface level.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig currentNumberOfSvcCalls (ncall)

Access	Read only
Description	This attribute shows the number of Frame Relay SVCs currently existing on this interface.
Mib	MpaNetworkLink
Values	Decimal (0..991)
Default	No default

ATTRIBUTE Mpanl Sig inCalls (incall)

Access	Read only
Description	This attribute indicates the current number of incoming SVCs on this interface (that is, the number of SVCs for which this interface represents the destination end of the call).
Mib	MpaNetworkLink
Values	Decimal (0..991)
Default	No default

ATTRIBUTE Mpanl Sig inCallsRefused (icr)

Access	Read only
Description	This attribute counts the number of incoming SVC call requests that are rejected by either this interface or by the called user. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Mpanl Sig outCalls (outcall)

Access	Read only
Description	This attribute shows the current number of outgoing SVCs on this interface (that is, the number of SVCs for which this interface represents the source end of the call).
Mib	MpaNetworkLink
Values	Decimal (0..991)
Default	No default

ATTRIBUTE Mpanl Sig outCallsFailed (ocf)

Access	Read only
Description	This attribute counts the number of outgoing SVC call requests that are rejected by either this interface, or by the network side of the destination end, or by the called user. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig protocolErrors (pe)

Access	Read only
Description	This attribute counts the number of times a Q.933 protocol error has occurred. Any one of the following events constitutes a protocol error: 1. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir*, *Bc* and *Be* are all zero; 2. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir* is zero but *Bc* is non-zero, or *Bc* is zero but *Cir* is non-zero; 3. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, the *minimum acceptable Cir* is greater than *Cir*; 4. At the destination end, any of the destination to source direction link layer core parameters has been increased in the CONNECT message from the called user; 5. At the destination end, the destination to source direction *Cir* in the CONNECT message is smaller than the corresponding *minimum acceptable Cir* signaled to the called user; 6. At the source end, any of the source to destination direction link layer core parameters in the CONNECT message from the

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	destination end has been increased; 7. At the source end, the source to destination direction *Cir*, after negotiation, is smaller than the corresponding *minimum acceptable Cir*; 8. The network has received a STATUS message from the user with an incompatible Q.933 state. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig qualityOfServiceNotAvailable (qosna)

Access	Read only
Description	This attribute counts the number of incoming and outgoing SVCs that are rejected because the quality of service requested cannot be met by the network. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig setupTimeout (setupt)

Access	Read only
Description	This attribute counts the number of times the T303 setup timer has expired. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig lastCauseInStatusMsgReceived (lcis)

Access	Read only
Description	This attribute shows the cause value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is **0** which means that no STATUS message has been received for an existing call.
Mib	MpaNetworkLink

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Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Sig lastStateInStatusMsgReceived (lsis)

Access	Read only
Description	This attribute shows the state value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is ***notApplicable***.
Mib	MpaNetworkLink
Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active disconnectRequest disconnectIndication releaseRequest notApplicable 2 4 5 7 8 13 14 15 16 17 18 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

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Default — No default

ATTRIBUTE Mpanl Sig lastDlciReceivedStatus (ldrs)

Access — Read only

Description

This attribute shows the value of the DLCI that has most recently received a STATUS message from the user.

The initial value of this attribute is **0**.

Mib — MpaNetworkLink

Values — Decimal (0; 17..1007)

Default — No default

ATTRIBUTE Mpanl Sig lastQ933StateReceivedStatus (lsrs)

Access — Read only

Description

This attribute shows the network Q.933 state of the DLCI that has most recently received a STATUS message from the user. The DLCI to which

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this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute.

The initial value of this attribute is ***notApplicable***.

Mib — MpaNetworkLink

Values
null
callInitiated
outgoingCallProceeding
callPresent
incomingCallProceeding
active
disconnectRequest
disconnectIndication
releaseRequest
notApplicable

Default — No default

ATTRIBUTE Mpanl Sig lastTimeMsgBlockCongested (ltmbc)

Access — Read only

Description — This attribute displays the most recent time that an SVC DLCI has failed to get a message block due to message block congestion. Exceptional behavior can occur due to this. The DLCI that has most recently encountered this is indicated by the *lastDlciWithMsgBlockCongestion* attribute. However, all SVC DLCIs may be affected.

The initial value of this attribute is **0000-00-00 00:00**.

Mib — MpaNetworkLink

Values — Time (DHM)

Default — No default

ATTRIBUTE Mpanl Sig lastDlciWithMsgBlockCongestion (ldmbc)

Access — Read only

Description — This attribute shows the value of the DLCI that has most recently failed to get a message block due to message block congestion.

The initial value of this attribute is **0**.

Mib — MpaNetworkLink

Values — Decimal (0; 16..1007)

Default — No default

GROUP Mpanl Sig LapfStatus (LapfStatus)

Properties — Operational

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Description	This group contains the Q.922 SVC data link layer status.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig currentState (currState)

Access	Read only
Description	This attribute shows the current state of the SVC data link layer interface.
Mib	MpaNetworkLink
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE Mpanl Sig lastStateChangeReason (lscr)

Access	Read only
Description	This attribute shows the reason for the most recent state change. ***notStarted*** - this is the default state after SVC data link has just been created. ***abmeEntered*** - SVC data link has entered Asynchronous Balanced Mode after SABME or UA has been received. ***abmeReset*** - the data link has been reset. ***dmReceived*** - DM response received. ***dmSent*** - DM sent. ***discReceived*** - DISC response received. ***discSent*** - DISC sent. ***frmrReceived*** - FRMR received. ***n200RetranTimeOut*** - *retransmitLimit* has been exceeded. ***other*** - unspecified state change reasons. The most likely reason for this is the transition from state **waitingAck** to state **informationTransfer**.
Mib	MpaNetworkLink
Values	notStarted abmeEntered abmeReset dmReceived dmSent discReceived discSent frmrReceived n200RetranTimeOut other
Default	No default

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ATTRIBUTE Mpanl Sig frmrReceive (frmrr)

Access	Read only
Description	This attribute shows the information field of the FRMR most recently received.
Mib	MpaNetworkLink
Values	String (0..8, Hex)
Default	No default

ATTRIBUTE Mpanl Sig currentQueueSize (queues)

Access	Read only
Description	This attribute shows the current number of frames in the SVC data link layer transmit queue.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

GROUP Mpanl Sig LapfStatistics (LapfStats)

Properties	Operational
Description	This group contains the statistics for the SVC data link layer.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig stateChange

Access	Read only
Description	This attribute counts the number of times the SVC data link layer interface has changed state. Frequent state changes may indicate a problem with the line quality. While the data link layer is in **informationTransfer** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from **informationTransfer** to **waitingAck** and back. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig remoteBusy

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was

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unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.

Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig receiveRejectFrame

Access	Read only
Description	This attribute counts the number of REJ frames received by the interface. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig ackTimeout

Access	Read only
Description	This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate a problem at the link or improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote sides. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig iFramesTransmitted

Access	Read only
Description	This attribute counts the number of SVC I-frames transmitted to the interface on DLCI 0. An I-frame may be counted more than once if there are retransmissions at the SVC data link layer. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig iFramesTxDiscarded

Access	Read only

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Description	This attribute counts the number of SVC I-frames that are bound for the link but have been discarded. Discard reasons may be one of the following: 1.the frame length is beyond allow limit. 2.the SVC data link layer is in **disconnected** state. 3. the transmit queue has been purged because the queue length has reached the *reset* threshold. 4.the transmit queue or the queue waiting for acknowledgment has been purged because the link cannot be re-established. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig iFramesReceived

Access	Read only
Description	This attribute counts the number of SVC I-frames received from the interface. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig iFramesRcvdDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames received but have been discarded. The discard reasons are: 1. incorrect frame size 2. frame is out of sequence 3. frame received while the network side of the SVC data link layer is not in the **informationTransfer** or **waitingAck** state. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Mpanl SignalingMpanl (SigMpanl)

Groups	GROUP Mpanl SigMpanl OsiState (State) GROUP Mpanl SigMpanl Profile

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GROUP Mpanl SigMpanl Statistics (Stats)
GROUP Mpanl SigMpanl LapfStatus (LapfStatus)
GROUP Mpanl SigMpanl LapfStatistics (LapfStats)

Scope: Network

Description: *Mpanl/<n> SignalingMpanl*

This component contains attributes relating to the MPANL signaling DLCI at the MPANL interface. This includes operational Q.922 (LAPF) information for this DLCI.

Mib: MpaNetworkLink

Common Verbs: Help, List, Display

GROUP Mpanl SigMpanl OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: MpaNetworkLink

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mpanl SigMpanl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MpaNetworkLink
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mpanl SigMpanl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

GROUP Mpanl SigMpanl Profile

Properties	Operational
Description	This group contains attributes which are populated by the information received from the MPA in the Profile Association command of the MPANL protocol.

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Mib	MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl dteCustomerId (dcid)

Access	Read only
Description	This attribute indicates the Customer ID of the MPA connected to this Mpanl interface.
Mib	MpaNetworkLink
Values	Decimal (0; 1..8191)
Default	No default

ATTRIBUTE Mpanl SigMpanl dteNodeId (dnid)

Access	Read only
Description	This attribute indicates the nodeId that uniquely identifies the MPA connected to this Mpanl interface.
Mib	MpaNetworkLink
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE Mpanl SigMpanl dteComponentName (dcn)

Access	Read only
Description	This attribute indicates the component name provided by the MPA connected to this MPANL interface.
Mib	MpaNetworkLink
Values	String (1..255, ASCII)
Default	No default

ATTRIBUTE Mpanl SigMpanl highestDlci (hd)

Access	Read only
Description	This gives the highest DLCI that the Mpanl interface will assign to an SVC. This value is populated by information provided in the DLCI Range Information Element of the MPANL Profile Association command received from the MPA.
Mib	MpaNetworkLink
Values	Decimal (0; 17..1007)
Default	No default

GROUP Mpanl SigMpanl Statistics (Stats)

Properties	Operational

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Description	This group contains the statistics related to the Mpanl signaling layer at the interface level.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl protocolErrors (pe)

Access	Read only
Description	This attribute counts the number of times an Mpanl protocol error has occurred. Any one of the following events constitutes a protocol error: 1. DNA association before profile association. 2. Mandatory IE absent in SAPcommands. 3. Invalid length of IE/sub-info fields in SAP command. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl sap0CommandsRx (sap0rx)

Access	Read only
Description	This attribute counts the number of SAP-0 commands received on the MPANL DLCI 16. This counter wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl sap0CommandsTx (sap0tx)

Access	Read only
Description	This attribute counts the number of SAP-0 commands sent on the MPANL DLCI 16. This counter wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl sapXCommandsRx (sapXrx)

Access	Read only
Description	This attribute counts the number of SAP-X commands received on the MPANL DLCI 16. This counter wraps to zero.

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Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl sapXCommandsTx (sapXtx)

Access	Read only
Description	This attribute counts the number of SAP-X commands sent on the MPANL DLCI 16. This counter wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

GROUP Mpanl SigMpanl LapfStatus (LapfStatus)

Properties	Operational
Description	This group contains the Q.922 SVC data link layer status.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl currentState (currState)

Access	Read only
Description	This attribute shows the current state of the SVC data link layer interface.
Mib	MpaNetworkLink
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE Mpanl SigMpanl lastStateChangeReason (lscr)

Access	Read only
Description	This attribute shows the reason for the most recent state change. ***notStarted*** - this is the default state after SVC data link has just been created. ***abmeEntered*** - SVC data link has entered Asynchronous Balanced Mode after SABME or UA has been received. ***abmeReset*** - the data link has been reset. ***dmReceived*** - DM response received. ***dmSent*** - DM sent. ***discReceived*** - DISC response received. ***discSent*** - DISC sent.

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frmrReceived - FRMR received.
n200RetranTimeOut - *retransmitLimit* has been exceeded.
other - unspecified state change reasons. The most likely reason for this is the transition from state **waitingAck** to state **informationTransfer**.

Mib	MpaNetworkLink
Values	notStarted abmeEntered abmeReset dmReceived dmSent discReceived discSent frmrReceived n200RetranTimeOut other
Default	No default

ATTRIBUTE Mpanl SigMpanl **frmrReceive (frmrr)**

Access	Read only
Description	This attribute shows the information field of the FRMR most recently received.
Mib	MpaNetworkLink
Values	String (0..8, Hex)
Default	No default

ATTRIBUTE Mpanl SigMpanl **currentQueueSize (queues)**

Access	Read only
Description	This attribute shows the current number of frames in the SVC data link layer transmit queue.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

GROUP Mpanl SigMpanl **LapfStatistics (LapfStats)**

Properties	Operational
Description	This group contains the statistics for the SVC data link layer.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl **stateChange**

Access	Read only

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Description

This attribute counts the number of times the SVC data link layer interface has changed state. Frequent state changes may indicate a problem with the line quality. While the data link layer is in **informationTransfer** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from **informationTransfer** to **waitingAck** and back. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl remoteBusy

Access Read only

Description

This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl receiveRejectFrame

Access Read only

Description

This attribute counts the number of REJ frames received by the interface. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl ackTimeout

Access Read only

Description

This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate a problem at the link or improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote sides. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Mpanl SigMpanl iFramesTransmitted

Access	Read only
Description	This attribute counts the number of SVC I-frames transmitted to the interface on DLCI 0. An I-frame may be counted more than once if there are retransmissions at the SVC data link layer. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl iFramesTxDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames that are bound for the link but have been discarded. Discard reasons may be one of the following: 1.the frame length is beyond allow limit. 2.the SVC data link layer is in **disconnected** state. 3. the transmit queue has been purged because the queue length has reached the *reset* threshold. 4.the transmit queue or the queue waiting for acknowledgment has been purged because the link cannot be re-established. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl iFramesReceived

Access	Read only
Description	This attribute counts the number of SVC I-frames received from the interface. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl iFramesRcvdDiscarded

Access	Read only

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Description

This attribute counts the number of SVC I-frames received but have been discarded. The discard reasons are:
1. incorrect frame size
2. frame is out of sequence
3. frame received while the network side of the SVC data link layer is not in the **informationTransfer** or **waitingAck** state.

When this count reaches maximum, it wraps to zero.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: No default

COMPONENT Mpanl LocalManagementInterface (Lmi)

Groups: GROUP Mpanl Lmi ProtocolParameters (Parms)
GROUP Mpanl Lmi OsiState (State)

Scope: Application

Description: *Mpanl/n Lmi*
This component defines the parameters for implementing the Local Management Interface protocol.

Mib: MpaNetworkLink

Common Verbs: Help
List
Display

GROUP Mpanl Lmi ProtocolParameters (Parms)

Properties: Provisioned

Description

This group contains the provisionable attributes of the Local Management Interface component.

Mib: MpaNetworkLink

ATTRIBUTE Mpanl Lmi procedures (proc)

Access: Read only

Criticality: Process

Description

This attribute selects the procedures to be used for the Local Management Interface. For the MPANL service this attribute is always set to ***none***.

none: no Local Management Interface procedures are running on this interface. This accommodates MPANL user equipment that have not

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implemented any LMI procedures. The remaining attributes of this group will be ignored.

vendorForum:Local Management Interface procedures from the Vendor Forum specification are supported on this interface. *DLCI 1023* is used for the LMI protocol.

ansi: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol.

ccitt: Local Management Interface procedures from the CCITT specification are supported. *DLCI 0* is used for the LMI protocol.

Mib	MpaNetworkLink
Values	none vendorForum ansi ccitt
Default	none

GROUP Mpanl Lmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Lmi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	MpaNetworkLink
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mpanl Lmi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MpaNetworkLink
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mpanl Lmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

COMPONENT Mpanl VoiceOverFrameRelay (VoFr)

Groups	GROUP Mpanl VoFr Operational (Oper) GROUP Mpanl VoFr Statistics (Stats)

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Scope	Network
Description	*Mpanl/n VoiceOverFrameRelay* This component, when provisioned, provides VoFr link layer framing capability to the containing *Mpanl* instance.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl VoFr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the *VoFr* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl VoFr maximumFrameSize

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum size of VoFr frames transmitted to MPA. The size excludes HDLC flags and CRC octets. MPA signals the required value as part of the MPANL initial staging, which is then used to set the value of this attribute. Default value is used before MPANL staging is completed.
Mib	MpaNetworkLink
Values	Decimal (50..4100)
Units	octets
Default	4100

ATTRIBUTE Mpanl VoFr transmitInformationRate

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum information rate towards MPA. Value may change over time, as signalled by MPA. Default value is used before MPANL staging is completed.
Mib	MpaNetworkLink
Values	Decimal (16000..4294967295)
Units	bit/s
Default	16000

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GROUP Mpanl VoFr Statistics (Stats)

Properties	Operational
Description	This group contains statistics attributes of the *VoFr* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl VoFr fragmentedHighestPriorityFrames

Access	Read: All Write: Illegal
Description	This attribute counts egress frames with the highest priority, which had to be fragmented because they were larger than *maximumFrameSize*. This could happen when a data call is setup to use the highest emission priority, or MPA is provisioned with too low maximum frame size. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl VoFr lostFragmentsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts lost VoFr fragments from the interface. Presence of lost fragments indicates a link problem. Note that lost whole frames cannot be detected. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl VoFr protocolViolationsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts VoFr protocol violations detected in the data from the interface. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

COMPONENT Mpanl FrMuxSetup

Groups	GROUP Mpanl FrMuxSetup Operational (Op)
Scope	Application

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Description	*Mpanl/n FrMuxSetup* This component contains operational attributes for egress traffic shaping as well as the component name of the *FrMux Dlci* to which this *Mpanl/n* is associated.
Mib	MpaNetworkLink
Subcomponents	COMPONENT Mpanl FrMuxSetup PvcSetup
Common Verbs	Help List Display Add DELete

GROUP Mpanl FrMuxSetup Operational (Op)

Properties	Operational
Description	This group contains the following operational parameters: committedInformationRate of the PVC connection used for tunnelling the MPANL traffic, and the component name of the *Dlci* which carries the traffic for this MPANL.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl FrMuxSetup committedInformationRate (cir)

Access	Read only
Description	This attribute specifies, in bit/s, the committed information rate (CIR) to which the traffic transmitted towards the interface is shaped.
Mib	MpaNetworkLink
Values	Decimal (16000..4294967295)
Units	bit/s
Default	16000

ATTRIBUTE Mpanl FrMuxSetup dlciCompName

Access	Read only
Description	This attribute specifies the component name of the *Dlci* with which the application using this *FrMuxSetup* component is associated. The name is a string *FrMux/n Dlci/m*. For a PVC this is the same component name as provisioned under the subcomponent *FrMuxPvcSetup*.
Mib	MpaNetworkLink
Values	The name of the component

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Default	No default

COMPONENT Mpanl FrMuxSetup **PvcSetup**

Groups	GROUP Mpanl FrMuxSetup PvcSetup Provisioned (Prov)
Scope	Application
Description	*Mpanl/n FrMuxSetup PvcSetup* This component contains provisionable attributes for setting up a *Dlci* associated with the application using this component. The *Dlci* is of a PVC type.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl FrMuxSetup PvcSetup **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisionable attributes for setting up a *Dlci* associated with the application using the *FrMuxSetup* component. The *Dlci* is of the PVC type.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl FrMuxSetup PvcSetup **dlciName**

Access	Read and write
Criticality	Process
Description	This attribute is the link to the *Dlci* which is associated with the application using the *FrMuxSetup* component.
Mib	MpaNetworkLink
Values	Link (Hardware, applicationName)
Default	No default

COMPONENT Mpanl **Isdn**

Groups	GROUP Mpanl Isdn Provisioned (Prov) GROUP Mpanl Isdn Operational (Oper)
Scope	Network
Description	*Mpanl/n Isdn* This component defines the parameters associated with the ISDN B-

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	Channel interface. Adding this component makes the *Mpanl* behave as an ISDN access to the MPA.
Mib	MpaNetworkLink
Common Verbs	Help List Display Add DELete

GROUP Mpanl Isdn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Isdn* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Isdn t320

Access	Read and write
Criticality	Process
Description	This attribute specifies the waiting time for a silent B-Channel (no active VCs associated with the *Mpanl*) to be disconnected and made available. A value of 0 means t320 never times out.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Units	seconds
Default	60

ATTRIBUTE Mpanl Isdn addressSignalling (asig)

Access	Read and write
Criticality	Process
Description	This attribute defines whether the ISDN Calling Party Number is to be signaled to the remote DTE during an SVC call establishment. Otherwise, no changes to the current behavior of SVC call establishment (that is, the DNA is used in the calling party number information element).
Mib	MpaNetworkLink
Values	IsdnDna normalBehavior
Default	normalBehavior

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GROUP Mpanl Isdn Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Isdn* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Isdn dataSigChan

Access	Read only
Description	This attribute indicates the instance number of the *dataSigChan* component controlling the allocation of this *Mpanl Isdn* component.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Mpanl Isdn bChannelState (bState)

Access	Read only
Description	This attribute indicates the state of the B-Channel. If the value is ***idle*** it means that no VCs are connected and this B-Channel is available. If the value is ***busy*** it means this B-Channel has been allocated and is not available. If the value is ***disabled*** it means the application interface or the port is locked or disabled.
Mib	MpaNetworkLink
Values	idle busy disabled
Default	No default

ATTRIBUTE Mpanl Isdn lastUsedCgpn (lucgpn)

Access	Read only
Description	This attribute indicates the calling party number currently using the B-Channel. When the B-Channel is free, the value of this attribute is an empty string.
Mib	MpaNetworkLink
Values	BCD (0..15)
Default	No default

ATTRIBUTE Mpanl Isdn bChanIntState (bInt)

Access	Read only
Description	Debug information

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Mib	MpaNetworkLink
Values	isdnInit waitAccEnable waitLnsResponse waitFramerData enabling waitAccRegAck up down releasing
Default	No default

ATTRIBUTE Mpanl Isdn activeVirtualCircuitsCount (vcCount)

Access	Read only
Description	Current number of virtual circuits (switched and permanent) in data transfer.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

COMPONENT Mpanl Voice

Groups	GROUP Mpanl Voice Provisioned (Prov)
Scope	Device
Description	*Mpanl/n Vcp* This component defines the Voice Control Point characteristics of an instance of the *Mpanl* top level component. This includes SAP-x control message tracing for the MPANL instance, enabling Short Path Oriented (SPO) connections over Mpanl and accounting for Voice Calls over this instance of *Mpanl*.
Mib	MpaNetworkLink
Subcomponents	COMPONENT Mpanl Voice MpaVoiceAccounting (Acct)
Common Verbs	Help List Display

GROUP Mpanl Voice Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attribute used for SPO connections.
Mib	MpaNetworkLink

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ATTRIBUTE Mpanl Voice useSpo (spo)

Access	Read: All Write: All
Description	ATM Adaptation Layer Short Path Oriented (AALSPO) is used to optimize the voice traffic over ATM interfaces encapsulating a voice packet of an exact 45 byte size in a single ATM cell. Using AAL5, two cells are required to transport 45 byte packet because an 8 byte AAL5 trailer is needed by the protocol. AALSPO optimizes the disassembly/reassembly mechanism performed at AAL level by replacing the AAL5 trailer with a small sized 3 byte LRC field. By setting this attribute to ***yes*** the voice call will be routed on a AALSPO connection (specific to voice or video traffic) if a circuit of this type is properly provisioned. If not properly provisioned the system defaults to AAL5. The frame size for this virtual circuit will be 45 bytes, regardless of the frame size signaled by the MPA side. If no ATM interfaces are used it is recommended that this attribute be set to the default value (***no***).
Mib	MpaNetworkLink
Values	no yes
Default	no

COMPONENT Mpanl Voice MpaVoiceAccounting (Acct)

Groups	GROUP Mpanl Voice Acct Provisioned (Prov)
Scope	Application
Description	*Mpanl/n Voice MpaVoiceAccounting* The *VoiceAccounting* component defines the operational characteristics of the accounting system of the *Mpanl Voice* component. Accounting record generation for calls on the *Mpanl* is managed by this component.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl Voice Acct Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *VoiceAccounting* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Voice Acct accountCollection (aco)

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Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies that accounting records are to be collected for the various reasons: ***bill***, ***test***, ***study***, ***audit***. If none of these reasons is set, then accounting is suppressed.
Mib	MpaNetworkLink
Set of	bill test study audit
Default	No default

ATTRIBUTE Mpanl Voice Acct **accountClass (acl)**

Access	Read: All Write: All
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. The use of this attribute is decided by the network operator.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	0

ATTRIBUTE Mpanl Voice Acct **serviceExchange (sre)**

Access	Read: All Write: All
Description	This attribute specifies a user defined value, Data Service Exchange, as entered by the network operator and reported in the accounting record.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	0

ATTRIBUTE Mpanl Voice Acct **digitsSuppressed (ds)**

Access	Read: All Write: All
Description	This attribute specifies the number of trailing digits which will be suppressed in the *calledNumber* in the accounting records. Each of the specified number of trailing digits are replaced with an “X”. This option exists to satisfy privacy requirements in a number of countries.

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Mib	MpaNetworkLink
Values	Decimal (0..8)
Default	0

ATTRIBUTE Mpanl Voice Acct accountingOptions (ao)

Access	Read: All Write: All
Description	This attribute specifies optional settings for the voice networking accounting system. The option is: ***suppressTerminatingEndRecords*** - setting this option suppresses the generation of accounting records at the destination node. This reduces the volume of accounting data. This option has local significance only. It only suppresses the generation of accounting records for calls received by this node.
Mib	MpaNetworkLink
Set of	suppressTerminatingEndRecords (ster)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Mpanl

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Language type: U.S. English

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Nmis

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Language type: U.S. English

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COMPONENT NetworkManagementInterfaceSystem (Nmis)

Scope	Device
Description	*Nmis* The Network Management Interface System (NMIS) is the collection of on-swicth software interfaces provided to administer the node. NMIS offers Telnet (server and client), SSH (server) and FTP (server) access, a directly-connected Local operator capability, and a proprietary FMIP Interface for use by MDM. The *Nmis* component is a placeholder component to collect all the Network Management Interface components below it.
Mib	MgmtInterfaces
Subcomponents	COMPONENT Nmis SecureShell (Ssh) COMPONENT Nmis Local COMPONENT Nmis Telnet
Dyn. Subcomp.	COMPONENT Nmis Fmip COMPONENT Nmis Ftp
Common Verbs	Help List Display

COMPONENT Nmis SecureShell (Ssh)

Groups	GROUP Nmis Ssh OsiState (State) GROUP Nmis Ssh Operational (Oper) GROUP Nmis Ssh Provisioned (Prov)
Scope	Device
Description	*Nmis Ssh* Only the SSH server is supported. The *Session* subcomponent corresponds to the server connection. The network management interface

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is accessed from a remote computer using the SSH protocol. The SSH operator interface is otherwise identical to the Telnet operator interface.

Mib MgmtInterfaces

Dyn. Subcomp. COMPONENT Nmis Ssh Session

Common Verbs
Help
List
Display
LOCK : System_admin
Unlock : System_admin

VERB SERVERKEYGEN Nmis Ssh

Impact System_admin

Description This command generates a new server public/private authentication key pair.

GROUP Nmis Ssh **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib MgmtInterfaces

ATTRIBUTE Nmis Ssh **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib MgmtInterfaces

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nmis Ssh operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MgmtInterfaces
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nmis Ssh usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MgmtInterfaces
Values	idle active (activ) busy
Default	idle

GROUP Nmis Ssh Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.

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Mib	MgmtInterfaces

ATTRIBUTE Nmis Ssh maxAllowedSessions

Access	Read only
Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Ssh activeSessions

Access	Read only
Description	For FMIP, FTP, Telnet and Ssh interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer *Session* components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up. For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.
Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

GROUP Nmis Ssh Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Ssh* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Ssh timeoutPeriod

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the time-out period applicable to all Ssh sessions. When changed, the new value takes effect only for sessions created after the changes are activated. Setting this attribute to a value between ***5*** and ***120*** minutes forces sessions that are left idle to be automatically terminated after the specified amount of time. Using shorter time-out values, while increasing security, forces operators to monitor sessions more closely. This time-out period can be disabled for particular users by setting the

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value of the *timeoutProtocol* attribute of the *AccessControl Userid* component to ***disabled***.

Mib	MgmtInterfaces
Values	Decimal (5..120) disabled
Units	minutes
Default	disabled

ATTRIBUTE Nmis Ssh mode

Access	Read: System_admin Write: System_admin
Description	This attribute allows the user to allow only Ssh connections or both Telnet and Ssh connections. The default is both enabled.
Mib	MgmtInterfaces
Values	sshAndTelnet sshOnly
Default	sshAndTelnet

COMPONENT Nmis Ssh Session

Instance	Decimal (1..16)
Groups	GROUP Nmis Ssh Session Operational (Oper)
Scope	Application
Description	*Nmis Ssh Session/n* This component supports a single remote Ssh operator logged in using the Ssh protocol. On a CP3, the maximum number of concurrent Ssh sessions supported is 16.
Mib	MgmtInterfaces
Common Verbs	Help List Display

VERB CLEAR Nmis Ssh Session

Impact	System_admin
Description	*Clear Nmis Ssh Session/n* This command terminates the session connection as well as the client connection if it was up.

GROUP Nmis Ssh Session Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for an *SSH Session* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Ssh Session userid

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE Nmis Ssh Session dataStreams

Access	Read: Passive Write: Passive
Description	This attribute indicates which data streams (alarm, debug, log, scn and rtStats) will be transmitted back to the operator through this session. Only a user with a command impact of system administration may register for logs.
Mib	MgmtInterfaces
Set of	alarm (ala) debug (deb) log scn rtStats (rts)
Default	No default

ATTRIBUTE Nmis Ssh Session remoteIpAddr (address)

Access	Read only
Description	This attribute indicates the IP address of the remote device connected to the session.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Ssh Session remoteTcpPort (port)

Access	Read only
Description	This attribute indicates the TCP port number of the Ssh client being used on the remote device connected to the session.
Mib	MgmtInterfaces

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Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nmis Ssh Session screenWidth (width)

Access	Read and write
Description	This attribute indicates the maximum width (in characters) of operator command responses. Beyond this maximum, responses are either truncated or wrapped onto the next line, as appropriate. Asynchronous responses, such as alarms, are always displayed using a 79 character width.
Mib	MgmtInterfaces
Values	Decimal (79..2000)
Default	79

ATTRIBUTE Nmis Ssh Session loginTime

Access	Read: Passive Write: Illegal
Description	This attribute indicates the time at which the user logged in.
Mib	MgmtInterfaces
Values	Time (DHMS)
Default	No default

ATTRIBUTE Nmis Ssh Session idleTime

Access	Read: All Write: Illegal
Description	This attribute indicates the period of time the session has remained idle.
Mib	MgmtInterfaces
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

ATTRIBUTE Nmis Ssh Session role

Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this ssh session. A role is associated with a set of access privileges that is used for authorization.
Mib	MgmtInterfaces

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Values	String (0..128, ASCII)
Default	No default

COMPONENT Nmis Local

Groups	GROUP Nmis Local OsiState (State) GROUP Nmis Local Operational (Oper) GROUP Nmis Local Provisioned (Prov)
Scope	Device
Description	*Nmis Local* This network management interface is supported on the V.24 DCE port on the Control Processors. A VT-100 ASCII terminal must be connected to the V.24 DCE port to log in to the Local Operator Interface. The Local Operator Interface is otherwise identical to the Telnet operator interface.
Mib	MgmtInterfaces
Dyn. Subcomp.	COMPONENT Nmis Local Session
Common Verbs	Help List Display

GROUP Nmis Local OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Local adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — MgmtInterfaces

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Nmis Local operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — MgmtInterfaces

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Nmis Local usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — MgmtInterfaces

Values — idle
active (activ)
busy

Default — idle

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GROUP Nmis Local Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Local maxAllowedSessions

Access	Read only
Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Local activeSessions

Access	Read only
Description	For FMIP, FTP, Telnet and Ssh interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer *Session* components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up. For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.
Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

GROUP Nmis Local Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Local* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Local timeoutPeriod

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the time-out period applicable to all Local sessions. When changed, the new value takes effect only for sessions created after the changes are activated.

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Setting this attribute to a value between ***5*** and ***120*** minutes forces sessions that are left idle to be automatically terminated after the specified amount of time. Using shorter time-out values, while increasing security, forces operators to monitor sessions more closely.

This time-out period can be disabled for particular users by setting the value of the *timeoutProtocol* attribute of the *AccessControl Userid* component to ***disabled***.

Mib	MgmtInterfaces
Values	Decimal (5..120) disabled
Units	minutes
Default	disabled

COMPONENT Nmis Local Session

Instance	Decimal (1..2)
Groups	GROUP Nmis Local Session Operational (Oper)
Scope	Application
Description	*Nmis Local Session/n* This *Session* component supports a single local operator logged in to a V.24 DCE port of a control processor.
Mib	MgmtInterfaces
Common Verbs	Help List Display

GROUP Nmis Local Session Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for a *Local Session* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Local Session userid

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)
Default	No default

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ATTRIBUTE Nmis Local Session dataStreams

Access	Read: Passive Write: Passive
Description	This attribute indicates which data streams will be transmitted back to the operator through this session. Only a user with a command impact of system administration may register for logs.
Mib	MgmtInterfaces
Set of	alarm (ala) debug (deb) log scn rtStats (rts)
Default	No default

ATTRIBUTE Nmis Local Session hostCard (card)

Access	Read only
Description	This attribute holds the name of the host control processor *Card* component servicing the local operator session.
Mib	MgmtInterfaces
Values	The name of the component
Default	No default

ATTRIBUTE Nmis Local Session screenWidth (width)

Access	Read and write
Description	This attribute indicates the maximum width (in characters) of operator command responses. Beyond this maximum, responses are either truncated or wrapped onto the next line, as appropriate. Asynchronous responses, such as alarms, are always displayed using a 79 character width.
Mib	MgmtInterfaces
Values	Decimal (79..2000)
Default	79

ATTRIBUTE Nmis Local Session loginTime

Access	Read: Passive Write: Illegal
Description	This attribute indicates the time at which the user logged in.
Mib	MgmtInterfaces

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Values	Time (DHMS)
Default	No default

ATTRIBUTE Nmis Local Session idleTime

Access	Read: All Write: Illegal
Description	This attribute indicates the period of time the session has remained idle.
Mib	MgmtInterfaces
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

ATTRIBUTE Nmis Local Session role

Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this local session. A role is associated with a set of access privileges that is used for authorization.
Mib	MgmtInterfaces
Values	String (0..128, ASCII)
Default	No default

COMPONENT Nmis Telnet

Groups	GROUP Nmis Telnet OsiState (State) GROUP Nmis Telnet Operational (Oper) GROUP Nmis Telnet Provisioned (Prov)
Scope	Device
Description	*Nmis Telnet* Both the Telnet server and client are supported. The *Session* subcomponent corresponds to the server connection, while the *Session*'s *Client* subcomponent corresponds to the client connection. The server (that is, the network management interface) is accessed from a remote computer using the Telnet protocol. The Telnet operator interface is otherwise identical to the local operator interface. Each server can set up

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a single client connection. Note that Telnet clients are accessible only from a Telnet session, not from Local, FMIP, FTP or Ssh sessions.

Mib	MgmtInterfaces
Dyn. Subcomp.	COMPONENT Nmis Telnet Session
Common Verbs	Help List Display LOCK : System_admin Unlock : System_admin

GROUP Nmis Telnet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	MgmtInterfaces
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Nmis Telnet operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MgmtInterfaces
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nmis Telnet usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MgmtInterfaces
Values	idle active (activ) busy
Default	idle

GROUP Nmis Telnet Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet maxAllowedSessions

Access	Read only

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Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Telnet activeSessions

Access	Read only
Description	For FMIP, FTP, Telnet and Ssh interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer *Session* components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up. For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.
Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

GROUP Nmis Telnet Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Telnet* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet timeoutPeriod

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the time-out period applicable to all Telnet sessions. When changed, the new value takes effect only for sessions created after the changes are activated. Setting this attribute to a value between ***5*** and ***120*** minutes forces sessions that are left idle to be automatically terminated after the specified amount of time. Using shorter time-out values, while increasing security, forces operators to monitor sessions more closely. This time-out period can be disabled for particular users by setting the value of the *timeoutProtocol* attribute of the *AccessControl Userid* component to ***disabled***.
Mib	MgmtInterfaces

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Values	Decimal (5..120) disabled
Units	minutes
Default	disabled

COMPONENT Nmis Telnet Session

Instance	Decimal (1..16)
Groups	GROUP Nmis Telnet Session Operational (Oper)
Scope	Application
Description	*Nmis Telnet Session/n* This component supports a single remote Telnet operator logged in using the Telnet protocol. Optionally, a single outgoing Telnet client connection can be established from here. On a CP, the maximum number of concurrent telnet sessions supported is 8; on a CP2, it is 12; on a CP3, it is 16.
Mib	MgmtInterfaces
Dyn. Subcomp.	COMPONENT Nmis Telnet Session Client
Common Verbs	Help List Display

VERB CLEAR Nmis Telnet Session

Impact	System_admin
Description	*Clear Nmis Telnet Session/n* This command terminates the session connection as well as the client connection if it was up.

GROUP Nmis Telnet Session Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for a *Telnet Session* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet Session userid

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)

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Default	No default

ATTRIBUTE Nmis Telnet Session **dataStreams**

Access	Read: Passive Write: Passive
Description	This attribute indicates which data streams (alarm, debug, log, scn and rtStats) will be transmitted back to the operator through this session. Only a user with a command impact of system administration may register for logs. When a client connection is up through this interface, all of the values are turned off. This means that this data is discarded when the session has a Telnet client connection set up. When the client connection terminates, the data which was being received prior to the client being set up is requested again.
Mib	MgmtInterfaces
Set of	alarm (ala) debug (deb) log scn rtStats (rts)
Default	No default

ATTRIBUTE Nmis Telnet Session **remoteIpAddr (address)**

Access	Read only
Description	This attribute indicates the IP address of the remote device connected to the session.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Telnet Session **remoteTcpPort (port)**

Access	Read only
Description	This attribute indicates the TCP port number of the Telnet client being used on the remote device connected to the session.
Mib	MgmtInterfaces
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nmis Telnet Session **screenWidth (width)**

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Access	Read and write
Description	This attribute indicates the maximum width (in characters) of operator command responses. Beyond this maximum, responses are either truncated or wrapped onto the next line, as appropriate. Asynchronous responses, such as alarms, are always displayed using a 79 character width.
Mib	MgmtInterfaces
Values	Decimal (79..2000)
Default	79

ATTRIBUTE Nmis Telnet Session loginTime

Access	Read: Passive Write: Illegal
Description	This attribute indicates the time at which the user logged in.
Mib	MgmtInterfaces
Values	Time (DHMS)
Default	No default

ATTRIBUTE Nmis Telnet Session idleTime

Access	Read: All Write: Illegal
Description	This attribute indicates the period of time the session has remained idle.
Mib	MgmtInterfaces
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

ATTRIBUTE Nmis Telnet Session role

Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this telnet session. A role is associated with a set of access privileges that is used for authorization.
Mib	MgmtInterfaces
Values	String (0..128, ASCII)
Default	No default

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COMPONENT Nmis Telnet Session Client

Groups	GROUP Nmis Telnet Session Client Operational (Oper)
Scope	Application
Description	*Nmis Telnet Session/n Client* This component represents a client connection to a remote node through this session. The client connection is established by invoking the *Telnet* command of a *Vr* component.
Mib	MgmtInterfaces
Common Verbs	Help List Display

GROUP Nmis Telnet Session Client Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for a *Telnet Client* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet Session Client virtualRouter (vr)

Access	Read only
Description	This attribute indicates the VR instance that determines which address space the remote IP address belongs to.
Mib	MgmtInterfaces
Values	The name of the component
Default	No default

ATTRIBUTE Nmis Telnet Session Client remoteIpAddr (address)

Access	Read only
Description	This attribute indicates the IP address of the remote side of the client connection.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Telnet Session Client remoteTcpPort (port)

Access	Read only
Description	This attribute indicates the TCP port number of the remote side of the client connection.

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Mib	MgmtInterfaces
Values	Decimal (0..65535)
Default	No default

COMPONENT Nmis Fmip

Groups	GROUP Nmis Fmip OsiState (State) GROUP Nmis Fmip Operational (Oper)
Scope	Device
Description	*Nmis Fmip* This network management interface is accessed by an MDM calling the node for management purposes using the proprietary FMIP protocol.
Mib	MgmtInterfaces
Dyn. Subcomp.	COMPONENT Nmis Fmip Session
Common Verbs	Help List Display LOCK : System_admin Unlock : System_admin

GROUP Nmis Fmip OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Fmip adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — MgmtInterfaces

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Nmis Fmip operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — MgmtInterfaces

Values
enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Nmis Fmip usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — MgmtInterfaces

Values
idle
active (activ)
busy

Default — idle

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GROUP Nmis Fmip Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Fmip maxAllowedSessions

Access	Read only
Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Fmip activeSessions

Access	Read only
Description	For FMIP, FTP, Telnet and Ssh interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer *Session* components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up. For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.
Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

COMPONENT Nmis Fmip Session

Instance	Decimal (1..35)
Groups	GROUP Nmis Fmip Session Operational (Oper)
Scope	Application

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Description	*Nmis Fmip Session/n* This Session component supports a single FMIP connection from a remote MDM.
Mib	MgmtInterfaces
Common Verbs	Help List Display

VERB CLEAR **Nmis Fmip Session**

Impact	System_admin
Description	*Clear Nmis Fmip Session/n* This command terminates the session and clears the TCP connection.

GROUP **Nmis Fmip Session** **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for an *Fmip Session* component.
Mib	MgmtInterfaces

ATTRIBUTE **Nmis Fmip Session** **userid**

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE **Nmis Fmip Session** **dataStreams**

Access	Read: Passive Write: Passive
Description	This attribute indicates which data streams will be transmitted back to the operator through this session. Only a user with a command impact of system administration may register for logs.
Mib	MgmtInterfaces
Set of	alarm (ala) debug (deb) log scn rtStats (rts)
Default	No default

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ATTRIBUTE Nmis Fmip Session **remoteIpAddr (address)**

Access	Read only
Description	This attribute indicates the IP address of the remote device connected to the session.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Fmip Session **remoteTcpPort (port)**

Access	Read only
Description	This attribute indicates the TCP port number of the FMIP client being used on the remote device connected to the session.
Mib	MgmtInterfaces
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nmis Fmip Session **screenWidth (width)**

Access	Read and write
Description	This attribute indicates the maximum width (in characters) of operator command responses. Beyond this maximum, responses are either truncated or wrapped onto the next line, as appropriate. Asynchronous responses, such as alarms, are always displayed using a 79 character width.
Mib	MgmtInterfaces
Values	Decimal (79..2000)
Default	79

ATTRIBUTE Nmis Fmip Session **loginTime**

Access	Read: Passive Write: Illegal
Description	This attribute indicates the time at which the user logged in.
Mib	MgmtInterfaces
Values	Time (DHMS)
Default	No default

ATTRIBUTE Nmis Fmip Session **role**

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Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this FMIP session. A role is associated with a set of access privileges that is used for authorization.
Mib	MgmtInterfaces
Values	String (0..128, ASCII)
Default	No default

COMPONENT Nmis Ftp

Groups	GROUP Nmis Ftp OsiState (State) GROUP Nmis Ftp Operational (Oper)
Scope	Device
Description	*Nmis Ftp* This network management interface is accessed from a remote computer using the FTP protocol.
Mib	MgmtInterfaces
Dyn. Subcomp.	COMPONENT Nmis Ftp Session
Common Verbs	Help List Display LOCK : System_admin Unlock : System_admin

GROUP Nmis Ftp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Ftp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — MgmtInterfaces

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Nmis Ftp operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — MgmtInterfaces

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Nmis Ftp usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — MgmtInterfaces

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Values	idle active (activ) busy
Default	idle

GROUP Nmis Ftp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Ftp maxAllowedSessions

Access	Read only
Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Ftp activeSessions

Access	Read only
Description	For FMIP, FTP, Telnet and Ssh interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer *Session* components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up. For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.
Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

COMPONENT Nmis Ftp Session

Instance	Decimal (1..16)
Groups	GROUP Nmis Ftp Session Operational (Oper)
Scope	Application

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Description	*Nmis Ftp Session/n* This component supports a single remote FTP client logged in using the FTP protocol.
Mib	MgmtInterfaces
Common Verbs	Help List Display

VERB CLEAR Nmis Ftp Session

Impact	System_admin
Description	*Clear Nmis Ftp Session/n* This command terminates the session and clears the TCP connection.

GROUP Nmis Ftp Session **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for an *Ftp Session* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Ftp Session **userid**

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE Nmis Ftp Session **remoteIpAddr (address)**

Access	Read only
Description	This attribute indicates the IP address of the remote device connected to the session.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Ftp Session **remoteTcpPort (port)**

Access	Read only
Description	This attribute indicates the TCP port number of the FTP control connection being used on the remote device connected to the session.

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Mib	MgmtInterfaces
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nmis Ftp Session role

Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this FTP session. A role is associated with a set of access privileges that is used for authorization.
Mib	MgmtInterfaces
Values	String (0..128, ASCII)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Nmis

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Publication: NN10600-060
Document status: Standard
Document issue: 7.2S1
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Product release: PCR7.2 and up
Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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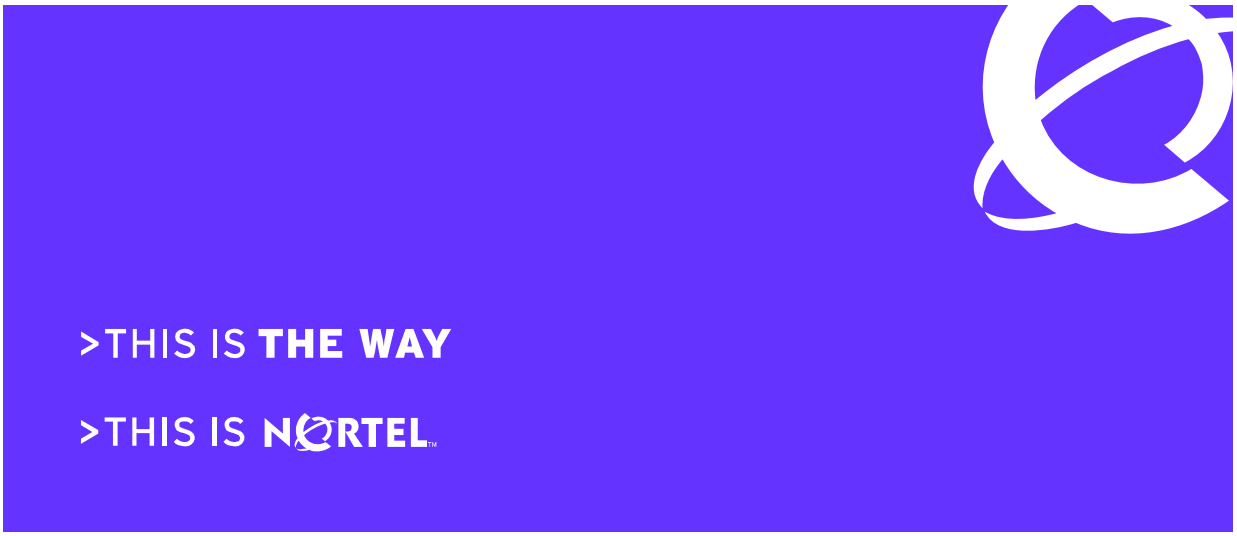

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Npi

NN10600-060

Document status: Standard
Document issue: 7.2S1
Document date: March 2006
Product release: PCR7.2 and up
Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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COMPONENT NumberingPlanIndicator (Npi)

Instance	x121 e164
Groups	GROUP Npi Statistics (Stats)
Scope	Device
Description	*NumberingPlanIndicator / <x121,e164>* This component collects all DNAs for a particular numbering plan indicator e.g., X.121.
Mib	BaseRouting
Dyn. Subcomp.	COMPONENT Npi Dna
Common Verbs	Help List Display

GROUP Npi Statistics (Stats)

Properties	Provisioned
Description	*Npi/<x121,e164> Statistics* This group of attributes contains the statistics kept for a particular numbering plan indicator. The only statistic present is the total number of DNAs provisioned for the numbering plan.
Mib	BaseRouting

ATTRIBUTE Npi totalDnas

Access	Read only
Description	This attribute holds the total number of Dnas that are in the numbering plan. If this attribute is displayed in provisioning mode, the number includes the Dnas that have been added/deleted in that provisioning session, otherwise the number only includes the Dnas that have been activated.

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Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	0

COMPONENT Npi Dna

Instance	BCD (1..15)
Groups	GROUP Npi Dna Information (Info)
Scope	Application
Description	*Npi/<x121,e164> Dna/<BCD(1..15)>* This component is a dynamic subcomponent of *NumberingPlanIndicator*. This subcomponent represents a DNA in the numbering plan.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Npi Dna Information (Info)

Properties	Provisioned
Description	*Npi/<x121,e164> Dna/<BCD(1..15)> Information* This group of attributes contains the attributes for a DNA in the numbering plan.
Mib	BaseRouting

ATTRIBUTE Npi Dna destinationName

Access	Read only
Description	This attribute holds the Component Name of the application to which the DNA belongs.
Mib	BaseRouting
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Npi

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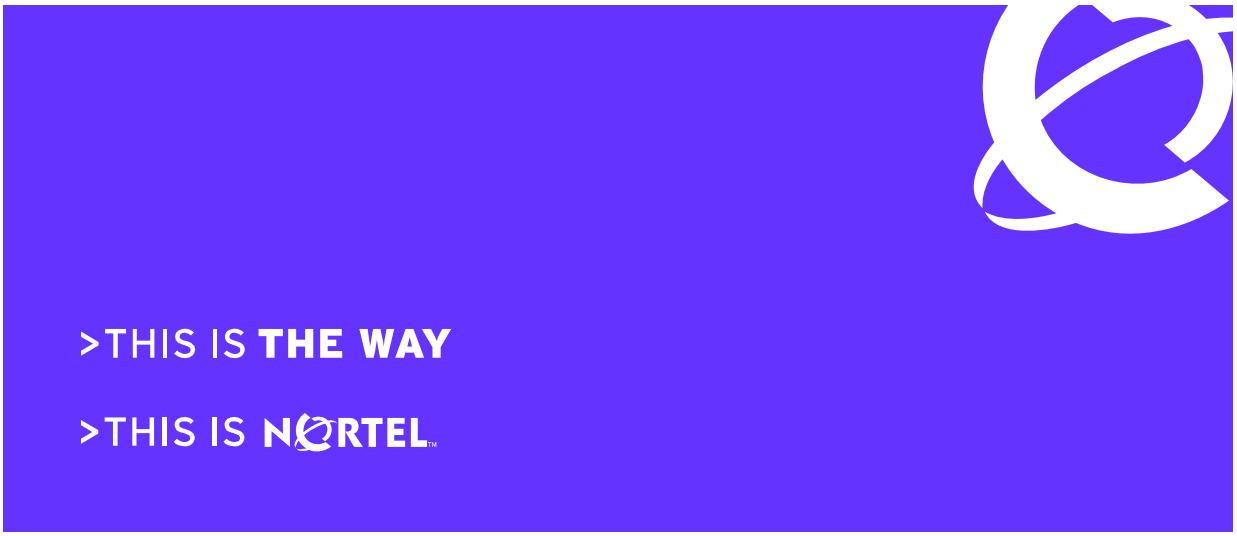

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Nsta

NN10600-060

Document status: Standard
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Product release: PCR7.2 and up
Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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COMPONENT NarrowbandServicesTrunkOverATM (Nsta)

Instance	Decimal (0..15999)
Groups	GROUP Nsta Provisioned (Prov) GROUP Nsta OsiState (State) GROUP Nsta Statistics (Stats)
Scope	Device
Description	*NarrowbandServicesTrunkOverATM/n* This component represents the application which is responsible for managing voice services on a Voice Services Processor (VSP) card. This component manages all *Connection* components provisioned on a single VSP card. The maximum number of *Connection* subcomponents is limited to 64.
Mib	Nsta
Opt. Subcomp.	COMPONENT Nsta Connection (Conn) COMPONENT Nsta VoiceGateway (Vgs)
Common Verbs	Help List Display Add DELete

GROUP Nsta Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Nsta* Component.
Mib	Nsta

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ATTRIBUTE Nsta linkToServer (l2s)

Access	Read and write
Criticality	Process
Description	This attribute specifies a hardware link to a *Vsp* component on a Voice Services Processor FP.
Mib	Nsta
Values	Link (Hardware, linkToApplication)
Default	No default

ATTRIBUTE Nsta idlePattern (iPattern)

Access	Read and write
Criticality	Process
Description	This attribute specifies the pattern that is transmitted on the TDM interface when a particular timeslot is not used.
Mib	Nsta
Values	Hex (H.0..H.ff)
Default	H.7f

GROUP Nsta OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Nsta

ATTRIBUTE Nsta adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting

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down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Nsta
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Nsta
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Nsta
Values	idle active (activ) busy
Default	idle

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GROUP Nsta Statistics (Stats)

Properties	Operational
Description	This group contains aggregate statistical data incorporating statistics from all *Nsta Connection*s.
Mib	Nsta

ATTRIBUTE Nsta aal2PacketsDropped (pktsDrop)

Access	Read only
Description	This attribute counts the number of packets received on unconfigured CIDs. The *Brag cidList* holds all valid CIDs. Any packets received on a CID which is not valid will be dropped and counted. The counter wraps to 0 when it exceeds its maximum value. This attribute is not displayed if there is a *Vgs* component under the *Nsta* component.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta aal2LastDroppedPacketId (lastDropPktId)

Access	Read only
Description	This attribute indicates the VPI, VCI and CID (AAL2 Channel ID) of the last dropped AAL2 packet received on an unprovisioned CID. The value is displayed in the format vpi.vci.cid. This attribute is not displayed if there is a *Vgs* component under the *Nsta* component.
Mib	Nsta
Values	Integer Sequence (0..65535; 0..255; 0..255)
Default	No default

COMPONENT Nsta Connection (Conn)

Instance	Decimal (1..128)
Groups	GROUP Nsta Conn CustomerIdentifierData (CidData) GROUP Nsta Conn Provisioned (Prov) GROUP Nsta Conn OsiState (State) GROUP Nsta Conn Operational (Oper) GROUP Nsta Conn Statistics (Stats)
Scope	Device

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Description	*Nsta/n Connection/n* This component represents an *Nsta* connection. When AAL5 is used there are two ATM VCCs associated with each *Nsta* connection. One ATM VCC is used to carry voice and one is used to carry CCS information. When AAL2 is used the CCS information can either be transported over the same ATM VCC as the voice data or transported over a separate ATM VCC. User provisionable basic rate services are defined in the *BasicRateGroup (Brag)* component. There is only one instance of *Brag* per *Conn*.
Mib	Nsta
Subcomponents	COMPONENT Nsta Conn BasicRateGroup (Brag)
Opt. Subcomp.	COMPONENT Nsta Conn NailedUpAdaptionPoint (Nap) COMPONENT Nsta Conn ActiveAccessPoint (Aap) COMPONENT Nsta Conn PassiveAccessPoint (Pap) COMPONENT Nsta Conn SpvcAccessPoint (SpvcAp)
Dyn. Subcomp.	COMPONENT Nsta Conn AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Nsta

ATTRIBUTE Nsta Conn customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

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	An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	Nsta
Values	Decimal (0; 1..8191)
Default	0

GROUP Nsta Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Connection*.
Mib	Nsta

ATTRIBUTE Nsta Conn holdOverTime (hoTime)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum period of time before a partially filled ATM cell is scheduled for transmission. It is also referred to as “combined use timer” (Timer_CU), in the ITU-T I.363.2. The holdover time affects the packet delay and the bandwidth used by the connection. The longer the delay the higher the bandwidth efficiency of the ATM connection and vice versa. The holdover time is rounded to the nearest multiple of 0.125 milliseconds.
Mib	Nsta
Values	Decimal (0.500..15.875)
Units	msec
Default	2.000

ATTRIBUTE Nsta Conn pcrHighCongThreshold (phct)

Access	Read and write
Description	This attribute specifies the cell rate above which the most severe congestion management measures are invoked. This threshold is defined as a percentage of PCR defined in *AtmIf Vcc Tm*. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure. The value of this threshold must be set to a higher value than *pcrLowCongThreshold*.
Mib	Nsta
Values	Decimal (50..100)

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Units	%
Default	90

ATTRIBUTE Nsta Conn pcrLowCongThreshold (plct)

Access	Read and write
Description	This attribute specifies the upper cell rate threshold of normally acceptable operation for the PCR-based congestion control mechanism. In the region between this threshold and *pcrHighCongThreshold* mild congestion management measures are invoked. This threshold is defined as a percentage of PCR defined in *AtmIf Vcc Tm.* The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure. The value of this threshold must be set to a lower value than *pcrHighCongThreshold*.
Mib	Nsta
Values	Decimal (10..100)
Units	%
Default	80

ATTRIBUTE Nsta Conn scrHighCongThreshold (shct)

Access	Read and write
Description	This attribute specifies the lower threshold of the upper region of operation relative to SCR defined in *AtmIf Vcc Tm*. This attribute is defined as a percentage of the expected number of cells received in *scrTrafficManagementInterval* at SCR. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure, for example down speeding. The value of this threshold must be set to a higher value than *scrLowCongThreshold*.
Mib	Nsta
Values	Decimal (100..150)
Units	%
Default	125

ATTRIBUTE Nsta Conn scrLowCongThreshold (slct)

Access	Read and write
Description	This attribute specifies the upper threshold of the lowest region of operation relative to SCR defined in *AtmIf Vcc Tm*. This attribute is defined as a percentage of the expected number of cells received in *scrTrafficManagementInterval* at SCR. The PCR and SCR thresholds are combined to give an overall congestion

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	state which is used to determine a congestion management measure, for example down speeding. This threshold must be set to a lower value than *scrHighCongThreshold*.
Mib	Nsta
Values	Decimal (50..100)
Units	%
Default	75

ATTRIBUTE Nsta Conn scrHighBurstCongestionThreshold (shbct)

Access	Read and write
Description	This attribute specifies the lower threshold of the upper region for accumulated SCR burst count. It is defined as a percentage of the cell burst limit which is defined in *AtmIf Vcc Tm*. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure, for example down speeding. This threshold must be set to a higher value than *scrLowBurstCongestionThreshold.*
Mib	Nsta
Values	Decimal (50..100)
Units	%
Default	90

ATTRIBUTE Nsta Conn scrLowBurstCongestionThreshold (slbct)

Access	Read and write
Description	This attribute specifies the upper threshold for the normally safe region for accumulated SCR burst count. It is defined as a percentage of the cell burst limit defined in *AtmIf Vcc Tm*. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure, for example down speeding. This threshold must be set to a lower value than *scrHighBurstCongestionThreshold*.
Mib	Nsta
Values	Decimal (0..100)
Units	%
Default	70

ATTRIBUTE Nsta Conn basicTrafficManagementInterval (basTrafManInt)

Access	Read and write

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Description	This attribute specifies how often the cell rate is sampled by the PCR congestion management algorithm. The time interval should be short enough so that the system responds quickly to PCR violation. It must however be long enough to allow the voice system to react to changes and for those changes to stabilize before the next sample. If the specified value is not a multiple of 50, the nearest multiple of 50 milliseconds is used as the sample interval.
Mib	Nsta
Values	Decimal (50..500)
Units	msec
Default	100

ATTRIBUTE Nsta Conn scrTrafficManagementInterval (scrTrafManInt)

Access	Read and write
Description	This attribute specifies the time interval over which the cell rate is sampled by the SCR congestion management algorithm. It is defined as a multiplier of *basicTrafficManagementInterval*. The time interval should be set low relative to the maximum permitted burst duration so that the system meets SCR traffic criteria and maintains the required frame relay QOS on the link. It should however be long enough to avoid unnecessary downspeeding due to very transient load conditions.
Mib	Nsta
Values	Decimal (1..5)
Default	2

ATTRIBUTE Nsta Conn networkLogLaw (nLaw)

Access	Read and write
Description	This attribute specifies the G711 log law to use on the network wide side of an NSTA trunk. If set to ***autoConfigure***, then the value used is derived from the type of TDM interface: ***muLaw*** is used for *DS1* trunks, and ***aLaw*** is used for *E1* trunks. For *E1* trunks, ***muLaw*** is not permitted.
Mib	Nsta
Values	autoConfigure muLaw aLaw
Default	autoConfigure

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GROUP Nsta Conn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Nsta

ATTRIBUTE Nsta Conn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Nsta
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Conn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Nsta
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Conn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Nsta
Values	idle active (activ) busy
Default	idle

GROUP Nsta Conn Operational (Oper)

Properties	Operational
Description	This group contains status information about the *Connection*.
Mib	Nsta

ATTRIBUTE Nsta Conn aal2CpLossStatus (cpLossStatus)

Access	Read only
Description	This attribute indicates whether an AAL2 common part sublayer alarm has been raised. It is set to ***loss*** if start field errors persist for more than 2 seconds. It is set to ***noLoss*** when start field errors have been absent for at least 10 seconds.
Mib	Nsta
Values	noLoss loss
Default	No default

GROUP Nsta Conn Statistics (Stats)

Properties	Operational
Description	This group contains statistical data for a *Connection*.

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Mib	Nsta

ATTRIBUTE Nsta Conn aal2StartFieldErrors (sfErr)

Access	Read only
Description	This attribute counts the cells received with an AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) Start Field error. A Start Field error includes a cell with a parity error or a cell in which the packet pointed-to by the offset field (OSF) has a packet HEC error. The counter will wrap to zero when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn aal2SequenceErrors (seqErr)

Access	Read only
Description	This attribute counts the cells received with an unexpected AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) sequence number. The counter will wrap to zero when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Conn BasicRateGroup (Brag)

Instance	Decimal (0..159999)
Groups	GROUP Nsta Conn Brag Provisioned (Prov) GROUP Nsta Conn Brag Operational (Oper) GROUP Nsta Conn Brag OsiState (State)
Scope	Device
Description	*Nsta/n Conn/n BasicRateGroup/n* This component defines a *BasicRateGroup* (*Brag*), comprising the 64k timeslots relayed either by a linked *Chan* component or a CES connection to a *Pap* subcomponent. All timeslots within a *Brag* have the same trunking services provisioned against them (for example, silence

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suppression).
There is only one instance of *Brag* per *Conn*.

Mib	Nsta
Opt. Subcomp.	COMPONENT Nsta Conn Brag ChannelAssocSignalingTransport (Cast) COMPONENT Nsta Conn Brag CommonChannelSignalingTransport (Ccst) COMPONENT Nsta Conn Brag PassiveAccessPoint (Pap)
Dyn. Subcomp.	COMPONENT Nsta Conn Brag BasicRateChannel (Brac) COMPONENT Nsta Conn Brag AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Brag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *BasicRateGroup* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag interfaceName (intName)

Access	Read and write
Criticality	Process
Description	This attribute specifies which *Chan* component contains the timeslots for the *Brag*. The *Chan* component must be provisioned on a 2pDS3cAal FP or a 32pE1Aal FP. This attribute must be empty if a *NstaBragPassiveAccessPoint* subcomponent is present.
Mib	Nsta
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Conn Brag ccdTimeslotList (ccdList)

Access	Read and write
Criticality	Process
Description	This attribute specifies the timeslots that will be transported as clear channel data when active within the *Brag* component. If the *interfaceName* attribute is not empty each timeslot specified in this list must be provisioned in the linked *Chan* component.

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Mib	Nsta
Set of	Decimal (1..31)
Default	No default

ATTRIBUTE Nsta Conn Brag bufferSize (bufSize)

Access	Read and write
Criticality	Process
Description	This attribute specifies the capacity of the packet delay variation (PDV) buffer in milliseconds of data. To ensure that PDV can be tolerated, it is necessary to delay the transmission of initial packets received until a threshold is reached. When this threshold is reached packets are transmitted across the TDM network. The length of this delay is defined by *pdvt* and *bufferSize* attributes where the amount of data played out to the TDM network in the time specified by *pdvt* is equal to the time of the initial delay. There should be enough data in the reassembly buffer to allow transmission for a period of time defined by the *pdvt* before buffer underflow occurs due to the next delayed packet. The *bufferSize* is the number of milliseconds worth of buffer space that is allocated to accommodate packet delay variation (or jitter). A large buffer size reduces the probability of buffer overflow, thus reduces packet loss. The *bufferSize* attribute value and *pdvt* attribute value should be chosen appropriately to match the ATM network performance. The value must be greater than the value of *pdvt*, usually twice the value.
Mib	Nsta
Values	Decimal (5..100)
Units	msec
Default	40

ATTRIBUTE Nsta Conn Brag packetDelayVariationTolerance (pdvt)

Access	Read and write
Criticality	Process
Description	This attribute specifies the initial delay in milliseconds before any data is transmitted (normally set to be the mid-point of the reassembly buffer). This attribute, together with the *bufferSize* attribute, can be configured to optimize the jitter tolerance versus absolute delay performance.
Mib	Nsta
Values	Decimal (5..50)
Units	msec
Default	20

ATTRIBUTE Nsta Conn Brag silenceDetectionHangOverTime (silDetTime)

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Access	Read and write
Criticality	Process
Description	This attribute specifies the time for which a silent timeslot's speech path is left on before being suppressed. This helps to prevent clipping at the end of words.
Mib	Nsta
Values	Decimal (30..500)
Units	msec
Default	200

ATTRIBUTE Nsta Conn Brag lossIntegrationPeriod (intPeriod)

Access	Read and write
Description	This attribute specifies the interval of time for which a loss of packet condition must persist before the *packetLossStatus* is set to ***loss*** on a *BasicRateChannel* component.
Mib	Nsta
Values	Decimal (1..60)
Units	seconds
Default	2

ATTRIBUTE Nsta Conn Brag lossClearPeriod (clrPeriod)

Access	Read and write
Description	This attribute specifies the interval of time for which a loss of packets condition must be absent before the *packetLossStatus* is set to ***noLoss*** on a *BasicRateChannel* component.
Mib	Nsta
Values	Decimal (1..600)
Units	seconds
Default	10

ATTRIBUTE Nsta Conn Brag ingressGain (iGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM ingress side to balance the network loss plan.
Mib	Nsta
Values	Signed (-12..12)

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Units	dB
Default	0

ATTRIBUTE Nsta Conn Brag egressGain (eGain)

Access	Read and write
Description	This attribute is the gain applied on the TDM egress side to balance the network loss plan.
Mib	Nsta
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Conn Brag echoCancellation (eCan)

Access	Read and write
Description	This attribute enables or disables echo cancellation. The value of this attribute will determine whether echo cancellation will be on or off when a 2100Hz tone is detected. ***g165Mode*** - Enables echo cancellation except when a 2100Hz tone with phase reversal is detected. ***alwaysOn*** - Enables echo cancellation regardless of whether a 2100Hz tone is detected. ***g164Mode*** - Disables echo cancellation only when a 2100Hz tone is detected, regardless of phase reversal. ***disabled*** - Disables echo cancellation.
Mib	Nsta
Values	g165Mode disabled alwaysOn g164Mode
Default	g165Mode

ATTRIBUTE Nsta Conn Brag minimumEchoReturnLoss (minEchoRetLoss)

Access	Read and write
Description	This attribute specifies the minimum echo return loss that can be expected on the line.
Mib	Nsta
Values	Decimal (0; 3; 6)
Units	dB
Default	6

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ATTRIBUTE Nsta Conn Brag **echoCancelComfortNoiseGeneration (eCanComNoiseGen)**

Access	Read and write
Description	The attribute enables or disables comfort noise generation for the echo cancellation feature. This attribute has no effect if *echoCancellation* is ***disabled***.
Mib	Nsta
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Conn Brag **faxIdleSuppression (faxSup)**

Access	Read and write
Description	This attribute enables or disables fax idle suppression.
Mib	Nsta
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Conn Brag **silenceSuppression (silSup)**

Access	Read and write
Description	This attribute specifies when silence suppression is performed. A value of ***onCongestion*** indicates that silence suppression will be on only during periods of congestion on the ATM connection. A value of ***enabled*** indicates that silence suppression will be on at all times. A value of ***disabled*** indicates that silence suppression will never be on.
Mib	Nsta
Values	enabled disabled onCongestion
Default	enabled

ATTRIBUTE Nsta Conn Brag **silenceSuppressionThreshold (silSupThresh)**

Access	Read and write
Description	This attribute specifies the level in dBm0 above which silence suppression is not performed.
Mib	Nsta
Values	Signed (-60..-40)

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Default	-40

ATTRIBUTE Nsta Conn Brag maxVoiceRate (maxVRate)

Access	Read and write
Description	This attribute selects the encoding algorithm to be used for voice channels within the *Brag* under normal conditions transmitted along the ATM connection, (when no 2100 Hz tone is detected, and there is no ATM connection congestion). This attribute must be set to a higher or equal bandwidth than the *minVoiceRate* attribute.
Mib	Nsta
Values	64kG711 32kG726 24kG726 16kG726 8kG729AB
Default	32kG726

ATTRIBUTE Nsta Conn Brag minVoiceRate (minVRate)

Access	Read and write
Description	This attribute selects the encoding algorithm to be used for voice channels within the *Brag* when the ATM capacity carrying the *Conn* component is congested. When the number of channels with voiceband data is less than or equal to *voicebandDataMaxChannels* then this attribute has no affect on those voiceband data channels. When the number of voiceband data channels exceeds *voicebandDataMaxChannels* this attributes rate will be applied to the excess channels during congestion. This attribute must be set to a lower or equal bandwidth than the *maxVoiceRate* attribute.
Mib	Nsta
Values	64kG711 32kG726 24kG726 16kG726 8kG729AB
Default	16kG726

ATTRIBUTE Nsta Conn Brag tone2100Rate (toneRate)

Access	Read and write
Description	This attribute selects the encoding algorithm to be used for AAL2 channels within the *Brag* on which 2100Hz tone is detected (regardless of phase reversal).

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Mib	Nsta
Values	64kG711 32kG726
Default	64kG711

ATTRIBUTE Nsta Conn Brag ccsClearDataMaxChannels (clrDataMaxChan)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of channels permitted to transport clear data during congestion.
Mib	Nsta
Values	Decimal (0..31)
Default	0

ATTRIBUTE Nsta Conn Brag voicebandDataMaxChannels (vbdMaxChan)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of voice band data channels permitted at modem rate during congestion.
Mib	Nsta
Values	Decimal (0..31)
Default	12

ATTRIBUTE Nsta Conn Brag tdmLogLaw (tLaw)

Access	Read and write
Description	This attribute specifies the G711 log law to use on the TDM side of an NSTA trunk. If set to ***autoConfigure***, then the actual value used is derived from the facility, namely ***muLaw*** would be used for *DS1* trunks, while ***aLaw*** would be used by *E1* trunks.
Mib	Nsta
Values	autoConfigure muLaw aLaw
Default	autoConfigure

ATTRIBUTE Nsta Conn Brag tdmResponseForFailures (tdmRsp)

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Access	Read and write
Criticality	Process
Description	This attribute specifies how the *Brag* responds to ATM failures. The possible values are: ***tc*** - trunk conditioning is transmitted in the TDM egress direction, ***ais*** - AIS is transmitted in the TDM egress direction.
Mib	Nsta
Values	tc ais
Default	ais

ATTRIBUTE Nsta Conn Brag dtmfTransport (dtmf)

Access	Read and write
Description	This attribute specifies how DTMF tones are handled and is required because the ***8kG729AB*** rate cannot reliably transport DTMF tones. If the voice compression rate is ***8kG729AB*** then an attribute value of ***upspeed*** will increase the rate to ***64kG711*** upon detection of DTMF tones. If the voice compression rate is not ***8kG729AB*** then the attribute value should be ***disabled*** which causes DTMF tones to be treated as normal voice traffic and encoded at the current voice rate.
Mib	Nsta
Values	disabled upspeed
Default	No default

ATTRIBUTE Nsta Conn Brag trafficChannelIdentifierList (cidList)

Access	Read and write
Criticality	Process
Description	This attribute specifies AAL2 Channel Identifiers (CIDs) to be used for the timeslots within the *BasicRateGroup*. The lowest numbered timeslot corresponds to the first CID in the list, with further timeslots moving up the *cidList*. The *cidList* does not have to be in numerical order. The number of CIDs in the list must equal the number of bearer channel timeslots intended for user traffic. If the *Brag* component is linked to a *Chan* component, via the *interfaceName* attribute, then an empty list means that the value used is derived from the TDM trunk, namely: DS1 with CCS:8-30 DS1 without CCS:8-31 E1 with CCS:8-37 E1 without CCS:8-38

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	If a *PassiveAccessPoint* subcomponent is present under the *Brag* component then this attribute must be provisioned with a non empty value.
Mib	Nsta
List of	Decimal (8..255)
Default	No default

GROUP Nsta Conn Brag Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *BasicRateGroup* failure.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag failureCause (failCause)

Access	Read only
Description	This attribute indicates the cause for a *Brag* failure. The failure cause messages are: ***serviceChanNotReady*** - this failure cause message occurs if the TDM connection is not present. ***atmConnectionNotReady*** - the ATM *Lp* is down, or waiting for it to establish communication. ***operatorLock*** - this failure message occurs when a dependent component is locked by the operator. ***internalError*** - an internal error, which can not be determined has occurred. ***outOfResource*** - not enough hardware resource to handle current capacity. ***vspNotReady*** - the VSP card is down, or waiting for it to establish communication. ***activating*** - component creation is currently in progress. ***farEndFailure*** - A far end failure has occurred that has been reported locally. ***none*** - no failure.
Mib	Nsta
Values	none serviceChanNotReady atmConnectionNotReady operatorLock internalError outOfResource vspNotReady activating farEndFailure
Default	none

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ATTRIBUTE Nsta Conn Brag **tdmResponse (tRsp)**

Access	Read only
Description	This attribute indicates the current response to ATM failures. The possible values are: ***tc*** - trunk condition is transmitted in the TDM egress direction. ***ais*** - AIS is transmitted in the TDM egress direction. ***unknown*** - there is an error condition which can not be determined. ***none*** - there are currently no ATM failures. ***rai*** - RAI is transmitted in the TDM egress direction.
Mib	Nsta
Values	tc ais unknown none rai
Default	none

GROUP Nsta Conn Brag **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	Nsta
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Conn Brag operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Nsta
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Conn Brag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Nsta
Values	idle active (activ) busy
Default	idle

COMPONENT Nsta Conn Brag ChannelAssocSignalingTransport (Cast)

Groups	GROUP Nsta Conn Brag Cast Provisioned (Prov) GROUP Nsta Conn Brag Cast Operational (Oper)

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Scope	Device
Description	*Nsta/n Conn/n Brag/n ChannelAssocSignalingTransport* This optional component handles the transport of the Channel Associated Signaling (CAS) for the *BasicRateGroup*. When a *Cast* component is provisioned beneath a *Brag*, CAS signaling bits for all timeslots in the group are transported within AAL2 packets via the *Brag*'s ATM connection. This component is mutually exclusive with the *CommonChannelSignalingTransport (Ccst*) component.
Mib	Nsta
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Brag Cast Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *ChannelAssocSignalingTransport* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Cast casMonitoring (casMonitor)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether or not the CAS signaling bits for the timeslots in the group will be monitored. If *casMonitoring* is ***disabled*** then idle channel suppression will not be performed.
Mib	Nsta
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Conn Brag Cast signalingBits (sigBits)

Access	Read and write
Criticality	Process
Description	This attributes specifies whether AB or ABCD signaling is used.
Mib	Nsta
Values	AB ABCD

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Default	ABCD

ATTRIBUTE Nsta Conn Brag Cast **ingressIdle (iIdle)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the AB or ABCD bit pattern, received from the TDM interface direction, that is to be interpreted as an idle signal. For ***AB*** signaling the first two bits must be the same as the second two bits. If *casMonitoring* is ***disabled*** then the value set in this attribute is ignored. Each bit can either be 0, 1 or X, where X indicates no preference.
Mib	Nsta
Values	String (4, ASCII)
Default	0000

ATTRIBUTE Nsta Conn Brag Cast **egressIdle (eIdle)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the AB or ABCD bit pattern, received from the ATM interface direction, that is to be interpreted as an idle signal. For ***AB*** signaling the first two bits must be the same as the second two bits. If *casMonitoring* is ***disabled*** then the value set in this attribute is ignored. Each bit can either be 0, 1 or X, where X indicates no preference.
Mib	Nsta
Values	String (4, ASCII)
Default	0000

ATTRIBUTE Nsta Conn Brag Cast **disconnectTime (disTime)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the time in milliseconds for which the ingress idle and the egress idle pattern, provisioned in the *ingressIdle* and *egressIdle* attributes, must persist before they are interpreted as valid disconnect signals.

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If *casMonitoring* is ***disabled*** then the value set in this attribute is ignored.

The value of this attribute is rounded to the nearest 100 ms.

Mib	Nsta
Values	Decimal (100..30000)
Units	msec
Default	500

GROUP Nsta Conn Brag Cast **Operational (Oper)**

Properties	Operational
Description	This group contains the status information for the *ChannelAssociatedSignalingTransport* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Cast **signalingProcessingBlock (sigProcBlock)**

Access	Read only
Description	This attribute indicates which *ProcessingBlock* is processing the AAL2 trunk CAS signaling bits.
Mib	Nsta
Values	The name of the component
Default	No default

COMPONENT Nsta Conn Brag **CommonChannelSignalingTransport (Ccst)**

Groups	GROUP Nsta Conn Brag Ccst Provisioned (Prov) GROUP Nsta Conn Brag Ccst Aal2Statistics (Aal2Stats) GROUP Nsta Conn Brag Ccst Operational (Oper)
Scope	Device
Description	*Nsta/n Conn/n Brag/n CommonChannelSignalingTransport* This optional component handles the transport of D Channel data for the basic rate group. When a *Ccst* component is provisioned beneath a *Brag*, all valid HDLC frames within the channel smaller than 512 octets in size are transported transparently. The adaptation layer type used is determined by the value provisioned with the *aalType* attribute. Since D channel data include Common Channel signaling (CCS)

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	information this component is mutually exclusive with the *ChannelAssocSignalingTransport* (*Cast*) component.
Mib	Nsta
Opt. Subcomp.	COMPONENT Nsta Conn Brag Ccst NailedUpAdaptionPoint (Nap)
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Brag Ccst **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioning data for the *CommonChannelSignalingTransport* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Ccst **timeslot (tSlot)**

Access	Read and write
Criticality	Process
Description	This attribute specifies which timeslot in the *Chan* component linked to the parent *BasicRateGroup* transports Common Channel Signaling information. The value of ***autoConfigure*** indicates that the value should be determined by the type of TDM trunk, namely ***24*** for DS1 or ***16*** for E1.
Mib	Nsta
Values	Decimal (1..31) autoConfigure
Default	autoConfigure

ATTRIBUTE Nsta Conn Brag Ccst **ccsMonitoring (ccsMonitor)**

Access	Read and write
Criticality	Process
Description	This attribute specifies whether or not the CCS N-ISDN signaling for the timeslots in the group will be monitored. When this is ***enabled***, idle channel suppression is activated and layer 2 status reporting is enabled. Note that ***enabled*** is not supported on E1 CCS trunks.
Mib	Nsta

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Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Conn Brag Ccst **aalType**

Access	Read and write
Criticality	Process
Description	This attribute specifies which ATM Adaptation Layer type is used for Common Channel Signaling (CCS) information transport. If the AAL type provisioned is ***aal2*** then AAL2 will be used to transport CCS information and if the AAL type provisioned is ***aal5*** then AAL5 will be used to transport CCS information. When ***aal5*** is set then a different ATM VCC is used to transport CCS information from that of voice. When ***aal2*** is set then either the same or a separate ATM VCC can be used to transport the CCS information.
Mib	Nsta
Values	aal2 aal5
Default	aal5

GROUP Nsta Conn Brag Ccst **Aal2Statistics (Aal2Stats)**

Properties	Operational
Description	This group contains attributes with status information about AAL2 packets.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Ccst **aal2TxPackets (txPkt)**

Access	Read only
Description	This attribute counts the AAL2 packets transmitted since activation. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **aal2RxPackets (rxPkt)**

Access	Read only
Description	This attribute counts the AAL2 packets received since the component was activated, including misinserted packets. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **aal2LostPackets (lostPkt)**

Access	Read only
Description	This attribute counts the packets lost in the network prior to destination AAL2 packet header sequence number processing. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **aal2SequenceErrors (seqErr)**

Access	Read only
Description	This attribute counts the AAL2 packets received which contained an unexpected sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **aal2SizeErrors (sizeErr)**

Access	Read only
Description	This attribute counts the packets received with an unexpected AAL2 packet header length indicator. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Conn Brag Ccst **Operational (Oper)**

Properties	Operational
Description	This group contains the status information for the *CommonChannelSignalingTransport* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Ccst **layer2Status (l2Stat)**

Access	Read only
Description	This attribute indicates the status of CCS layer 2. When *ccsMonitoring* is ***enabled*** this attribute will indicate whether the layer 2 is ***up*** or ***down*** on

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	the signaling channel. When *ccsMonitoring* is ***disabled*** then the value of this attribute is set to ***notMonitored***.
Mib	Nsta
Values	up down notMonitored
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **hdlcTxFrames (txFrm)**

Access	Read only
Description	This attribute counts the number of High Level Data Link Control (HDLC) frames transmitted towards the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **hdlcRxFrames (rxFrm)**

Access	Read only
Description	This attribute counts the number of High Level Data Link Control (HDLC) frames received from the TDM interface since the component was activated. This count includes frames with FCS errors. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **hdlcErroredFrames (errorFrm)**

Access	Read only
Description	This attribute counts the number of High Level Data Link Control (HDLC) frames received from the TDM interface with FCS errors since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **atmRxMessages (atmRxMesg)**

Access	Read only

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Description	This attribute counts the number of signaling messages received from the ATM interface since the component was activated. This count includes messages with CRC errors. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **atmTxMessages (atmTxMesg)**

Access	Read only
Description	This attribute counts the number of signaling messages transmitted towards the ATM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **atmErroredMessages (atmErrorMesg)**

Access	Read only
Description	This attribute counts the number of signaling messages received from the ATM interface with CRC errors since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst **signalingProcessingBlock (sigProcBlock)**

Access	Read only
Description	This attribute indicates which *ProcessingBlock* is processing the AAL2 trunk's CCS information.
Mib	Nsta
Values	The name of the component
Default	No default

COMPONENT Nsta Conn Brag Ccst **NailedUpAdaptionPoint (Nap)**

Groups	GROUP Nsta Conn Brag Ccst Nap Provisioned (Prov)
Scope	Device
Description	*Nsta/n Conn/n NailedUpAdaptionPoint* *Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint*

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Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint
Nsta/n Vgs Control/n NailedUpAdaptionPoint
Nsta/n Vgs IpMConn NailedUpAdaptionPoint

This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*).

Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.

Mib: Nsta

Common Verbs: Help, List, Display, Add, DELete

GROUP Nsta Conn Brag Ccst Nap **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains provisioning data for a *Nap* component.

Mib: Nsta

ATTRIBUTE Nsta Conn Brag Ccst Nap **atmConnection (atmConn)**

Access: Read and write

Criticality: Process

Description: This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.

Mib: Nsta

Values: Link (Service, applicationName)

Default: No default

COMPONENT Nsta Conn Brag **BasicRateChannel (Brac)**

Instance: Decimal (8..255)

Groups:
GROUP Nsta Conn Brag Brac OsiState (State)
GROUP Nsta Conn Brag Brac Operational (Oper)
GROUP Nsta Conn Brag Brac Aal2Statistics (Aal2Stats)
GROUP Nsta Conn Brag Brac BufferStatistics (Stats)

Scope: Device

Description: *Nsta/n Conn/n Brag/n BasicRateChannel/<CID>*

This dynamic component represents an individual AAL2 channel within an ATM connection. It contains operational information on the current state of

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	the AAL2 channel, including which services provisioned for the *Brag* are currently enabled for this particular channel. The channel ID is selected from the *cidList* defined in the parent *Brag* component.
Mib	Nsta
Dyn. Subcomp.	COMPONENT Nsta Conn Brag Brac ChannelAssocSignalingStatistics (CasStats)
Common Verbs	Help List Display

GROUP Nsta Conn Brag Brac OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Brac adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Nsta
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Nsta Conn Brag Brac **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Nsta
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Conn Brag Brac **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Nsta
Values	idle active (activ) busy
Default	idle

GROUP Nsta Conn Brag Brac **Operational (Oper)**

Properties	Operational
Description	This group contains status information about the *BasicRateChannel*.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Brac **timeslots (tSlots)**

Access	Read only
Description	This attribute indicates the timeslots carried within the *Brac* on the AAL2 connection.

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Mib	Nsta
Set of	Decimal (1..31)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **packetLossStatus (pktStat)**

Access	Read only
Description	This attribute indicates packet loss status. The possible values are: ***loss*** - a state change notification is sent when a buffer underflow condition persists for the period defined by the *Brag* component *packetLossIntegrationPeriod* attribute. ***noLoss*** - the buffer underflow condition is absent for the period defined by the *Brag* component *packetLossClearPeriod* attribute. ***notApplicable*** - the connection is not established.
Mib	Nsta
Values	noLoss loss notApplicable
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **echoCancellationStatus (eCanStat)**

Access	Read only
Description	This attribute indicates the status of echo cancellation. The possible values are: ***active*** - echo cancellation is currently being performed. ***inactive*** - echo cancellation is not currently being performed. ***disabled*** - the *echoCancellation* attribute in the *Brag* component is set to ***disabled***. ***notApplicable*** - the connection is not established.
Mib	Nsta
Values	active inactive disabled notApplicable
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **faxIdleSuppressionStatus (faxStat)**

Access	Read only
Description	This attribute indicates the status of fax idle suppression. The possible values are: ***disabled*** - the *faxIdleSuppression* attribute in the *Brag* component is set to ***disabled***, or if the call using this *Brac* is not a fax call. If the *faxIdleSuppression* attribute in the *Brag* component is set to ***enabled***

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and the call using this *Brac* is a fax call then it is set to ***active*** if fax idle suppression is currently being performed, so there is a fax idle period in the ingress direction. Otherwise it is set to ***inactive*** if fax idle suppression is not currently being performed, so there is a fax active period in the ingress direction. It displays ***notApplicable*** when the connection is not established and the *callStatus* attribute is set to ***idle***.

Mib — Nsta

Values
active
inactive
disabled
notApplicable

Default — No default

ATTRIBUTE Nsta Conn Brag Brac silenceSuppressionStatus (silStat)

Access — Read only

Description

This attribute indicates the status of silence suppression.
It is set to ***disabled*** if the *silenceSuppression* attribute in the *Brag* component is set to ***disabled***, or if the call using this *Brac* is not a voice call.
It is set to ***active*** if the *silenceSuppression* attribute in the *Brag* component is set to ***enabled*** and the call using this *Brac* is a voice call.
If the *silenceSuppression* attribute in the *Brag* component is set to ***onCongestion*** and the call using this *Brac* is a voice call then it is set to ***active*** if silence suppression feature is currently active for this *Brac*. Otherwise it is set to ***inactive***.
When this attribute is set to ***active*** voice packets will not be transmitted towards ATM network during silence periods. It displays ***notApplicable*** when the connection is not established and the *callStatus* attribute is set to ***idle***.

Mib — Nsta

Values
active
inactive
disabled
notApplicable

Default — No default

ATTRIBUTE Nsta Conn Brag Brac callStatus (callStat)

Access — Read only

Description

This attribute indicates the status of this AAL2 channel.
It displays ***idle*** when the connection is not established or to ***ingressDisabled*** during the periods of TDM faults.
If there is a call using this *Brac* this attribute specifies the type of the call.
If there is a call using this *Brag* of a type other than ***voice***, ***voiceBandData***, ***voiceBandDataViolating***, ***clearChannelData*** or ***clearChannelDataViolating***, then this attribute is set to ***active.***

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	The value ***notMonitoring*** is no longer supported.
Mib	Nsta
Values	idle active notMonitoring ingressDisabled voice voiceBandData (vbd) voiceBandDataViolating (vbdv) clearChannelData (ccd) clearChannelDataViolating (ccdv)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac currentEncoding (coding)

Access	Read only
Description	This attribute indicates the encoding algorithm currently in use. It displays ***notApplicable*** when the connection is not established.
Mib	Nsta
Values	32kG726 24kG726 16kG726 notApplicable 64kG711MuLaw 64kG711ALaw 64kClearChannelData 8kG729AB
Default	No default

ATTRIBUTE Nsta Conn Brag Brac voiceProcessingBlocks (vpBlocks)

Access	Read only
Description	This attribute indicates which *Lp/n Vsp ProcessingBlock* components are processing the data for this *Brac*.
Mib	Nsta
List of	The name of the component
Default	No default

GROUP Nsta Conn Brag Brac Aal2Statistics (Aal2Stats)

Properties	Operational
Description	This group contains attributes with status information about AAL2 packets.
Mib	Nsta

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ATTRIBUTE Nsta Conn Brag Brac **aal2TxPackets (txPkt)**

Access	Read only
Description	This attribute counts the AAL2 packets transmitted since activation. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **aal2RxPackets (rxPkt)**

Access	Read only
Description	This attribute counts the AAL2 packets received since the component was activated, including misinserted packets. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **aal2LostPackets (lostPkt)**

Access	Read only
Description	This attribute counts the packets lost in the network prior to destination AAL2 packet header sequence number processing. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **aal2SequenceErrors (seqErr)**

Access	Read only
Description	This attribute counts the AAL2 packets received which contained an unexpected sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **aal2SizeErrors (sizeErr)**

Access	Read only

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Description	This attribute counts the packets received with an unexpected AAL2 packet header length indicator. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Conn Brag Brac **BufferStatistics (Stats)**

Properties	Operational
Description	This group contains statistical information on the *BasicRateChannel*.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Brac **aal2BufferUnderflows (buffUFlow)**

Access	Read only
Description	This attribute counts the times the AAL2 reassembly buffer has underflowed. Buffer underflow may occur due to an ATM link failure, or excessive packet delay variation or due to AAL2 common part sublayer failure. This can be resolved by checking the operational condition of the ATM interface, increasing the *pdvt* attribute of the *Brag* component or checking the provisioning in the remote inter-working function. The counter wraps when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **aal2BufferOverflows (buffOFlow)**

Access	Read only
Description	This attribute counts the times the AAL2 reassembly buffer has overflowed. Buffer underflow may occur due to an ATM link failure, small buffer size, or due to AAL2 common part sublayer failure. This can be resolved by checking the operational condition of the ATM interface, increasing the *bufferSize* attribute of the *Brag* component or checking the provisioning in the remote inter-working function. The counter wraps when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac **aal2ReassembledPackets (reassPkt)**

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Access	Read only
Description	This attribute counts the packets played out on to the TDM service interface. This count excludes received packets that were discarded for any reason (for example, packets that were declared misinserted or discarded while the reassembler was waiting to achieve synchronization). The counter wraps when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Conn Brag Brac **ChannelAssocSignalingStatistics (CasStats)**

Groups	GROUP Nsta Conn Brag Brac CasStats Aal2Statistics (Aal2Stats)
Scope	Device
Description	*Nsta/n Conn/n Brag/n Brac/n ChannelAssocSignalingStatistics* This dynamic component provides Channel Associated Signaling (CAS) statistics for an individual channel. When a *Cast* component is provisioned beneath a *Brag*, an instance of this component will appear under each of the *Brag*'s *Brac*s.
Mib	Nsta
Common Verbs	Help List Display LOCK Unlock

GROUP Nsta Conn Brag Brac CasStats **Aal2Statistics (Aal2Stats)**

Properties	Operational
Description	This group contains attributes with status information about AAL2 packets.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Brac CasStats **aal2TxPackets (txPkt)**

Access	Read only
Description	This attribute counts the AAL2 packets transmitted since activation. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac CasStats **aal2RxPackets (rxPkt)**

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Access	Read only
Description	This attribute counts the AAL2 packets received since the component was activated, including misinserted packets. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac CasStats **aal2LostPackets (lostPkt)**

Access	Read only
Description	This attribute counts the packets lost in the network prior to destination AAL2 packet header sequence number processing. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac CasStats **aal2SequenceErrors (seqErr)**

Access	Read only
Description	This attribute counts the AAL2 packets received which contained an unexpected sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac CasStats **aal2SizeErrors (sizeErr)**

Access	Read only
Description	This attribute counts the packets received with an unexpected AAL2 packet header length indicator. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Conn Brag **PassiveAccessPoint (Pap)**

Groups	GROUP Nsta Conn Brag Pap Provisioned (Prov) GROUP Nsta Conn Brag Pap Operational (Oper)
Scope	Device

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Description	*Nsta/n Conn/n Brag/n PassiveAccessPoint* This component defines ATM SVC terminating information pertinent to an AAL1 CES connection used by a *Brag* component.
Mib	Nsta
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Brag Pap Provisioned (Prov)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Pap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the expected remote address information for an incoming connection setup request. If the *expectedRemoteAddress* attribute is empty, the component processes connection requests from any remote address. If the *expectedRemoteAddress* attribute is 40 characters long, the remote address must match exactly to be accepted. If the *expectedRemoteAddress* attribute is less than 40 characters long, the remote address must match the value of the *expectedRemoteAddress* attribute to be accepted.
Mib	Nsta
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Conn Brag Pap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the

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nodePrefix is provided.

If the *nodePrefix* attribute of the *ModuleData* component has not been provisioned, the *localAddress* attribute will be empty. In that case the operator must either provision a value for the *localAddress* attribute, or provision a value for the *nodePrefix* attribute and then delete and re-add this *Pap* component.

Mib	Nsta
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Nsta Conn Brag Pap **Operational (Oper)**

Properties	Operational
Description	This group indicates the status information for the *PassiveAccessPoint* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Pap **svcStatus (status)**

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.
Mib	Nsta
Values	connecting connected idle
Default	No default

ATTRIBUTE Nsta Conn Brag Pap **remoteAddress (address)**

Access	Read only
Description	This attribute indicates the ATM address of the remote AAL1 CES endpoint. If a connection is not established, the attribute value is blank.

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Mib	Nsta
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Nsta Conn Brag Pap remoteChannelDetail (channelDetail)

Access	Read only
Description	This attribute indicates the configuration of the remote AAL1 CES endpoint. If a connection is not established, the attribute value is blank.
Mib	Nsta
Values	String (0..81, ASCII)
Default	No default

ATTRIBUTE Nsta Conn Brag Pap remoteChannelStatus (rCStatus)

Access	Read only
Description	This attribute indicates the operational status of the remote AAL1 CES endpoint. The ***up*** status indicates that there are no TDM ingress fault conditions. The ***down*** status indicates the TDM interface has detected an ingress fault condition. The ***rai*** status indicates an ingress RAI at the TDM interface. The ***unknown*** status indicates the AAL1 CES connection is not present.
Mib	Nsta
Values	up down rai unknown
Default	No default

ATTRIBUTE Nsta Conn Brag Pap lastTearDownCause

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. Under initial condition, a zero cause code is displayed.
Mib	Nsta
Values	Decimal (0..255)

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Default	No default

ATTRIBUTE Nsta Conn Brag Pap **lastTearDownDiagnostic**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element. A diagnostic code is always accompanied by the cause code. Note that the call must have been successfully established before being torn down. Under initial condition, the value is empty.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Conn Brag **AtmConnection (AtmCon)**

Groups	GROUP Nsta Conn Brag AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Nsta
Common Verbs	Help List Display

GROUP Nsta Conn Brag AtmCon **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag AtmCon **nextHop**

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Nsta
Values	The name of the component
Default	No default

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COMPONENT Nsta Conn NailedUpAdaptionPoint (Nap)

Groups	GROUP Nsta Conn Nap Provisioned (Prov)
Scope	Device
Description	*Nsta/n Conn/n NailedUpAdaptionPoint* *Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint* *Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint* *Nsta/n Vgs Control/n NailedUpAdaptionPoint* *Nsta/n Vgs IpMConn NailedUpAdaptionPoint* This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*). Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.
Mib	Nsta
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *Nap* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Nap atmConnection (atmConn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.
Mib	Nsta
Values	Link (Service, applicationName)
Default	No default

COMPONENT Nsta Conn ActiveAccessPoint (Aap)

Groups	GROUP Nsta Conn Aap Provisioned (Prov) GROUP Nsta Conn Aap AapAddressessProv (AapAddrProv) GROUP Nsta Conn Aap Operational (Oper) GROUP Nsta Conn Aap AccessPointOper (ApOper)

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Scope	Device
Description	*Nsta/n Vgs Control/n ActiveAccessPoint* *Nsta/n Vgs IpMConn ActiveAccessPoint* *Nsta/n Conn/n ActiveAccessPoint* This component defines ATM SVC originating and terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information. An *Aap* is responsible for maintaining calls to a remote address in the ATM network.
Mib	Nsta
Common Verbs	Help List Display Add DELete

VERB Restart **Nsta Conn Aap**

Impact	Service
Description	*Restart Nsta/n Vgs Control/n ActiveAccessPoint* *Restart Nsta/n Vgs IpMConn ActiveAccessPoint* *Restart Nsta/n Conn/n ActiveAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP **Nsta Conn Aap** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioning data for the *Aap* component.
Mib	Nsta

ATTRIBUTE **Nsta Conn Aap** **atmServiceCategory (service)**

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Access	Read and write
Criticality	Component
Description	This attribute specified the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections. If the parent of the *Aap* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *Aap* is an *IpMConn* or *Conn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.
Mib	Nsta
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Conn Aap peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Nsta

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Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Conn Aap **sustainedCellRate (scr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Nsta
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Conn Aap **maximumBurstSize (mbs)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Nsta
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Conn Aap **retryLimit (limit)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.

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Mib	Nsta
Values	Decimal (0..65535)
Default	0

GROUP Nsta Conn Aap AapAddressessProv (AapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Nsta

ATTRIBUTE Nsta Conn Aap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming setup request. If *expectedRemoteAddress* is not empty, only matching addresses in incoming setup are considered for acceptance. If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, connection requests are accepted from any remote address.
Mib	Nsta
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Conn Aap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Nsta
Values	String (1..44, AESANsapAddress)

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Default	No default

ATTRIBUTE Nsta Conn Aap addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* component in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to setup a connection to the first address in the list and then continues as before.
Mib	Nsta
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Conn Aap Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Aap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has

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	just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.
Mib	Nsta
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Conn Aap lastSetupFailureCause (failCause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification. If no call setup attempts have failed, this attribute has a value of 0.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn Aap lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If no call setup attempts have failed, this attribute is an empty string.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

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ATTRIBUTE Nsta Conn Aap retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running this attribute has a value of 0.
Mib	Nsta
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Conn Aap retryFailures (failures)

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.
Mib	Nsta
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Conn Aap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Nsta

ATTRIBUTE Nsta Conn Aap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Nsta
Values	String (7..40, ASCII)
Default	No default

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ATTRIBUTE Nsta Conn Aap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn Aap lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Conn PassiveAccessPoint (Pap)

Groups	GROUP Nsta Conn Pap PapAddressesProv (PapAddrProv) GROUP Nsta Conn Pap Operational (Oper) GROUP Nsta Conn Pap AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n PassiveAccessPoint* *Nsta/n Vgs IpMConn/n PassiveAccessPoint* *Nsta/n Conn/n PassiveAccessPoint* This component defines ATM SVC terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Nsta
Common Verbs	Help List Display Add DELete

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GROUP Nsta Conn Pap **PapAddressesProv (PapAddrProv)**

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Nsta

ATTRIBUTE Nsta Conn Pap **expectedRemoteAddress (expectedAddr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming connection setup request. If *expectedRemoteAddress* is not empty, only matching connections are considered for acceptance. If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, the component processes connection requests from any remote address.
Mib	Nsta
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Conn Pap **localAddress (localAddr)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the ATM address of the access point. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default can not be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Nsta
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Nsta Conn Pap **Operational (Oper)**

Properties	Operational

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Description	This group contains status information common to the *PassiveAccessPoint* and *AddresslessPassiveAccessPoint* components.
Mib	Nsta

ATTRIBUTE Nsta Conn Pap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.
Mib	Nsta
Values	initializing connecting connected idle failed
Default	No default

GROUP Nsta Conn Pap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Nsta

ATTRIBUTE Nsta Conn Pap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the

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remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.

Mib	Nsta
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Conn Pap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn Pap lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Conn SpvcAccessPoint (SpvcAp)

Groups	GROUP Nsta Conn SpvcAp Provisioned (Prov) GROUP Nsta Conn SpvcAp SpvcApAddressessProv (SpvcApAddrProv) GROUP Nsta Conn SpvcAp Operational (Oper) GROUP Nsta Conn SpvcAp AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n SpvcAccessPoint* *Nsta/n Vgs IpMConn SpvcAccessPoint* *Nsta/n Conn/n SpvcAccessPoint* This component defines ATM SPVC originating information pertinent to

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those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.

Mib Nsta

Common Verbs
Help
List
Display
Add
DELete

VERB Restart **Nsta Conn SpvcAp**

Impact Service

Description *Restart Nsta/n Vgs Control/n SpvcAccessPoint*
Restart Nsta/n Vgs IpMConn SpvcAccessPoint
Restart Nsta/n Conn/n SpvcAccessPoint

This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute.

This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached.

This command may also be used when a connection has been established, in which case the connection is released first.

This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP **Nsta Conn SpvcAp** **Provisioned (Prov)**

Properties Provisioned

Description This group contains provisioning data for the *SpvcAp* component.

Mib Nsta

ATTRIBUTE **Nsta Conn SpvcAp** **atmServiceCategory (service)**

Access Read and write

Criticality Component

Description This attribute specifies the ATM service category for SVCs.

The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered

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appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *SpvcAp* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *SpvcAp* is an *IpMConn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Nsta
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Nsta
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Conn SpvcAp sustainedCellRate (scr)

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Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Nsta
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Conn SpvcAp **maximumBurstSize (mbs)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Nsta
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Conn SpvcAp **retryLimit (limit)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Nsta
Values	Decimal (0..65535)
Default	0

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GROUP Nsta Conn SpvcAp **SpvcApAddressessProv (SpvcApAddrProv)**

Properties	Provisioned
Description	This group contains NSAP address provisioning data for the *SpvcAp* component.
Mib	Nsta

ATTRIBUTE Nsta Conn SpvcAp **localAddress (localAddr)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Nsta
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp **remoteVpiVci (rVpiVci)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for an *SpvcAp* component.
Mib	Nsta
Values	Integer Sequence (0..255; 1..65535)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp **addressToCall (addrToCall)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* application in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses.

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The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to set up a connection to the first address in the list and then continues as before.

Mib	Nsta
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Conn SpvcAp Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *SpvcAp* component.
Mib	Nsta

ATTRIBUTE Nsta Conn SpvcAp svcStatus (status)

Access	Read only
Description	This attribute specifies the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* for consecutive connection set up attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.
Mib	Nsta

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Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Conn SpvcAp lastSetupFailureCause (failCause)

Access	Read only
Description	This attribute contains the cause code in the last call release message following an unsuccessful call set up attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute contains the diagnostic code in the last call release message following an unsuccessful call set up attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches ***0*** an attempt will be made to establish the connection. When the timer is not running a value of ***0*** is returned.
Mib	Nsta
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Conn SpvcAp retryFailures (failures)

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Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to ***0*** whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to ***0*** when the maximum value is exceeded.
Mib	Nsta
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Conn SpvcAp **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Nsta

ATTRIBUTE Nsta Conn SpvcAp **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Nsta
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp **lastTearDownDiagnostic (diag)**

Access	Read only

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Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Conn AtmConnection (AtmCon)

Groups	GROUP Nsta Conn AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Nsta
Common Verbs	Help List Display

GROUP Nsta Conn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Nsta

ATTRIBUTE Nsta Conn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Nsta
Values	The name of the component
Default	No default

COMPONENT Nsta VoiceGateway (Vgs)

Groups	GROUP Nsta Vgs CustomerIdentifierData (CidData) GROUP Nsta Vgs Provisioned (Prov) GROUP Nsta Vgs Operational (Oper) GROUP Nsta Vgs Statistics (Stats)

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Scope	Device
Description	*Nsta/n VoiceGateway* The *Vgs* component provides an operational and maintenance interface for switched voice features.
Mib	Vgs
Subcomponents	COMPONENT Nsta Vgs PacketNetworkProfile (PktProf)
Opt. Subcomp.	COMPONENT Nsta Vgs BasicRateGroup (Brag) COMPONENT Nsta Vgs ControlConnection (Ctrl) COMPONENT Nsta Vgs AtmTrunkConnection (AtmTConn) COMPONENT Nsta Vgs IpMediaStreamConnection (IpMConn) COMPONENT Nsta Vgs SimpleGatewayCtrlProt (Sgcp) COMPONENT Nsta Vgs VoiceCallAdmissionControl (VCac) COMPONENT Nsta Vgs IsdnUserAdaption (Iua) COMPONENT Nsta Vgs LocalAnnouncements COMPONENT Nsta Vgs DigitCollection COMPONENT Nsta Vgs Aal2SvcService (Aal2Svc) COMPONENT Nsta Vgs AmrBasicRateGroup (AmrBrag) COMPONENT Nsta Vgs CsdBasicRateGroup (CsdBrag) COMPONENT Nsta Vgs V5UserAdaption (V5ua) COMPONENT Nsta Vgs BasicRateGroupServer (BragS) COMPONENT Nsta Vgs FaxRelayOverIp (FaxR) COMPONENT Nsta Vgs DebugIpAccess (DbgAccess) COMPONENT Nsta Vgs IpInterface (IpIf) COMPONENT Nsta Vgs MediaGatewayController (Mgc) COMPONENT Nsta Vgs H248 COMPONENT Nsta Vgs TdmAccessGroup (Tag) COMPONENT Nsta Vgs TdmNetworkProfile (TProf) COMPONENT Nsta Vgs Q921 COMPONENT Nsta Vgs Q921Profile (Q921Prof) COMPONENT Nsta Vgs TimeslotRelay (Tr) COMPONENT Nsta Vgs ChannelAssocSignalingDefinition (CasDefn) COMPONENT Nsta Vgs Mtp2Profile COMPONENT Nsta Vgs Mtp2 COMPONENT Nsta Vgs M2ua COMPONENT Nsta Vgs V5Link (V5Link) COMPONENT Nsta Vgs V5Profile (V5Prof) COMPONENT Nsta Vgs SgV5UserAdaptation (SgV5)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs CustomerIdentifierData (CidData)

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Vgs

ATTRIBUTE Nsta Vgs customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Vgs
Values	Decimal (0; 1..8191)
Default	0

GROUP Nsta Vgs Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Vgs* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs gatewayAtmAddress (addr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM address of this gateway. This address is used for identifying this gateway to remote gateways. A change in the value of this attribute causes all current calls to be dropped. If the *nodePrefix* attribute has been provisioned in the *ModuleData* component, a default value for *gatewayAtmAddress* will be generated by the system, otherwise the *gatewayAtmAddress* will default to an empty string.

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This attribute is only relevant when one of the following features is provisioned:

vgsAtm
vgsAtmDc
vgsAtmG729

Mib — Vgs

Values — String (0..44, AESANsapAddress)

Default — No default

ATTRIBUTE Nsta Vgs hostname (name)

Access — Read and write

Criticality — Component

Description — This attribute specifies the hostname to identify this gateway. The value provisioned for this gateway should match the value provisioned in its associated controller.

This attribute must be unique within the group of gateways controlled by the controller. A change in the value of this attribute causes all current calls to be dropped.

This attribute must have a maximum of fifteen characters if a *Vgcp* component exists under the *Vgs*.

Mib — Vgs

Values — String (1..255, ASCII)

Default — No default

ATTRIBUTE Nsta Vgs defaultPacketLogLaw (muALaw)

Access — Read and write

Description — This attribute specifies whether the digitizing scheme is mu law or A law.

For Voice over IP, this attribute defines the log law to use at call setup. For Voice over ATM, this attribute defines a default which can be overridden by the *packetLogLaw* attribute of individual *AtmTConn* components at call setup. This attribute may be changed without impacting existing calls.

The value provisioned can be overridden by per call values signaled by the controller in the CRCX (create connection) and MDCX (modify connection) messages.

There is no relationship between this attribute and the *tdmLogLaw* attribute of the *Brag* component.

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	This attribute must be set to ***useAsProfile*** for a ***VoIP*** feature provisioned in the ***featureList*** and to either ***ALaw*** or ***MuLaw*** for a ***VoATM*** feature.
Mib	Vgs
Values	muLaw aLaw useAsProfile
Default	aLaw

ATTRIBUTE Nsta Vgs defaultIpMediaDsf (defDsf)

Access	Read and write
Description	This attribute specifies the default Differentiated Service Field (DSF) value for all voice packets transmitted on all *IpMConn* components. This attribute is ignored by *CtrlConn* and *AtmTConn* components.
Mib	Vgs
Values	Decimal (0..63)
Default	46

ATTRIBUTE Nsta Vgs remoteMfDeviceIpAddress (remMfIp)

Access	Read and write
Description	This attribute specifies the IP address of an associated Remote SGCP/MF IWF to which SGCP commands (against endpoints provisioned as MF) will be relayed. This attribute is only applicable to *IpMConn* components and is ignored by *CtrlConn* and *AtmTConn* components.
Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs remoteMfDeviceUdpPort (remMfUdp)

Access	Read and write
Description	This attribute specifies the UDP port of an associated Remote SGCP/MF IWF to which SGCP commands (against endpoints provisioned as MF) will be relayed. This attribute is only applicable to *IpMConn* components and is ignored by *CtrlConn* and *AtmTConn* components.
Mib	Vgs
Values	Decimal (1..65535)
Default	2427

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ATTRIBUTE Nsta Vgs defaultToneset (defTone)

Access	Read and write
Description	This attribute specifies the default tone set for all *Brag* and *Tag* subcomponents. This value can be overwritten by the *toneset* attribute in the *Brag* and *Tag* components. The possible values are: ***argentina*** - Use the tone set for Argentina. ***australia -*** Use the tone set for Australia. ***austria*** - Use the tone set for Austria. ***belgium*** - Use the tone set for Belgium. ***bolivia*** - Use the tone set for Bolivia. ***brazil -*** Use the tone set for Brazil. ***brazilCustom1 -*** Use the tone set for BrazilCustom1. ***canadaUsa*** - Use the tone set for Canada and the USA. ***chile*** - Use the tone set for Chile. ***china*** - Use the tone set for China. ***custom1*** - Use the tone set patched for Custom1. ***custom2*** - Use the tone set patched for Custom2. ***custom3*** - Use the tone set patched for Custom3. ***custom4*** - Use the tone set patched for Custom4. ***custom5*** - Use the tone set patched for Custom5. ***czech*** - Use the tone set for the Czech Republic. ***denmark*** - Use the tone set for Denmark. ***finland*** - Use the tone set for Finland. ***france -*** Use the tone set for France. ***germany*** - Use the tone set for Germany. ***greece*** - Use the tone set for Greece. ***hongKong*** - Use the tone set for Hong Kong. ***hungary*** - Use the tone set for Hungary. ***india*** - Use the tone set for India. ***ireland*** - Use the tone set for Ireland. ***israel*** - Use the tone set for Israel. ***italy -*** Use the tone set for Italy. ***japan*** - Use the tone set for Japan. ***jfpt*** - Use the tone set for Japanese Fire and Police trunks. ***korea*** - Use the tone set for Korea. ***malaysia*** - Use the tone set for Malaysia. ***mexico*** - Use the tone set for Mexico. ***mexicoCustom1*** - Use the tone set for MexicoCustom1. ***netherlands*** - Use the tone set for The Netherlands. ***newZealand*** - Use the tone set for New Zealand. ***norway*** - Use the tone set for Norway. ***pakistan*** - Use the tone set for Pakistan. ***panama*** - Use the tone set for Panama. ***philippines*** - Use the tone set for Philippines. ***poland*** - Use the tone set for Poland.

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portugal - Use the tone set for Portugal.
romania - Use the tone set for Romania.
russia - Use the tone set for Russia.
singapore - Use the tone set for Singapore.
southafrica - Use the tone set for South Africa.
spain - Use the tone set for Spain.
sweden - Use the tone set for Sweden.
switzerland - Use the tone set for Switzerland.
taiwan- Use the tone set for Taiwan.
thailand - Use the tone set for Thailand.
turkey - Use the tone set for Turkey.
uk - Use the tone set for the UK.
venezuela - Use the tone set for Venezuela.

Mib Vgs

Values
canadaUsa
spain
uk
france
portugal
belgium
germany
netherlands
sweden
austria
italy
switzerland
australia
brazil
ireland
mexico
israel
romania
turkey
czech
china
taiwan
korea
japan
panama
argentina
greece
poland
newZealand
singapore
venezuela
chile
hongKong
malaysia
philippines

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thailand
india
hungary
russia
jfpt
custom1
custom2
custom3
custom4
custom5
pakistan
mexicoCustom1
brazilCustom1
norway
finland
denmark
bolivia
southafrica

Default canadaUsa

GROUP Nsta Vgs Operational (Oper)

Properties Operational

Description This group contains operational data for the *Nsta Vgs* component.

Mib Vgs

ATTRIBUTE Nsta Vgs activeConnections (connActive)

Access Read only

Description This attribute indicates the current number of active media connections.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs connectionsSetup (connSetup)

Access Read only

Description This attribute counts the media connections successfully established by this gateway *Vgs* component and acknowledged to the Controller.

The value wraps to ***0*** when the maximum value is exceeded.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

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ATTRIBUTE Nsta Vgs disabledAtmTrunks (disTrunks)

Access	Read only
Description	This attribute indicates the current number of *AtmTConn* components under the *Vgs* that are disabled. This attribute is only applicable when the ***vgsAtm***, ***vgsAtmDc*** or ***vgsAtmG729*** feature is provisioned. If any other feature is provisioned, this attribute is filtered.
Mib	Vgs
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Nsta Vgs remoteMfDeviceStatus (remMfStatus)

Access	Read only
Description	This attribute indicates the status of the connection to the remote MF signaling device. The value ***connected*** indicates that the connection is enabled. The value ***notConnected*** indicates that the connection is disabled.
Mib	Vgs
Values	connected notConnected
Default	notConnected

ATTRIBUTE Nsta Vgs faxConnectionsSetup (faxSetup)

Access	Read only
Description	This attribute counts the connections which are identified as carrying fax modem traffic. The counter wraps to ***0*** when it reaches its maximum value. The counter will also be reset to ***0*** if the *Vsp* component is locked. This attribute is filtered on the ***12mVspAal*** and ***Vsp2*** cards.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs nonFaxVbdConnectionsSetup (vbdSetup)

Access	Read only
Description	This attribute counts the connections which are identified as carrying non fax modem traffic. The counter wraps to ***0*** when it reaches its maximum

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value. The counter will also be reset to ***0*** if the *Vsp* component is locked.

This attribute is filtered on the ***12mVspAal*** and ***Vsp2*** cards.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs emergencyCalls (emCalls)

Access	Read only
Description	This attribute counts the emergency calls currently in progress. The controller determines whether a call is for emergency purposes, and instructs the gateway via the control protocol. This attribute is only relevant if the H.248 protocol is in use. If any other protocol is used, this attribute is filtered.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs congestedSeconds (congSec)

Access	Read only
Description	This attribute counts the seconds that new media connection requests have been rejected because the Gateway was busy. The counter wraps to ***0*** when it exceeds the maximum value. This attribute is filtered on the ***12mVspAal*** card.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs overloadRejectedCommands (olRejCom)

Access	Read only
Description	This attribute counts the control protocol commands that were rejected due to input message buffer overload. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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GROUP Nsta Vgs Statistics (Stats)

Properties	Operational
Description	This group stores the connection statistics for the *VGS* component. Note these attributes are filtered based on VSP card type as they are not applicable on ***12mVspAal*** and ***Vsp2*** cards.
Mib	Vgs

ATTRIBUTE Nsta Vgs connectionsLostToPacketNwLoss (clPkt)

Access	Read only
Description	This attribute counts the connections lost to Gateway-detectable network failures. This includes: - individual connection media integrity time-outs. - bulk connection loss due to *ATM VCC* failure or release or associated component deprovisioning. - bulk connection loss due to local IP media link failure or associated component deprovisioning.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs connectionsLostToTdmPortLoss (clTdm)

Access	Read only
Description	This attribute counts the connections lost to TDM port failure, internal failures or TDM port deletion since component creation. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs activeConnectionsAvg (connAvg)

Access	Read only
Description	This attribute counts the average number of connections over the time interval given by *Nsta/n Vgs timeInterval*.The values are sampled every 1 second.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs activeConnectionsMax (connMax)

Access	Read only
Description	This attribute counts the maximum number of connections at any point over the time interval given by *Nsta/n Vgs timeInterval.*
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs activeConnectionsMin (connMin)

Access	Read only
Description	This attribute counts the minimum number of connections at any point over the time interval given by *Nsta/n Vgs timeInterval*.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs timeInterval

Access	Read only
Description	This attribute indicates the number of minutes into the statistical sampling period for which *activeConnectionsAvg*, *activeConnectionsMin* and *activeConnectionsMax* are measured. As per any time interval attribute, this resets to 0 on the quarter hour.
Mib	Vgs
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Nsta Vgs evrcConnectionsSetup (evrcSetup)

Access	Read only
Description	This attribute counts the number of EVRC media connections successfully established by this gateway Vgs component.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs evrc0ConnectionsSetup (evrc0Setup)

Access	Read only

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Description	This attribute counts the number of EVRC0 (Header Free EVRC) media connections successfully stablished by this gateway Vgs component.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs trfoConnectionsSetup (trfoSetup)

Access	Read only
Description	This attribute counts the number of TrFO connections successfully established by this gateway Vgs component.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs connectionsLostToTrfoFailure (clTrfoFail)

Access	Read only
Description	This attribute counts the number of connections lost due to TrFO failure since component creation.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs BasicRateGroup (Brag)

Instance	Decimal (0..127)
Groups	GROUP Nsta Vgs Brag Provisioned (Prov) GROUP Nsta Vgs Brag OsiState (State) GROUP Nsta Vgs Brag Operational (Oper) GROUP Nsta Vgs Brag CommonOp (ComOp)
Scope	Device
Description	*Nsta/n Vgs BasicRateAccessGroup/n* This component represents a number of TDM connections from the Voice Services function processor to the TDM network. The TDM connections are all associated with the same TDM interface. This component defines default processing for all TDM connections. For each connection, this default processing may be overridden by the controller. The *V5Link* subcomponent is mutually exclusive of the

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AnnouncementLanguage subcomponent.

The *V5Link*, *Q921* and *Cas* subcomponents are mutually exclusive of each other.

Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs Brag UdpHdlcTransport (Uht) COMPONENT Nsta Vgs Brag AnnouncementLanguage COMPONENT Nsta Vgs Brag Q921 COMPONENT Nsta Vgs Brag V5Link (V5Link) COMPONENT Nsta Vgs Brag ChannelAssociatedSignaling (Cas)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Brag Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *BasicRateGroup* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag interfaceName (intName)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to a *Chan* component, which in turn specifies the timeslots for the *Brag*.
Mib	Vgs
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs Brag tdmLogLaw (muALaw)

Access	Read and write
Criticality	Component
Description	This attribute specifies the G711 *tdmLogLaw* to use on the TDM side of an NSTA trunk. If set to ***aLaw***, Alaw companding is used. If set to ***autoConfigured***, then the actual value used is derived from the facility, namely ***muLaw*** would be used for *DS1* trunks, while ***aLaw*** would

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be used by *E1* trunks.

For *E1* trunks, a value of ***muLaw*** is not recommended.

Mib: Vgs

Values:
muLaw
aLaw
autoConfigured

Default: autoConfigured

ATTRIBUTE Nsta Vgs Brag bufferSize (bufSize)

Access: Read and write

Criticality: Process

Description: This attribute specifies the capacity of the packet delay variation (PDV) buffer in milliseconds of data.

To ensure that PDV can be tolerated it is necessary to initialize the system with a reserve of information in the buffer used to reassemble data for transmission across the TDM network. The size of this reserve is defined by the *pdvt* and *bufferSize* attributes. The amount of data played out to the TDM network(in time equal to the value of the *pdvt* attribute*)* is equal to the size of the initialization reserve. There should be enough data in the reassembly buffer to allow transmission for a period of time defined by the *pdvt* attribute before buffer underflow due to the next delayed packet occurs.

If the ***VgsIp, VgsIpG729, VgsIpGe***, or ***VgsIpG729Ge*** feature have been provisioned the default *bufferSize* will be ***60ms*** otherwise the *bufferSize* will be ***50ms***.

The value should always be greater than two times the value of the *pdvt* attribute plus the maximum packet size, except on a ***2pGeMmSrVsp3*** card where it need only be greater than or equal to two times the *pdvt*. The maximum packet size is 20ms for ***VgsIp***, ***VgsIpG729*** and ***VgsIpG729Ge*** features and 10ms for all other features.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

This attribute has no effect if the *packetDelayVariationTolerance* attribute is set to ***adaptive***.

Mib: Vgs

Values:
Decimal (5..100)
sameAsProfile

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Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag packetDelayVariationTolerance (pdvt)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum packet arrival jitter in milliseconds that the reassembly process will tolerate in the packet stream without producing errors on the TDM interface. This attribute together with the *bufferSize* attribute, can be configured to optimize the jitter versus absolute delay tradeoff in various network configurations. The value should always be less than the value of the *bufferSize* attribute minus the maximum packet size divided by two, except on a ***2pGeMmSrVsp3*** card where it need only be less than or equal to the *bufferSize* divided by two. The maximum packet size is 20ms for ***VgsIp***, ***VgsIpG729, VgsIpGe*** and ***VgsIpG729Ge*** features and 10ms for all other features. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***. If set to ***adaptive***, the hardware attempts to minimise the absolute delay while allowing for the maximum packet arrival jitter encountered. This value is only supported on the following cards: ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3***, ***2pVS***.
Mib	Vgs
Values	Decimal (5..50) sameAsProfile adaptive
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag lossIntegrationPeriod (intPeriod)

Access	Read and write
Description	This attribute specifies the interval of time in seconds for which a loss of packet condition must persist before the corresponding call is dropped. A

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value of ***0*** specifies that packet loss integration is disabled and therefore call connections are not suspended after packet loss.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

Mib	Vgs
Values	Decimal (0..50) sameAsProfile
Units	seconds
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag ingressGain (iGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM ingress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs Brag egressGain (eGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM egress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs Brag echoCancellation (eCan)

Access	Read and write
Description	This attribute specifies whether echo cancellation is enabled or disabled. The value of this attribute will determine whether echo cancellation will be on or off when a 2100Hz tone is detected. Note that the gateway controller may override this attribute on a call by call

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basis to activate or deactivate echo cancellation**.**

g165Mode - Enables echo cancellation except when a 2100Hz tone with phase reversal is detected.

alwaysOn - Enables echo cancellation regardless of whether a 2100Hz tone is detected.

g164Mode - Disables echo cancellation only when a 2100Hz tone is detected, regardless of phase reversal.

disabled - Disables echo cancellation.

The values ***alwaysOn*** and ***g164Mode*** are not permitted on a ***2pGeMmSrVsp3*** card.

Mib	Vgs
Values	g165Mode disabled alwaysOn g164Mode
Default	g165Mode

ATTRIBUTE Nsta Vgs Brag minimumEchoReturnLoss (minEchoRetLoss)

Access	Read and write
Description	This attribute specifies the minimum echo return loss that can be expected on the line.
Mib	Vgs
Values	Decimal (0; 3; 6)
Units	dB
Default	6

ATTRIBUTE Nsta Vgs Brag echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read and write
Description	The attribute specifies whether comfort noise generation for the echo cancellation feature is enabled or disabled. This attribute has no effect if *echoCancellation* is ***disabled*** through provisioning or through 2100 Hz tone detection.
Mib	Vgs
Values	enabled disabled
Default	enabled

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ATTRIBUTE Nsta Vgs Brag defaultVoiceRate (defVRate)

Access	Read and write
Description	This attribute specifies the default coding algorithm to be used under normal conditions (when no 2100 Hz tone is detected). For each connection, this default coding algorithm can be overridden by the controller. When the VSP card type is ***2pGeMmSrVsp3*** or ***2pOC3ChSmIrVsp3***, and the ***vgsAtm*** or ***vgsAtmG729*** feature is provisioned, the value must be ***64kG711, 24kG726*** or ***32kG726***. For all other usages, the following restrictions apply: If the provisioned feature is ***vgsAtm*** or ***vgsAtmDc*** then either ***64kG711*** or ***32kG726*** may be provisioned. For the feature ***vgsIp*** or ***vgsIpGe*** only ***64kG711*** may be provisioned. For feature ***vgsIpG729*** or ***vgsIpG729Ge*** either ***64kG711*** or ***8kG729*** may be provisioned. For feature ***vgsAtmG729*** any of ***64kG711***,***32kG726*** and ***8kG729*** may be provisioned. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	64kG711 32kG726 24kG726 8kG729 sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag tone2100Rate (toneRate)

Access	Read and write
Description	This attribute specifies the coding algorithm to be used for timeslots within the *Brag* component on which 2100 Hz tone is detected (phase reversal may or may not be detected). This attribute takes precedence over the *defaultVoiceRate* attribute. This attribute must be set to ***64kG711*** when using IP transport. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

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Mib	Vgs
Values	64kG711 32kG726 sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag silenceDetectionHangOverTime (silDetTime)

Access	Read and write
Description	This attribute specifies the time in milliseconds for which the speech path is left on before being suppressed when a timeslot is silent. This helps to prevent clipping at the end of words. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	Decimal (30..500) sameAsProfile
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag silenceSuppression (silSup)

Access	Read and write
Description	This attribute specifies whether silence suppression is performed. A value of ***enabled*** indicates that silence suppression is performed as default. For each connection this default can be overridden by the controller. A value of ***disabled*** indicates that silence suppression is not performed under any circumstances. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	enabled disabled sameAsProfile

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Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag silenceSuppressionThreshold (silSupThresh)

Access	Read and write
Description	This attribute specifies the level above which silence suppression is not performed. A value in the range -39 to -36 dBm0 is only permitted on a ***2pGeMmSrVsp3*** card. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	Signed (-60..-36) sameAsProfile
Units	dBm0
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag signalingType (sigType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the signaling type of the trunks within the *Brag* component. ***unsignaled*** performs no additional signaling. ***mfRemote*** performs MF signaling to a remote call server. This attribute must be set to ***unsignaled*** when using ATM transport.
Mib	Vgs
Values	unsignaled mfRemote
Default	unsignaled

ATTRIBUTE Nsta Vgs Brag echoCancellationTailLength (eCanTail)

Access	Read and write
Description	This attribute specifies the echo cancellation tail length applied to all timeslots in this *Brag*. A value of 32ms should be used for networks with an echo round trip delay of up to 32 ms, and a value of 48 ms should be used for networks with an

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echo round trip delay of 32 to 48 ms.
The use of 48 ms for round trip delays of less than 32 ms is not advised.
The use of 64 ms is reserved for the ***2pGeMmSrVsp3*** card.

If set to ***autoConfigure*** the actual value used depends on card type. If the card type is ***12mVspAal*** or ***Vsp2***, the echo cancellation tail length is set to 32 ms. If the card type is ***2pGeMmSrVsp3***, the echo cancellation tail length is set to 64 ms.

This attribute must be set to ***32*** or ***autoConfigure*** when a *Nsta/n Conn/n BasicRateGroup/n* component is provisioned and when running on a ***12mVspAal*** card.

This attribute must be set to ***32***, ***48*** or ***autoConfigure*** when using a ***Vsp2*** card.

This attribute must be set to ***128*** or ***autoConfigure*** when using a ***2pGeMmSrVsp3*** card.

Mib	Vgs
Values	autoConfigure 32 48 64 128
Units	msec
Default	autoConfigure

ATTRIBUTE Nsta Vgs Brag toneset (toneset)

Access	Read and write
Description	This attribute specifies the tone set available to the controller. The possible values are: ***sameAsVgs*** - Use the *defaultToneset* attribute from the *Vgs* component ***argentina*** - Use the tone set for Argentina. ***australia -*** Use the tone set for Australia. ***austria*** - Use the tone set for Austria. ***belgium*** - Use the tone set for Belgium. ***bolivia*** - Use the tone set for Bolivia. ***brazil -*** Use the tone set for Brazil. ***brazilCustom1 -*** Use the tone set for Brazil.Custom1 ***canadaUsa*** - Use the tone set for Canada and the USA. ***chile*** - Use the tone set for Chile. ***china*** - Use the tone set for China. ***custom1*** - Use the tone set patched for Custom1. ***custom2*** - Use the tone set patched for Custom2. ***custom3*** - Use the tone set patched for Custom3.

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custom4 - Use the tone set patched for Custom4.
custom5 - Use the tone set patched for Custom5.
czech - Use the tone set for the Czech Republic.
denmark - Use the tone set for Denmark.
finland - Use the tone set for Finland.
france - Use the tone set for France.
germany - Use the tone set for Germany.
greece - Use the tone set for Greece.
hongKong - Use the tone set for Hong Kong.
hungary - Use the tone set for Hungary.
india - Use the tone set for India.
ireland - Use the tone set for Ireland.
israel - Use the tone set for Israel.
italy - Use the tone set for Italy.
japan - Use the tone set for Japan.
korea - Use the tone set for Korea.
malaysia - Use the tone set for Malaysia.
mexico - Use the tone set for Mexico.
mexico*Custom1* - Use the tone set for MexicoCustom1.
netherlands - Use the tone set for The Netherlands.
newZealand - Use the tone set for New Zealand.
norway - Use the tone set for Norway.
pakistan - Use the tone set for Pakistan.
panama - Use the tone set for Panama.
philippines - Use the tone set for Philippines.
poland - Use the tone set for Poland.
portugal - Use the tone set for Portugal.
romania - Use the tone set for Romania.
russia - Use the tone set for Russia.
singapore - Use the tone set for Singapore.
southafrica - Use the tone set for South Africa.
spain - Use the tone set for Spain.
sweden - Use the tone set for Sweden.
switzerland - Use the tone set for Switzerland.
taiwan- Use the tone set for Taiwan.
thailand - Use the tone set for Thailand.
turkey - Use the tone set for Turkey.
uk - Use the tone set for the UK.
venezuela - Use the tone set for Venezuela.

Mib	Vgs
Values	sameAsVgs canadaUsa spain uk france portugal belgium germany netherlands

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sweden
austria
italy
switzerland
australia
brazil
ireland
mexico
israel
romania
turkey
czech
china
taiwan
korea
japan
panama
argentina
greece
poland
newZealand
singapore
venezuela
chile
hongKong
malaysia
philippines
thailand
india
hungary
russia
custom1
custom2
custom3
custom4
custom5
pakistan
mexicoCustom1
brazilCustom1
norway
finland
denmark
bolivia
southafrica

Default sameAsVgs

ATTRIBUTE Nsta Vgs Brag minimumDtmfPowerLevel

Access Read and write

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Description	This attribute specifies the value of the minimum power level at which DTMF digits must be detected. This value is used to allow for different specification for different administrations. This attribute is ignored if the *DigitCollection* component is not present under the parent *Vgs*. This attribute must be a multiple of 3 on a ***2pGeMmSrVsp3*** card.
Mib	Vgs
Values	Signed (-30..-22)
Units	dBm0
Default	-27

ATTRIBUTE Nsta Vgs Brag digitTransport

Access	Read and write
Description	This attribute specifies the method by which digit tones are transported. If ***64kG711***, then G.729 voice channels will upspeed to send ***64kG711*** packets when DTMF is detected. If ***sendAsVoice***, DTMF is encoded using currently selected codec. If ***squelch,*** during the playback of a digit, silence is sent over the voice path, encoded at the current encoding rate. If ***relay***, this value enables negotiation of mutual support for the relay of DTMF tones as RFC2833 VoIP packets. Should this negotiation fail then behavior is the same as for ***64kG711***. A value of ***relay*** is only valid on a ***2pGeMmSrVsp3*** card. If the *Sw Lpt featureList* attribute contains ***vgsAtm***, ***vgsAtmDc*** or ***vgsIp*** and the card type is not ***2pGeMmSrVsp3***, this attribute is ignored and ***sendAsVoice*** will be the digit tone transport method. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	sendAsVoice 64kG711 squelch relay sameAsProfile
Default	sameAsProfile

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ATTRIBUTE Nsta Vgs Brag **vbdTransport**

Access	Read and write
Description	This attribute specifies the method by which voiceband data tones are transported. If ***useTone2100Rate***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected regardless of whether or not the remote gateway has indicated support for this codec. If ***useTone2100RateIfNegotiated***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected only when the remote gateway has indicated support for this codec. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	useTone2100RateIfNegotiated useTone2100Rate sameAsProfile
Default	sameAsProfile

GROUP Nsta Vgs Brag **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Vgs

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Nsta Vgs Brag operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Vgs

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Nsta Vgs Brag usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Vgs

Values — idle
active (activ)
busy

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Default	idle

GROUP Nsta Vgs Brag Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *Brag* component failure.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag failureCause (failCause)

Access	Read only
Description	This attribute indicates the cause for the *Brag*s failure. The failure cause messages are: ***serviceChanNotReady*** - this failure cause message occurs if the TDM *Lp* is down, or waiting for the *Chan* to establish communication. ***operatorLock*** - this failure message occurs when a dependent component is locked by the operator. ***internalError*** - an internal error, which can not be determined has occurred. ***outOfResource*** - not enough hardware resource to handle current capacity. ***vspNotReady*** - the VSP card is down, or waiting for it to establish communication. ***activating*** - component creation is currently in progress. ***casDefinitionNotReady*** - The *CasDefn* component, to which the *Cas* subcomponent of the *Brag* component is linked to, is disabled. ***none*** - no failure.
Mib	Vgs
Values	none serviceChanNotReady operatorLock internalError outOfResource vspNotReady activating casDefinitionNotReady
Default	none

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ATTRIBUTE Nsta Vgs Brag echoCancellationTailLengthValue (eCanTailValue)

Access	Read only
Description	This attribute shows the echo cancellation tail length currently in use.
Mib	Vgs
Values	32 48 64 128
Units	msec
Default	No default

GROUP Nsta Vgs Brag CommonOp (ComOp)

Properties	Operational
Description	This group contains operational attributes common to *Brag* and *DBrag*.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag outOfServiceTerminationsByMgc (oosTermsByMgc)

Access	Read only
Description	This attribute is a list of TDM terminations placed out of service by the controller. This does not include TDM terminations placed out of service by the gateway. This attribute is only relevant if the H.248 protocol is in use. If any other attribute is used, this attribute is filtered.
Mib	Vgs
List of	Decimal (1..31)
Default	No default

COMPONENT Nsta Vgs Brag UdpHdlcTransport (Uht)

Instance	Decimal (1..31)
Groups	GROUP Nsta Vgs Brag Uht Provisioned (Prov) GROUP Nsta Vgs Brag Uht OsiState (State) GROUP Nsta Vgs Brag Uht HdlcStatistics (HdlcStats) GROUP Nsta Vgs Brag Uht Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs Brag/n UdpHdlcTransport/<timeslot>* This optional component provides the transport of HDLC D Channel data over UDP to a remote signaling device.

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When a *UdpHdlcTransport* component is provisioned under a *Brag*, all valid HDLC frames within the timeslot smaller than 512 octets in size are transported transparently over UDP. HDLC frames greater than 512 octets in size are discarded.

The local address for UDP datagrams is provided by the *udpPortConnection* link to a *UdpPort* component. The destination address is provided by the controller over the relevant control protocol.

All HDLC frames received are transmitted to the IP network when a destination address has been provided by the controller. Frames received before the controller has provided the destination address are discarded.

All data received within UDP datagrams from the local IP address and UDP port are transmitted as HDLC frames.

The instance number of the *UdpHdlcTransport* component specifies the TDM timeslot within the basic rate group that is carrying the HDLC frames. This timeslot must be included in the *timeslots* attribute of the *Channel* component linked to the parent *Brag* component.

There is a maximum of one *UdpHdlcTransport* component per *Brag*, and a maximum of 10 *UdpHdlcTransport* components per *Vgs* component hierarchy.

The *UdpHdlcTransport* component is mutually exclusive with *V5Link* subcomponent of *Brag*.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs Brag Uht **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains the provisioning data for the *UdpHdlcTransport* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Brag Uht **udpPortConnection (udpConn)**

Access: Read and write

Description: This attribute specifies the link to the *Nsta/n Vgs Ctrl/n UdpPort/n* component that defines the access to the IP network.

Mib: Vgs

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Values	Link (Service, applicationName)
Default	No default

GROUP Nsta Vgs Brag Uht OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Uht adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Brag Uht operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Vgs

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Nsta Vgs Brag Uht **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Vgs

Values — idle
active (activ)
busy

Default — idle

GROUP Nsta Vgs Brag Uht **HdlcStatistics (HdlcStats)**

Properties — Operational

Description — This group contains attributes with statistical information about HDLC frames.

Mib — Vgs

ATTRIBUTE Nsta Vgs Brag Uht **txFrames (txFrm)**

Access — Read only

Description — This attribute counts the High Level Data Link Control (HDLC) frames transmitted towards the TDM interface since the component was activated. The counter wraps to 0 when it exceeds its maximum value.

Mib — Vgs

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Nsta Vgs Brag Uht **rxFrames (rxFrm)**

Access — Read only

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Description	This attribute counts the High Level Data Link Control (HDLC) frames received from the TDM interface since the component was activated. This count includes frames with FCS errors. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Uht **erroredFrames (errorFrm)**

Access	Read only
Description	This attribute counts the High Level Data Link Control (HDLC) frames received from the TDM interface with errors (FCS, frame too long, non integral number of octets, or abort received) since the component was activated. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs Brag Uht **Operational (Oper)**

Properties	Operational
Description	This group contains the status information for the *UdpHdlcTransport* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Uht **remoteIpAddress (remIpAddr)**

Access	Read only
Description	This attribute indicates the actual IP address of the remote device to which signaling packets associated with this component will be relayed. This address is provided by the controller via the control protocol. The value is set to ***0.0.0.0*** until the controller provides an IP address for the service.
Mib	Vgs
Values	IP address
Default	0.0.0.0

ATTRIBUTE Nsta Vgs Brag Uht **remoteUdpPort (remUdpPort)**

Access	Read only
Description	This attribute indicates the actual UDP port of the remote device to which signaling packets associated with this component will be relayed. This

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address is provided by the Service Manager via the control protocol.

The value is set to ***0*** until the controller provides a UDP port for the service.

Mib Vgs

Values Decimal (0..65535)

Default 0

COMPONENT Nsta Vgs Brag **AnnouncementLanguage**

Groups GROUP Nsta Vgs Brag AnnouncementLanguage Provisioned (Prov)

Scope Device

Description *Nsta/n Vgs Brag/n AnnouncementLanguage.*
Nsta/n Vgs BragS/n AnnouncementLanguage

This component is used to specify an announcement language for this *Brag* or *BragS* component which differs from the *defaultLanguage* attribute specified in the *Vgs LocalAnouncements* component.

The *AnnouncementLanguage* component is mutually exclusive of the *V5Link* subcomponent of *Brag* component. This restriction is not applicable to the *BragS* component.

Mib Vgs

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs Brag AnnouncementLanguage **Provisioned (Prov)**

Properties Provisioned

Description This group contains the provisioning data for the Local Announcement facility.

Mib Vgs

ATTRIBUTE Nsta Vgs Brag AnnouncementLanguage **defaultLanguage**

Access Read and write

Description This attribute specifies the language to be used on the announcement when no language is provided via the Media Gateway Controller. When a value is specified here, it overrides the value in the *AnnouncementLanguage* component.

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If the value is not empty, it must be a 3 character ASCII string (lower case a-z) for example "eng".

Mib Vgs

Values String (0..3, ASCII)

Default ""

COMPONENT Nsta Vgs Brag Q921

Instance Decimal (1..31)

Groups GROUP Nsta Vgs Brag Q921 Provisioned (Prov)
GROUP Nsta Vgs Brag Q921 OsiState (State)
GROUP Nsta Vgs Brag Q921 Operational (Oper)

Scope Device

Description *Nsta/n Vgs Brag/n Q921/<timeslot number>*
This component holds the information for TDM Q.921 transport. The timeslot, used as the component instance, must be present in the *Brag*. The total number of instances for this component and the *Nsta/n Vgs Brag/n V5Link LapV5* component under the same *Vgs* component hierarchy must not exceed 40.

The *Q921* component is mutually exclusive with the *V5Link* subcomponent of the *Brag.*

Mib Vgs

Common Verbs Help
List
Display
Add
DELete

GROUP Nsta Vgs Brag Q921 Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioning data for the *Q921* component.

Mib Vgs

ATTRIBUTE Nsta Vgs Brag Q921 t200

Access Read and write

Description This attribute specifies the maximum time between the transmission of a layer 2 frame and the receipt of an acknowledgement from the user. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second.

Mib Vgs

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Values	Decimal (0.5..5.0)
Units	seconds
Default	1.0

ATTRIBUTE Nsta Vgs Brag Q921 **t203**

Access	Read and write
Description	This attribute specifies the maximum time without frame exchange during multiple frame operations.
Mib	Vgs
Values	Decimal (10..300)
Units	seconds
Default	10

ATTRIBUTE Nsta Vgs Brag Q921 **n200**

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of a layer 2 frame.
Mib	Vgs
Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs Brag Q921 **n201**

Access	Read and write
Description	This attribute specifies the maximum length of an information field.
Mib	Vgs
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs Brag Q921 **outstandingFrames**

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)
Default	7

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ATTRIBUTE Nsta Vgs Brag Q921 **side**

Access	Read and write
Criticality	Process
Description	This attribute specifies if this end of the PRI trunk is to be considered the network end or the user end. The possible values are: ***user***, ***network***.
Mib	Vgs
Values	user network
Default	network

GROUP Nsta Vgs Brag Q921 **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Q921 **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

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Default	unlocked

ATTRIBUTE Nsta Vgs Brag Q921 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Brag Q921 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Brag Q921 Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *Q921* component failure.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Q921 txFrames

Access	Read only

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Description	This attribute counts Q.921 frames transmitted towards the TDM interface since the component was activated. The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, unnumbered information frames The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Q921 **rxFrames**

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface since the component was activated. This includes HDLC errored frames. The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, unnumbered information frames. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Q921 **erroredFrames**

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface with errors since the component was activated. The following errors are counted: invalid frames received (FCS, overrun, or non-integral number of octets), SABM errors, DM frames Tx in response to a Rx SABME, frames with an information field that is not permitted or a supervisory unnumbered frame with an incorrect length, frame received with an invalid receive sequence, frames received with I field larger than *n201*. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Q921 retriesCounter

Access	Read only
Description	This attribute counts the number of retransmission attempts. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Q921 linkStatus

Access	Read only
Description	This attribute indicates the status of the link. The possible values are: ***up***, ***down***.
Mib	Vgs
Values	up down
Default	No default

COMPONENT Nsta Vgs Brag V5Link (V5Link)

Groups	GROUP Nsta Vgs Brag V5Link Provisioned (Prov) GROUP Nsta Vgs Brag V5Link Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs Brag/n V5Link* The *V5Link* component provides the capability to send V5.2 link identification signaling to the TDM interface. It also provides attributes to store timer values and maximum values for counters required by the V5.2 protocol for any C-channel subcomponents (*LapV5* component). The *V5Link* component can be added when the TDM interface named as the *Brag interfaceName* is to support any V5.2 signaling. The *V5Link* component is mutually exclusive with the *Q921*, *AnnouncementLanguage* and *UdpHdlcTransport* subcomponents of the *Brag*. If *V5Link* is provisioned, none of the others may be provisioned on the same *Brag*. Another *Brag* on the same *Vgs* may support one of the other services. The channel component specified as the *interfaceName* of the *Brag* which has a *V5Link* subcomponent must belong to an E1. Timeslots 1 to 31 must belong to the channel; none can be omitted.

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If this component is provisioned, a *V5ua* component must also be provisioned under the same *Vgs*.

Mib Vgs

Opt. Subcomp. COMPONENT Nsta Vgs Brag V5Link LapV5 (LapV5)

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs Brag V5Link Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioning attributes for the *Nsta/n Vgs Brag/n V5Link* component.

Mib Vgs

ATTRIBUTE Nsta Vgs Brag V5Link t200

Access Read and write

Description This attribute specifies the maximum time allowed between the transmission of a layer 2 frame and the receipt of an acknowledgement from the user. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second.

Mib Vgs

Values Decimal (0.5..5.0)

Units seconds

Default 1.0

ATTRIBUTE Nsta Vgs Brag V5Link t203

Access Read and write

Description This attribute specifies the maximum time without frame exchange during multiple frame operations.

Expiry of this timer leads to a "keep-alive" polling RR or RNR frame being transmitted to ensure that the remote layer 2 entity is still active.

Mib Vgs

Values Decimal (10..300)

Units seconds

Default 10

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ATTRIBUTE Nsta Vgs Brag V5Link **n200**

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of a layer 2 frame.
Mib	Vgs
Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs Brag V5Link **n201**

Access	Read and write
Description	This attribute specifies the maximum length of an information field.
Mib	Vgs
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs Brag V5Link **maxOutstandingFrames**

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)
Default	7

GROUP Nsta Vgs Brag V5Link **Operational (Oper)**

Properties	Operational
Description	This group contains operational attributes of the *Nsta/n Vgs Brag/n V5Link* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag V5Link **interfaceId**

Access	Read only
Description	This attribute indicates the V5UA protocol link identifier for this *V5Link*. The value displayed here is the expected value of the V5UA interface identifier for this particular *Brag*. Any V5UA messages received by the *V5ua* with this specific interface identifier are processed by this *V5Link*. If the interface identifier received in a V5UA message does not match the interface identifier of any *V5Link* associated with this *Vgs*, the message is

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discarded.
The value for this attribute is automatically generated.

Mib Vgs

Values Hex (H.0..H.ffffffff)

Default No default

COMPONENT Nsta Vgs Brag V5Link LapV5 (LapV5)

Instance Decimal (15; 16; 31)

Groups GROUP Nsta Vgs Brag V5Link LapV5 OsiState (State)
GROUP Nsta Vgs Brag V5Link LapV5 Operational (Oper)

Scope Device

Description *Nsta/n Vgs Brag/n V5Link LapV5/<timeslot number>*
Nsta/n Vgs MgV5Link/n LapV5/n
This component represents a Link Access Protocol (LAP) entity for the V5.2 C-channel.
The instance value is the specific timeslot used by the C-channel on the associated E1.
The *LapV5* is provisioned whenever the indicated timeslot is to be used either for carrying V5.2 messaging (as an active C-channel) or when it is to be in a “stand-by” mode to provide an alternate C-channel, used if the active C-channel fails.
A *V5Link* does not need to have any C-channels, so it is legitimate to have a *V5Link* component with no *LapV5* subcomponents. However, there can be no more that three *LapV5* subcomponents, since the standards explicitly state that only timeslots 15, 16, and 31 may be used for C-channels.

Mib Vgs

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs Brag V5Link LapV5 OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Vgs

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ATTRIBUTE Nsta Vgs Brag V5Link LapV5 **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values:
idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs Brag V5Link LapV5 Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *Nsta/n Vgs Brag/n V5Link LapV5/<timeslot>* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 interfaceId

Access: Read only

Criticality: Component

Description: This attribute indicates the V5UA protocol link identifier for this *LapV5*. The value displayed here is the expected value of the V5UA interface identifier for this particular C-channel. Any V5UA messages received by the *V5ua* with this specific interface identifier are processed by this *LapV5*. If the interface identifier received in a V5UA message does not match the interface identifier of any *LapV5* associated with this *Vgs*, the message is discarded.

The format of the *LapV5* interface identifier and that of the *V5Link* interface identifier are closely related. The *LapV5* interface identifier is equal to the interface identifier of its parent *V5Link*, plus the timeslot number. Therefore, the lowest 5 bits of the interface identifier are either 0 (for the *V5Link*), 15, 16, or 31 (for the C-channels).

Mib: Vgs

Values: Hex (H.0..H.ffffffff)

Default: No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 txFrames

Access: Read only

Description: This attribute counts the frames transmitted towards the TDM interface since the component was activated. This includes retransmitted frames.

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The counter wraps to 0 when its maximum value is exceeded.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 **rxFrames**

Access Read only

Description This attribute counts the frames received from the TDM interface since the component was activated. This includes errored frames.

The counter wraps to 0 when its maximum value is exceeded.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 **erroredFrames**

Access Read only

Description This attribute counts the frames received from the TDM interface with errors since the component was activated.
Note that the errored frames counted here do not include all errors. According to V5.2 standards, short frames (under the minimum required length) and some other errors are discarded without reporting them to upper levels of the V5.2 stack.

The counter wraps to 0 when its maximum value is exceeded.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 **retransmittedFrames**

Access Read only

Description This attribute counts retransmission attempts.

The peer layer 2 must respond to an I frame within the protocol timer interval provisioned as *t200* seconds. If the peer layer 2 fails to acknowledge a frame prior to the expiry of the timer and there have not been *n200* retransmissions yet, the *LapV5* retransmits the unacknowledged frame and increments *retransmittedFrames*.

If there have been sufficient retransmission attempts to reach the provisioned *n200* limit, the C-channel attempts to re-establish, and the *n200Exhausted* increments.

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The counter wraps to 0 when its maximum value is exceeded.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 **n200Exhausted**

Access: Read only

Description: This attribute counts the number of times that the retransmission limit specified by the *n200* attribute was exceeded on this C-channel (*LapV5*). Each time the limit is reached, the counter is incremented and the *LapV5* re-establishes the C-channel.

The counter wraps to 0 when its maximum value is exceeded.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 **activeDataLinkProtocols**

Access: Read only

Description: This attribute indicates the set of V5.2 protocols currently established on C-channel.

The following protocols ate supported:
protection (***prot***) - This protocol provides the capability to enable stand-by C-channels when the active C-channels fail
link - This protocol provides the capability to enable and disable E1 links, as well as provide Link Identification procedure messaging.
control (***ctrl***) - This protocol provides the capability to enable and disable user terminals (sets).
bcc - This protocol provides the capability to allocate specific B channels on indicated E1 links t a call.
pstn - This protocol provides the capability to signla user terminal events from the terminal to the network and responses back to the terminal.

Mib: Vgs

Set of:
protection (prot)
link (link)
control (ctrl)
bcc (bcc)
pstn (pstn)

Default: No default

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COMPONENT Nsta Vgs Brag ChannelAssociatedSignaling (Cas)

Groups	GROUP Nsta Vgs Brag Cas Provisioned (Prov) GROUP Nsta Vgs Brag Cas Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs Brag/n ChannelAssociatedSignaling* *Nsta/n Vgs Tag/n ChannelAssociatedSignaling* This component represents the capability to terminate, process and redirect any Channel Associated Signaling information associated with the parent component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Brag Cas Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Cas* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Cas channelAssocSignalingDefinition (casDefinition)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to an *Nsta/n Vgs CasDefn/n* component, which defines the CAS signaling details. This attribute must be supplied.
Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

GROUP Nsta Vgs Brag Cas Operational (Oper)

Properties	Operational
Description	This group contains attributes that indicate the status of a *Cas* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Cas txSignals

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Access	Read only
Description	This attribute counts CAS line signals transmitted towards the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Cas rxSignals

Access	Read only
Description	This attribute counts CAS line signals received from the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Cas busyChannels

Access	Read only
Description	This attribute indicates the number of endpoints in answer or setup state for the *Chan* component specified in the *interfaceName* attribute of the parent component. This includes only the endpoints that are not in idle or blocked state.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs Brag Cas blockedChannels

Access	Read only
Description	This attribute indicates the number of endpoints in blocked state for the *Chan* component specified in the *interfaceName* attribute of the parent component.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs Brag Cas signalFailureIndications

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Access	Read only
Description	This attribute counts the number of incoming line state changes that are not recognized as valid candidates for that stage in a call, and that are reported as a Signal Failure to the call server. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs ControlConnection (Ctrl)

Instance	mediaGateway (mg) signalingGateway (sg)
Groups	GROUP Nsta Vgs Ctrl Provisioned (Prov) GROUP Nsta Vgs Ctrl OsiState (State) GROUP Nsta Vgs Ctrl Statistics (Stats) GROUP Nsta Vgs Ctrl NstaVgsConnectionStatus (ConnStat)
Scope	Device
Description	*Nsta/n Vgs ControlConnection/mediaGateway* *Nsta/n Vgs ControlConnection/signalingGateway* The ***mediaGateway*** instance of the *ControlConnection* component defines a communication path between the voice gateway and a Controller. The ***signalingGateway*** instance of the *ControlConnection* component

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defines a communication path between a PRI signaling device attached to the voice gateway and a Controller.

Mib: Vgs

Opt. Subcomp.:
COMPONENT Nsta Vgs Ctrl SecurityPolicyDatabase (Spd)
COMPONENT Nsta Vgs Ctrl NailedUpAdaptionPoint (Nap)
COMPONENT Nsta Vgs Ctrl ActiveAccessPoint (Aap)
COMPONENT Nsta Vgs Ctrl PassiveAccessPoint (Pap)
COMPONENT Nsta Vgs Ctrl SpvcAccessPoint (SpvcAp)
COMPONENT Nsta Vgs Ctrl UdpPort (UdpPort)
COMPONENT Nsta Vgs Ctrl SctpPort
COMPONENT Nsta Vgs Ctrl VirtualRouterAccessPoint (VrAp)

Dyn. Subcomp.: COMPONENT Nsta Vgs Ctrl AtmConnection (AtmCon)

Common Verbs:
Help
List
Display
Add
DELete

VERB Ping Nsta Vgs Ctrl

Impact: Passive

Description: *Ping -ipAddr(IP Address) Nsta/n Vgs ControlConnection/n*

This command causes an ICMP echo request to be sent to the host specified by the *ipAddr* option. If a response is received for the request, a second request is sent; if no response is received for the first request, no further request is sent.

The remote IP host must respond to an ICMP ping request within 5 seconds of the request being generated.

This is intended for testing network connections at the IP level. Only one *Ping* command per component is allowed to be in progress at any one time.

GROUP Nsta Vgs Ctrl Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning data for the *ControlConnection* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Ctrl ipAddress (ipAddr)

Access: Read and write

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Description	This attribute specifies the IP address of the media or signaling gateway. Control messages from the controller will be sent to this IP address to manage connections within this gateway. This address is used to advertise the gateway to the local IP router, and to filter incoming IP packets (only packets destined for this *ipAddress* attribute value are accepted; all other packets are silently dropped). This attribute may be changed without affecting existing calls. When the *ControlConnection* component is copied using the *Copy* command, this attribute is set to ***0.0.0.0*** to prevent a duplication of IP addresses.
Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs Ctrl dnsServers (dnsList)

Access	Read and write
Description	This attribute specifies the IP addresses of the DNS servers available to this media gateway. Each DNS server has one IP address associated with it. If the list is empty then no DNS lookup is attempted by the media gateway. The list has no implied ordering. If more than one entry is present then one entry is arbitrarily chosen as the first IP address to use for a DNS lookup.
Mib	Vgs
List of	IP address
List Size	2
Default	No default

GROUP Nsta Vgs Ctrl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl adminState (osiAdmin)

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Ctrl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Ctrl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values:
idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs Ctrl Statistics (Stats)

Properties: Operational

Description: This group contains attributes which indicate traffic load and error statistics.

Mib: Vgs

ATTRIBUTE Nsta Vgs Ctrl txMessages (txMsgs)

Access: Read only

Description: This attribute counts the messages transmitted since the component was activated. The value wraps to zero when the maximum value is exceeded.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs Ctrl rxMessages (rxMsgs)

Access: Read only

Description: This attribute counts messages received without errors since the component was activated. The value wraps to zero when the maximum value is exceeded.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs Ctrl aal5Failures (errs)

Access: Read only

Description: This attribute counts AAL5 errors over this control connection, where AAL5 errors represents the combined total of CRC, Length Field, and max_SDU_deliver_length errors.

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This attribute is filtered when the ***vgsIpGigE*** or the ***vgsIpG729GigE*** feature is provisioned, or the *VrAp* subcomponent is provisioned under this component.

The value wraps to zero when the maximum value is exceeded.

Mib — Vgs

Values — Decimal (0..4294967295)

Default — No default

GROUP Nsta Vgs Ctrl **NstaVgsConnectionStatus (ConnStat)**

Properties — Operational

Description — This group contains an attribute which provides information on the status of the VGS connections.

Mib — Vgs

ATTRIBUTE Nsta Vgs Ctrl **currentStatus (cStat)**

Access — Read only

Description — This attribute specifies the current status of a *Vgs AtmTConn*, *IpMConn* or *Ctrl* connection.

enabled indicates that the component is enabled and available to transport traffic.

activating indicates that the component is progressing through its expected sequence of activation and enabling actions, and that no errors having been reported.

atmConnectionNotReady indicates that a problem has been reported with the ATM VCC linked to the component's *Nap, Aap* or *Pap* subcomponent, resulting in the component being in a disabled state.

vspNotReady indicates that the *Vsp* component linked to the parent *Nsta* component is either disabled or locked.

outOfResource indicates that no hardware resource is available on the VSP card to support the component. This means that the VSP card is inadequately equipped or has suffered some level of hardware failure.

ipNetworkInaccessible indicates that a connection into the IP network cannot be created. This may be due to physical ports being disabled, or the inability of routing software to establish an appropriate connection.

Mib — Vgs

Values — enabled
activating
atmConnectionNotReady

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vspNotReady
outOfResource
ipNetworkInaccessible

Default — No default

COMPONENT Nsta Vgs Ctrl SecurityPolicyDatabase (Spd)

Instance — String (1..20, ASCII)

Groups — GROUP Nsta Vgs Ctrl Spd Statistics (Stats)

Scope — Application

Description — *Nsta/n Vgs Ctrl/n SecurityPolicyDatabase/n*

The *SecurityPolicyDatabase* component represents a set of policies collectively known as the security policy database (SPD), which is used for applying and bypassing IPSec. There must be 2 through 6 *Policy* subcomponents.

There must be no more than one *Mgc* or *H248* component in the same *Vgs* hierarchy. It is recommended that a *Ctrl/Sg* component is not provisioned in the same *Vgs* hierarchy.

Mib — Vgs

Opt. Subcomp. — COMPONENT Nsta Vgs Ctrl Spd Policy
COMPONENT Nsta Vgs Ctrl Spd IkePolicy (Ipol)
COMPONENT Nsta Vgs Ctrl Spd SecurityAssociationProposal (SaProposal)
COMPONENT Nsta Vgs Ctrl Spd IkeProposal (IProp)

Common Verbs — Help
List
Display
Add
DELete

GROUP Nsta Vgs Ctrl Spd Statistics (Stats)

Properties — Operational

Description — This group contains statistics for the *SecurityPolicyDatabase* component. These attributes cannot be associated with individual security associations, so they are aggregated under the *SecurityPolicyDatabase* component. Counts that can be associated with a particular security association are defined under the *SecurityAssociation*, *ManualSecurityAssociation* or *IkeSecurityAssociation* component.

Mib — Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd outPackets (op)

Access — Read only

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Description	This attribute counts the packets processed by all the outbound security policies under this component, including discarded packets. The value is obtained independently from the individual outbound policies. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd outSpdDiscards (osd)

Access	Read only
Description	This attribute counts the outbound packets discarded by the security policy database because there is no matching security policy. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd outPolicyDiscards (opd)

Access	Read only
Description	This attribute counts the outbound packets discarded by the security policy. This count includes packets that are discarded by policies defined as discard and policies which have discarded packets where there is no active security association. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd inPackets (ip)

Access	Read only
Description	This attribute counts the packets processed by all the inbound security policies under this component, including discarded packets. The value is aggregated from individual inbound policies. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd **inSpdDiscards (isd)**

Access	Read only
Description	This attribute counts the inbound packets discarded by the security policy database because there is no matching security policy. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd **inPolicyDiscards (ipd)**

Access	Read only
Description	This attribute counts the inbound packets discarded by any policy or associated security association. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd **inSaLookupFailures (isl)**

Access	Read only
Description	This attribute counts the packets discarded because the Security Parameter Index (SPI) in the packet is unknown. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd **Policy**

Instance	Decimal (1..6)
Groups	GROUP Nsta Vgs Ctrl Spd Policy Selectors GROUP Nsta Vgs Ctrl Spd Policy Provisioned (Prov) GROUP Nsta Vgs Ctrl Spd Policy Statistics (Stats)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n Policy/n*

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The *Policy* component represents an IPsec policy for a traffic stream.

If a packet does not meet any policy, it is discarded.

Mib Vgs

Dyn. Subcomp. COMPONENT Nsta Vgs Ctrl Spd Policy SecurityAssociation (Sa)

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs Ctrl Spd Policy Selectors

Properties Provisioned

Description This group contains the selector attributes of the *Policy* component. These attributes specify the criteria that a packet must match for the policy to be applied.

Mib Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy protocol (proto)

Access Read and write

Description This attribute specifies the layer 4 (transport) protocol to which the policy applies. The values are as follows:
- ***any***: any protocol
- ***icmp***: Internet Control Message Protocol
- ***udp***: User Datagram Protocol

When the *action* attribute value is ***apply***, this attribute must be set to ***udp***.

Mib Vgs

Values Decimal (2..16; 18..49; 52..255)
any
icmp
udp

Default any

ATTRIBUTE Nsta Vgs Ctrl Spd Policy srcPort (sPort)

Access Read and write

Description This attribute specifies the source UDP port number for traffic flows to which the policy applies. A value of ***any*** specifies that any port number matches the policy.

If the *protocol* attribute value is ***icmp***, then this attribute must be set to ***any***.

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If the *action* attribute value is ***apply***, then this attribute must be set to ***2944***.

Mib Vgs

Values Decimal (1..499; 501..65535)
any

Default any

ATTRIBUTE Nsta Vgs Ctrl Spd Policy **dstPort (dPort)**

Access Read and write

Description This attribute specifies the destination UDP port number for traffic flows to which the policy applies. A value of ***any*** specifies that any port number matches the policy.

If the *protocol* attribute value is ***icmp***, then this attribute must be set to ***any***.

If the *action* attribute value is ***apply***, then this attribute must be set to ***2944***.

Mib Vgs

Values Decimal (1..499; 501..65535)
any

Default any

ATTRIBUTE Nsta Vgs Ctrl Spd Policy **direction**

Access Read and write

Description This attribute specifies the direction of the policy. The value can be one of the following:
- ***inbound***: this policy corresponds to an entry in the inbound security policy database (SPD), as referred to in RFC 2401. IPSec traffic received is matched against inbound policies.
- ***outbound***: this policy corresponds to an entry in the outbound SPD, as referred to in RFC 2401. Locally generated traffic is matched against outbound policies.

Mib Vgs

Values inbound
outbound

Default outbound

ATTRIBUTE Nsta Vgs Ctrl Spd Policy **srcIpAddress (sAddr)**

Access Read and write

Description This attribute specifies the source IPv4 address for traffic flows to which the policy applies.

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	The address can be a host address, a range or a wildcard: - To specify a host address, specify one value, which is the host address. - To specify a range of IPv4 addresses, specify two values, which are the lower and upper bounds of the range. The order does not matter. - To specify a wildcard, leave the list empty. A value of ***0.0.0.0*** is not permitted.
Mib	Vgs
List of	IP address
List Size	2
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy **dstIpAddress (dAddr)**

Access	Read and write
Description	This attribute specifies the destination IPv4 address for traffic flows to which the policy applies. The address can be a host address, a range or a wildcard: - To specify a host address, specify one value, which is the host address. - To specify a range of IP addresses, specify two values, which are the lower and upper bounds of the range. The order does not matter. - To specify a wildcard, leave the list empty. A value of ***0.0.0.0*** is not permitted.
Mib	Vgs
List of	IP address
List Size	2
Default	No default

GROUP Nsta Vgs Ctrl Spd Policy **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Policy* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy **action**

Access	Read and write
Description	This attribute specifies the action to be taken when a packet is received that matches the selectors for this policy. The value can be one of the following: - ***discard***: the packet is to be discarded. - ***bypass***: no security is to be applied to the packet. Instead the packet is forwarded as usual. - ***apply***: the security service specified by the *Sa* subcomponent is applied

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	to the packet. If this attribute takes the value of ***apply***, it is recommended that an instance of *Vr Ip Spd Policy* with the *action* attribute set to ***apply*** is also provisioned.
Mib	Vgs
Values	discard bypass apply
Default	bypass

ATTRIBUTE Nsta Vgs Ctrl Spd Policy description

Access	Read and write
Description	This attribute allows a name or description for the *Policy* instance.
Mib	Vgs
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Ctrl Spd Policy ikePolicy

Access	Read and write
Description	This attribute specifies the instance of *IkePolicy* component to which this instance of the *Policy* component is linked. When the *action* attribute is set to ***apply***, this attribute must specify an instance of *IkePolicy* component under the same *Spd* component as this *Policy* component.
Mib	Vgs
List of	Link (Service, associatedPolicies)
List Size	1
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy saProposal

Access	Read and write
Description	This attribute specifies the *SaProposal* component which is linked to this policy. When the *action* attribute is set to ***apply***, this attribute must specify an instance of *SaProposal* component under the same *Spd* component as this *Policy* component.

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Mib	Vgs
List of	Link (Service, associatedPolicies)
List Size	1
Default	No default

GROUP Nsta Vgs Ctrl Spd Policy **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistical attributes of the *Policy* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy **packetCount (pc)**

Access	Read only
Description	This attribute counts the packets processed for all *Sa* components which have been associated with this *Policy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy **authErrors (aErr)**

Access	Read only
Description	This attribute counts the authentication errors encountered for all SAs which have been associated with this policy. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy **replayErrors (rErr)**

Access	Read only
Description	This attribute counts the replay errors encountered for all *Sa* components which have been associated with this *Policy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs Ctrl Spd Policy otherErrors (oErr)

Access	Read only
Description	This attribute counts the security packets received on all *Sa* components which have been associated with this *Policy* component for which an error is encountered other than those described previously. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd Policy SecurityAssociation (Sa)

Instance	Decimal (256..4294967295)
Groups	GROUP Nsta Vgs Ctrl Spd Policy Sa Operational (Oper) GROUP Nsta Vgs Ctrl Spd Policy Sa Statistics (Stats)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n Policy/n SecurityAssociation/n* This component represents a security association.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Ctrl Spd Policy Sa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *SecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa upTime

Access	Read only
Description	This attribute indicates the time that has elapsed since this *SecurityAssociation* component was created.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

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ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **remainingTimeToLive**

Access	Read only
Description	This attribute indicates the lifetime remaining for this *SecurityAssociation* component.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **saTimeToLive**

Access	Read only
Description	This attribute indicates the hard lifetime for the SA.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **perfectForwardSecrecy (pfs)**

Access	Read only
Description	This attribute indicates if PFS has been negotiated.
Mib	Vgs
Values	off on
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **encryptAlgorithm**

Access	Read only
Description	This attribute indicates which encryption algorithm has been negotiated. The possible values are: - ***null***:for ESP with null encryption, as described in RFC 2410.
Mib	Vgs
Values	null
Default	null

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **authAlgorithm**

Access	Read only

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Description	This attribute indicates which authentication algorithm has been negotiated. The possible enumerations are: - ***md5***: Message Digest; - ***sha1***: Secure Hash Algorithm.
Mib	Vgs
Values	sha1 md5
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **replayProtection**

Access	Read only
Description	This attribute indicates if replay protection has been negotiated. Possible values are: - ***off***: replay protection will not be used; - ***on***: replay protection will be used.
Mib	Vgs
Values	off on
Default	No default

GROUP Nsta Vgs Ctrl Spd Policy Sa **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistics attributes of the *SecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **packetCount**

Access	Read only
Description	This attribute counts the packets processed for this *SecurityAssociation* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **authErrors**

Access	Read only

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Description	This attribute counts the authentication errors encountered for this *SecurityAssociation* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **replayErrors**

Access	Read only
Description	This attribute counts duplicate sequence numbers, as defined in RFC 2046, for this *SecurityAssociation* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa **otherErrors**

Access	Read only
Description	This attribute counts the security packets received on this *SecurityAssociation* component for which an error is encountered but not counted by the other specific error count attributes. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd **IkePolicy (Ipol)**

Instance	Decimal (1..1)
Groups	GROUP Nsta Vgs Ctrl Spd Ipol Selectors GROUP Nsta Vgs Ctrl Spd Ipol Provisioned (Prov) GROUP Nsta Vgs Ctrl Spd Ipol Operational (Oper) GROUP Nsta Vgs Ctrl Spd Ipol Statistics (Stats)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n IkePolicy/n* The *IkePolicy* component represents the Internet Key Exchange (IKE) requirements for a specific IKE connection.

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The value of attribute *ikeResponseTimerValue* multiplied by the value of attribute *ikeRetryAttempts* must be less than 70% of the value of attribute *saTimeToLive*.

Mib Vgs

Dyn. Subcomp. COMPONENT Nsta Vgs Ctrl Spd Ipol IkeSecurityAssociation (Isa)

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs Ctrl Spd Ipol Selectors

Properties Provisioned

Description This group contains the selector attributes of the *IkePolicy* component. These attributes specify the criteria that a packet must match for the policy to be applied.

Mib Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol remoteIpAddress (ria)

Access Read and write

Description This attribute specifies the remote IP address for the IKE key management traffic flow. This value should be set to equal the value of the *remoteMgcAddress* attribute in the *Mgc* component under the same parent *Vgs* component.

Mib Vgs

Values IP address

Default No default

GROUP Nsta Vgs Ctrl Spd Ipol Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes of the *IkePolicy* component.

Mib Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol description (desc)

Access Read and write

Description This attribute allows a name or description for the *IkePolicy* instance.

Mib Vgs

Values String (0..20, ASCII)

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Default	""

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol ikePresharedKey (ipk)

Access	Write only
Description	This attribute specifies the symmetric encryption key to be used in the IKE protocol. This is stored encrypted and cannot be read. It is recommended that the *ikePresharedKey* attribute is 10 or more characters in length. This attribute must not contain ';' characters.
Mib	Vgs
Values	String (0..255, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol ikeResponseTimerValue (irtv)

Access	Read and write
Description	This attribute specifies the initial time the IKE waits for a reply from the peer IKE stack before attempting to resend the message.
Mib	Vgs
Values	Decimal (1000..3000)
Units	msec
Default	1000

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol ikeRetryAttempts (ira)

Access	Read and write
Description	This attribute specifies the number of retransmission attempts of any IKE message by the IKE stack. If a message has no response then the IKE will have failed to negotiate.
Mib	Vgs
Values	Decimal (0..2)
Default	2

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol ikeProposal (iPr)

Access	Read and write
Description	This attribute associates this *IkePolicy* to an *IkeProposal* component. The *ikeProposal* attribute must reference an *IkeProposal* component under the same *SecurityPolicyDatabase* component as this *IkePolicy*.
Mib	Vgs

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Values	Link (Service, associatedIkePolicies)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **associatedPolicies**

Access	Read only
Description	This attribute lists all the associated *Policy* components liked to this *IkePolicy*.
Mib	Vgs
List of	Link (Service, ikePolicy)
List Size	6
Default	No default

GROUP Nsta Vgs Ctrl Spd Ipol **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *IkePolicy* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **negotiationStatus**

Access	Read only
Description	This attribute indicates the status of IKE negotiation. The possible values are: ***inactive***: no negotiation is in progress. ***initializing***: initial negotiation is in progress. ***failedPhase1***: negotiation failed during Phase 1. ***failedPhase2***: negotiation failed during Phase 2. ***passed***: negotiation passed***.***
Mib	Vgs
Values	inactive initializing failedPhase1 failedPhase2 passed
Default	No default

GROUP Nsta Vgs Ctrl Spd Ipol **Statistics (Stats)**

Properties	Operational
Description	This group contains the attributes of the *IkePolicy* component that count statistics.
Mib	Vgs

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ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **phase1NegotiationSuccesses (p1ns)**

Access	Read only
Description	This attribute counts IKE phase 1 negotiation attempts made in association with this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **phase1NegotiationFailures (p1nf)**

Access	Read only
Description	This attribute counts IKE phase 1 negotiation attempts made in association with this *IkePolicy* component which have failed. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **phase2NegotiationSuccesses (p2ns)**

Access	Read only
Description	This attribute counts IPSec security associations negotiated using IKE phase 2. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **phase2NegotiationFailures (p2nf)**

Access	Read only
Description	This attribute counts IPSec security associations which failed to be negotiated using IKE phase 2. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **txPacketCount (txpc)**

Access	Read only
Description	This attribute counts the packets transmitted using this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **rxPacketCount (rxpc)**

Access	Read only
Description	This attribute counts the packets received using this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **decryptErrors (dErr)**

Access	Read only
Description	This attribute counts the packets for which decryption errors were encountered using this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **authErrors (aErr)**

Access	Read only
Description	This attribute counts the authentication errors encountered using this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol **otherErrors (oErr)**

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Access	Read only
Description	This attribute counts security packets received using this *IkePolicy* component for which an error is encountered other than those described previously. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd Ipol IkeSecurityAssociation (Isa)

Instance	Decimal (0..4294967295)
Groups	GROUP Nsta Vgs Ctrl Spd Ipol Isa Operational (Oper) GROUP Nsta Vgs Ctrl Spd Ipol Isa Statistics (Stats)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n IkePolicy/n IkeSecurityAssociation/n*
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Ctrl Spd Ipol Isa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *IkeSecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa upTime

Access	Read only
Description	This attribute indicates the time that has elapsed since this *IkeSecurityAssociation* component was created.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa remainingTimeToLive

Access	Read only

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Description	This attribute indicates the lifetime remaining for this *IkeSecurityAssociation* component.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **saTimeToLive**

Access	Read only
Description	This attribute indicates the hard lifetime for the SA.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **encryptAlgorithm**

Access	Read only
Description	This attribute indicates which encryption algorithm has been negotiated. The possible values are: - ***des***: data encryption standard (DES), - ***3des***: encryption using DES three times
Mib	Vgs
Values	des 3des
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **authAlgorithm**

Access	Read only
Description	This attribute indicates which authentication algorithm has been negotiated. The possible enumerations are: - ***md5***: message digest - ***sha1***: secure hash algorithm - ***none***: no authentication.
Mib	Vgs
Values	none sha1 md5
Default	No default

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GROUP Nsta Vgs Ctrl Spd Ipol Isa **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistics attributes of the *IkeSecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **phase2Successes (p2s)**

Access	Read only
Description	This attribute counts the security associations negotiated using IKE Phase 2. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **phase2Failures (p2f)**

Access	Read only
Description	This attribute counts the security associations which failed to be negotiated using IKE Phase 2. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **txPacketCount (txpc)**

Access	Read only
Description	This attribute counts the transmit packets associated with this *IkeSecurityAssociation* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **rxPacketCount (rxpc)**

Access	Read only
Description	This attribute counts the receive packets associated with this *IkeSecurityAssociation* component.

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The count wraps to zero when it exceeds the maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **decryptErrors (dErr)**

Access Read only

Description This attribute counts the packets for which decryption errors were encountered for this *IkeSecurityAssociation* component.

The count wraps to zero when it exceeds the maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **authErrors (aErr)**

Access Read only

Description This attribute counts the authentication errors encountered for this *IkeSecurityAssociation* component.

The count wraps to zero when it exceeds the maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa **otherErrors (oErr)**

Access Read only

Description This attribute counts the security packets received on this *IkeSecurityAssociation* component for which an error is encountered but not counted by the other specific error count attributes.

The count wraps to zero when it exceeds the maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

COMPONENT Nsta Vgs Ctrl Spd **SecurityAssociationProposal (SaProposal)**

Instance Decimal (1..1)

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Groups	GROUP Nsta Vgs Ctrl Spd SaProposal Provisioned (Prov)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n SecurityAssociationProposal/n* The *SecurityAssociationProposal* component represents the security parameters to be negotiated between two peers. This component must have a *SecurityAssociationTransform* subcomponent.
Mib	Vgs
Subcomponents	COMPONENT Nsta Vgs Ctrl Spd SaProposal SecurityAssociationTransform (SaTransform)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd SaProposal Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *SecurityAssociationProposal* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal softLifetime

Access	Read and write
Description	An SA is created with a fixed time to live, as specified by the *saTimeToLive* attribute of component *SecurityAssociation*. The SA must be renegotiated before that *saTimeToLive* value expires. This attribute specifies a percentage of the *SecurityAssociation saTimeToLive* attribute value. The corresponding time value (i.e., *saTimeToLive* softLifetime*/100 seconds) specifies when renegotiation of the SA should commence.
Mib	Vgs
Values	Decimal (75..95)
Units	%
Default	75

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal associatedPolicies

Access	Read only

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Description	This attribute lists all the *Policy* components that are associated with this component.
Mib	Vgs
List of	Link (Service, saProposal)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd SaProposal **SecurityAssociationTransform (SaTransform)**

Instance	Decimal (1..1)
Groups	GROUP Nsta Vgs Ctrl Spd SaProposal SaTransform Provisioned (Prov)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n SaProp/n SecurityAssociationTransform/n* The *SecurityAssociationTransform* component represents the transforms that can be negotiated for an IPsec SA.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd SaProposal SaTransform **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *SaTransform* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTransform **encryptAlgorithm**

Access	Read and write
Description	This attribute specifies the encryption algorithm to be proposed. The only possible enumeration is: - ***null***: for ESP with no encryption.
Mib	Vgs
Values	null
Default	null

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTransform **authAlgorithm**

Access	Read and write

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Description	This attribute specifies the authentication algorithm to be proposed. The following authentication algorithms are supported: - ***md5***: Message Digest; - ***sha1***: Secure Hash Algorithm .
Mib	Vgs
Values	sha1 md5
Default	sha1

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTransform **replayProtection**

Access	Read and write
Description	This attribute specifies whether replay protection is on or off.
Mib	Vgs
Values	off on
Default	on

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTransform **saTimeToLive**

Access	Read and write
Description	This attribute specifies the proposed SA time-to-live period.
Mib	Vgs
Values	Decimal (1800..172800)
Units	seconds
Default	28800

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTransform **perfectForwardSecrecy**

Access	Read and write
Description	This attribute specifies if PFS is on and if so, which DH group is used to compute the private session key. The parameters are: - ***none***: specifies that no private session key is to be computed.
Mib	Vgs
Values	none
Default	none

COMPONENT Nsta Vgs Ctrl Spd **IkeProposal (IProp)**

Instance	Decimal (1..1)

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Groups	GROUP Nsta Vgs Ctrl Spd IProp Provisioned (Prov)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n IkeProposal/n* The *IkeProposal* component represents the security parameters to be negotiated between two peers. This component must have an *IkeTransform* subcomponent.
Mib	Vgs
Subcomponents	COMPONENT Nsta Vgs Ctrl Spd IProp IkeTransform (ITrans)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd IProp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IkeProposal* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd IProp mode

Access	Read and write
Description	This attribute defines the method used in Phase One of the IKE negotiation. The only possible enumeration is: - ***main***: provides identity protection.
Mib	Vgs
Values	main
Default	main

ATTRIBUTE Nsta Vgs Ctrl Spd IProp softLifetime

Access	Read and write
Description	An SA is created with a fixed time to live, as specified by the *saTimeToLive* attribute of component *IkeSecurityAssociation*. The SA must be renegotiated before that *saTimeToLive* value expires. This attribute specifies a percentage of the *IkeSecurityAssociation saTimeToLive* attribute value. The corresponding time value (which is

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*softLifetime*saTimeToLive*/100 seconds) specifies when renegotiation of the SA should commence.

Mib	Vgs
Values	Decimal (75..95)
Units	%
Default	75

ATTRIBUTE Nsta Vgs Ctrl Spd IProp **associatedIkePolicies**

Access	Read only
Description	This attribute lists all the *IkePolicy* components that are associated with this component.
Mib	Vgs
List of	Link (Service, ikeProposal)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd IProp **IkeTransform (ITrans)**

Instance	Decimal (1..1)
Groups	GROUP Nsta Vgs Ctrl Spd IProp ITrans Provisioned (Prov)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n IProp/n IkeTransform/n* The *IkeTransform* component represents information contained in the transform payload that is used during negotiation of the IKE SA. The information consists of specific security attributes that need to be negotiated with the IKE peer.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd IProp ITrans **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IkeTransform* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans **authMethod**

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Access	Read and write
Description	This attribute specifies the authentication method used in IKE's Phase One negotiation. The only possible enumeration is: - ***preshared***: pre-shared symmetric keys.
Mib	Vgs
Values	preshared
Default	preshared

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans **encryptAlgorithm**

Access	Read and write
Description	This attribute specifies the encryption algorithm proposed to be offered. The following encryption algorithms are supported: - ***des***: Data Encryption Standard (DES); - ***3des***: encryption using DES three times.
Mib	Vgs
Values	des 3des
Default	des

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans **hashAlgorithm**

Access	Read and write
Description	This attribute specifies the hash algorithm to be used. The following hash algorithms are supported: - ***md5***: Message Digest; - ***sha1***: Secure Hash Algorithm.
Mib	Vgs
Values	sha1 md5
Default	sha1

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans **diffieHellmanGroup**

Access	Read and write
Description	This attribute specifies the group within which the DH exchange is negotiated. There are two groups supported: - ***gp1***: uses modulus of a 768 bit prime number; - ***gp2***: uses modulus of a 1024 bit prime number.

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Mib	Vgs
Values	gp1 gp2
Default	gp2

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans saTimeToLive

Access	Read and write
Description	This attribute specifies the time-to-live of an IKE SA negotiated using this transform.
Mib	Vgs
Values	Decimal (1800..172800)
Units	seconds
Default	86400

COMPONENT Nsta Vgs Ctrl NailedUpAdaptionPoint (Nap)

Groups	GROUP Nsta Vgs Ctrl Nap Provisioned (Prov)
Scope	Device
Description	*Nsta/n Conn/n NailedUpAdaptionPoint* *Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint* *Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint* *Nsta/n Vgs Control/n NailedUpAdaptionPoint* *Nsta/n Vgs IpMConn NailedUpAdaptionPoint* This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*). Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *Nap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Nap atmConnection (atmConn)

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Access	Read and write
Criticality	Process
Description	This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.
Mib	Vgs
Values	Link (Service, applicationName)
Default	No default

COMPONENT Nsta Vgs Ctrl ActiveAccessPoint (Aap)

Groups	GROUP Nsta Vgs Ctrl Aap Provisioned (Prov) GROUP Nsta Vgs Ctrl Aap AapAddressessProv (AapAddrProv) GROUP Nsta Vgs Ctrl Aap Operational (Oper) GROUP Nsta Vgs Ctrl Aap AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n ActiveAccessPoint* *Nsta/n Vgs IpMConn ActiveAccessPoint* *Nsta/n Conn/n ActiveAccessPoint* This component defines ATM SVC originating and terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information. An *Aap* is responsible for maintaining calls to a remote address in the ATM network.
Mib	Vgs
Common Verbs	Help List Display Add DELete

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VERB Restart Nsta Vgs Ctrl Aap

Impact	Service
Description	*Restart Nsta/n Vgs Control/n ActiveAccessPoint* *Restart Nsta/n Vgs IpMConn ActiveAccessPoint* *Restart Nsta/n Conn/n ActiveAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs Ctrl Aap **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioning data for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Aap **atmServiceCategory (service)**

Access	Read and write
Criticality	Component
Description	This attribute specified the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

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The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *Aap* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *Aap* is an *IpMConn* or *Conn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap **peakCellRate (pcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap **sustainedCellRate (scr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s

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Default	0

ATTRIBUTE Nsta Vgs Ctrl Aap **maximumBurstSize (mbs)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs Ctrl Aap **retryLimit (limit)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs Ctrl Aap **AapAddressessProv (AapAddrProv)**

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Aap **expectedRemoteAddress (expectedAddr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming setup request. If *expectedRemoteAddress* is not empty, only matching addresses in incoming setup are considered for acceptance.

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If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted.

If *expectedRemoteAddress* is empty, connection requests are accepted from any remote address.

Mib	Vgs
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Ctrl Aap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* component in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to setup a connection to the first address in the list and then continues as before.

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Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs Ctrl Aap Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Aap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap lastSetupFailureCause (failCause)

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Access	Read only
Description	This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification. If no call setup attempts have failed, this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If no call setup attempts have failed, this attribute is an empty string.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap retryFailures (failures)

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.

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Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs Ctrl Aap **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Aap **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap **lastTearDownDiagnostic (diag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs

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Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs Ctrl PassiveAccessPoint (Pap)

Groups	GROUP Nsta Vgs Ctrl Pap PapAddressesProv (PapAddrProv) GROUP Nsta Vgs Ctrl Pap Operational (Oper) GROUP Nsta Vgs Ctrl Pap AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n PassiveAccessPoint* *Nsta/n Vgs IpMConn/n PassiveAccessPoint* *Nsta/n Conn/n PassiveAccessPoint* This component defines ATM SVC terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Pap PapAddressesProv (PapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Pap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming connection setup request. If *expectedRemoteAddress* is not empty, only matching connections are considered for acceptance. If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, the component processes connection requests from any remote address.
Mib	Vgs

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Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Ctrl Pap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the ATM address of the access point. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default can not be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Nsta Vgs Ctrl Pap Operational (Oper)

Properties	Operational
Description	This group contains status information common to the *PassiveAccessPoint* and *AddresslessPassiveAccessPoint* components.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Pap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***failed,*** it indicates that an error occurred

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	while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle failed
Default	No default

GROUP Nsta Vgs Ctrl Pap **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Pap **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Pap **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Pap **lastTearDownDiagnostic (diag)**

Access	Read only

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Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs Ctrl SpvcAccessPoint (SpvcAp)

Groups	GROUP Nsta Vgs Ctrl SpvcAp Provisioned (Prov) GROUP Nsta Vgs Ctrl SpvcAp SpvcApAddressessProv (SpvcApAddrProv) GROUP Nsta Vgs Ctrl SpvcAp Operational (Oper) GROUP Nsta Vgs Ctrl SpvcAp AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n SpvcAccessPoint* *Nsta/n Vgs IpMConn SpvcAccessPoint* *Nsta/n Conn/n SpvcAccessPoint* This component defines ATM SPVC originating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

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VERB Restart Nsta Vgs Ctrl SpvcAp

Impact	Service
Description	*Restart Nsta/n Vgs Control/n SpvcAccessPoint* *Restart Nsta/n Vgs IpMConn SpvcAccessPoint* *Restart Nsta/n Conn/n SpvcAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs Ctrl SpvcAp **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **atmServiceCategory (service)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable

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bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *SpvcAp* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *SpvcAp* is an *IpMConn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **peakCellRate (pcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **sustainedCellRate (scr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s

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Default	0

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **maximumBurstSize (mbs)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **retryLimit (limit)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs Ctrl SpvcAp **SpvcApAddressessProv (SpvcApAddrProv)**

Properties	Provisioned
Description	This group contains NSAP address provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **localAddress (localAddr)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is

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	provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **remoteVpiVci (rVpiVci)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for an *SpvcAp* component.
Mib	Vgs
Values	Integer Sequence (0..255; 1..65535)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **addressToCall (addrToCall)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* application in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to set up a connection to the first address in the list and then continues as before.
Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs Ctrl SpvcAp **Operational (Oper)**

Properties	Operational

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Description	This group contains operational status information for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SpvcAp svcStatus (status)

Access	Read only
Description	This attribute specifies the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* for consecutive connection set up attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp lastSetupFailureCause (failCause)

Access	Read only
Description	This attribute contains the cause code in the last call release message following an unsuccessful call set up attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)

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Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **lastSetupFailureDiagnostic (failDiag)**

Access	Read only
Description	This attribute contains the diagnostic code in the last call release message following an unsuccessful call set up attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **retryTimeRemaining (timer)**

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches ***0*** an attempt will be made to establish the connection. When the timer is not running a value of ***0*** is returned.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **retryFailures (failures)**

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to ***0*** whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to ***0*** when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs Ctrl SpvcAp **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

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ATTRIBUTE Nsta Vgs Ctrl SpvcAp **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp **lastTearDownDiagnostic (diag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs Ctrl **UdpPort (UdpPort)**

Instance	Decimal (0..65535)
Groups	GROUP Nsta Vgs Ctrl UdpPort Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs CtrlConn/n UdpPort/<UDP port number>*

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The *UdpPort* component is used to link a UDP port, within a control connection, to an application that sends and receives packets using the port.

Mib: Vgs

Common Verbs: Help, List, Display, Add, DELete

GROUP Nsta Vgs Ctrl UdpPort Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for a *UdpPort* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Ctrl UdpPort linkToApplication

Access: Read and write

Description: This attribute specifies the application that sends and receives packets using the UDP port. The application must have a provisionable attribute called *udpPortConnection*.

This attribute is typically set automatically when an application provides a value for its own *udpPortConnection* attribute.

This attribute must be the name of a valid application within the same *Vgs* component hierarchy, otherwise a semantic check error will be generated.

Mib: Vgs

Values: Link (Service, udpPortConnection)

Default: No default

ATTRIBUTE Nsta Vgs Ctrl UdpPort differentiatedServiceField (diffServ)

Access: Read and write

Description: This attribute specifies the Differentiated Service Field in IP packets transmitted using this UDP port. Refer to RFC 791 for service field types.

Mib: Vgs

Values: Decimal (0..63)

Default: 40

COMPONENT Nsta Vgs Ctrl AtmConnection (AtmCon)

Groups: GROUP Nsta Vgs Ctrl AtmCon Operational (Oper)

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Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Ctrl AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs Ctrl SctpPort

Instance	Decimal (0..65535)
Groups	GROUP Nsta Vgs Ctrl SctpPort Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs Ctrl/n SctpPort/n* The *Simple Control Transmission Protocol (SCTP)* Port provides access to

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	the IP network. Note that the instance number indicates the SCTP port number used. This component is mutually exclusive with *UdpPort*.
Mib	Vgs
Dyn. Subcomp.	COMPONENT Nsta Vgs Ctrl SctpPort SctpLink
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl SctpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *SctpPort* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SctpPort diffServiceCodepoint (diffServ)

Access	Read and write
Description	This attribute specifies the Differentiated Service Codepoint field in IP datagrams from this port. Refer to RFC 2474. On changing, subsequent datagrams will use the new value.
Mib	Vgs
Values	Decimal (0..63)
Default	40

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoInitial (init)

Access	Read and write
Description	This attribute specifies the initial time-out value for the retransmission timer (RTO). This value is used until a Round Trip Time (RTT) measurement has been made for the destination transport address. The provisioned value must be between *rtoMin* and *rtoMax*.
Mib	Vgs
Values	Decimal (1..255)
Units	seconds
Default	3

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoMin (min)

Access	Read and write

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Description	This attribute specifies the minimum permissible value for the recalculated retransmission timer (RTO). If the computed RTO value is less than *rtoMin*, the RTO value is set to the value of *rtoMin*.
Mib	Vgs
Values	Decimal (1..255)
Units	seconds
Default	1

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoAlpha (alpha)

Access	Read and write
Description	This attribute specifies the smoothing factor used in the computation and management of the retransmission timer (RTO) in steps of 0.125 (the entered value is rounded to the nearest multiple of 0.125). These values have been selected in the SCTP specification as being optimal for this application where Round Trip Time (RTT) measurements are made not more than once per round-trip.
Mib	Vgs
Values	Decimal (0.000..255.000)
Default	0.125

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoBeta (beta)

Access	Read and write
Description	This attribute specifies the delay variance factor used in the computation and management of the retransmission timer (RTO) in steps of 0.125 (the entered value is rounded to the nearest multiple of 0.125).
Mib	Vgs
Values	Decimal (0.000..255.000)
Default	0.250

ATTRIBUTE Nsta Vgs Ctrl SctpPort validCookieLife (life)

Access	Read and write
Description	This attribute specifies the message parameter indicating to the receiver how much increment the sender wishes the receiver to add to its default cookie life-span.
Mib	Vgs
Values	Decimal (1..255)
Units	seconds
Default	60

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ATTRIBUTE Nsta Vgs Ctrl SctpPort **associationMaxRetries (assocRetries)**

Access	Read and write
Description	This attribute specifies the maximum number of retransmission attempts before the sender of data indicates the destination endpoint as unreachable.
Mib	Vgs
Values	Decimal (0..255)
Default	10

ATTRIBUTE Nsta Vgs Ctrl SctpPort **rtoMax (max)**

Access	Read and write
Description	This attribute specifies the maximum permissible value for the recalculated retransmission timer time-out (RTO). If the computed RTO value is more than *rtoMax*, the RTO value is set to the value of *rtoMax*.
Mib	Vgs
Values	Decimal (1..255)
Units	seconds
Default	60

ATTRIBUTE Nsta Vgs Ctrl SctpPort **linkToApplication (link)**

Access	Read and write
Description	This attribute specifies a link to the *Nsta/n Vgs Iua*, *Nsta/n Vgs M2ua* or *Nsta/n Vgs V5ua* component that is making use of this port.
Mib	Vgs
Values	Link (Service, sctpPortConnection)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort **heartbeatInterval (interval)**

Access	Read and write
Description	An SCTP endpoint monitors the reachability of the idle destination transport addresses of its peer by sending a heartbeat chunk every *heartbeatInterval* to the destination transport address defined for the association.
Mib	Vgs
Values	Decimal (1..65535)
Units	seconds
Default	30

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COMPONENT Nsta Vgs Ctrl SctpPort **SctpLink**

Instance	address [IP address] port [Decimal (1..65535)]
Groups	GROUP Nsta Vgs Ctrl SctpPort SctpLink Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs Control/n SctpPort/n SctpLink/<ip address>,<sctp port>* This component represents an MGC link to the SCTP port. The IP address and SCTP port number used in the instance identifier refer to the remote connection. At most three instances may be provisioned.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Ctrl SctpPort SctpLink **Operational (Oper)**

Properties	Operational
Description	This group contains attributes which describe the *SctpLink* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink **receivedChunks (rxChunks)**

Access	Read only
Description	This attribute counts the chunks received on this *SctpLink*. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink **transmittedChunks (txChunks)**

Access	Read only
Description	This attribute counts the chunks transmitted on this *SctpLink*. It includes retransmitted chunks. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink **retransmittedChunks (retransChunks)**

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Access	Read only
Description	This attribute counts the chunks retransmitted on this *SctpLink*. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink **outboundStreams (outbound)**

Access	Read only
Description	This attribute indicates the current number of outbound streams for this SCTP association.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink **inboundStreams (inbound)**

Access	Read only
Description	This attribute indicates the current number of inbound streams for this SCTP association.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

COMPONENT Nsta Vgs Ctrl **VirtualRouterAccessPoint (VrAp)**

Groups	GROUP Nsta Vgs Ctrl VrAp Provisioned (Prov)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n VrAp* *Nsta/n Vgs IpMConn VrAp* *Nsta/n Vgs DbgAccess VrAp* This component represents a point of access to a *VirtualRouter* component, which provides an IP forwarding functionality to this *Nsta/n Vgs* component hierarchy. If at least one *VrAp* component is used within a *Nsta/n Vgs* component hierarchy, then all IP network access from within that hierarchy must be via *VrAp* components.

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In addition, a *VCac* component cannot be provisioned within a *Nsta/n Vgs* component hierarchy which contains a *VrAp* component.

Mib: Vgs

Common Verbs: Help, List, Display, Add, DELete

GROUP Nsta Vgs Ctrl VrAp Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for the *VrAp* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Ctrl VrAp subnetAccessName (subnet)

Access: Read and write

Description: This attribute specifies the *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance to be used by this *VrAp*.

The value of the *ipAddr* attribute defined by the parent of this *VrAp* must belong to the subnet defined by the specified *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance.

Mib: Vgs

Values: The name of the component

Default: No default

COMPONENT Nsta Vgs AtmTrunkConnection (AtmTConn)

Instance: Decimal (0..4095)

Groups:
GROUP Nsta Vgs AtmTConn Provisioned (Prov)
GROUP Nsta Vgs AtmTConn OsiState (State)
GROUP Nsta Vgs AtmTConn Operational (Oper)
GROUP Nsta Vgs AtmTConn Statistics (Stats)
GROUP Nsta Vgs AtmTConn NstaVgsConnectionStatus (ConnStat)

Scope: Device

Description: *Nsta/n Vgs AtmTrunkConnection/n*

This component represents an ATM connection from the Voice services function processor to the ATM network. The *Vgs* component allocates AAL2 streams to ATM connections as required by the controller. An ATM connection can carry several AAL2 streams concurrently.

On a Nortel Networks Multiservice Switch 7400, a maximum of 1022

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AtmTrunkConnection components may be provisioned for ***Vsp2*** cards and a maximum of 127 *AtmTrunkConnection* components may be provisioned for ***12mVspAal*** cards.

On a Nortel Networks Multiservice Switch 15000 up to 1022 *AtmTrunkConnection* components may be provisioned.

Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs AtmTConn NailedUpAdaptionPoint (Nap) COMPONENT Nsta Vgs AtmTConn ActiveAccessPoint (Aap) COMPONENT Nsta Vgs AtmTConn PassiveAccessPoint (Pap) COMPONENT Nsta Vgs AtmTConn SpvcAccessPoint (SpvcAp)
Dyn. Subcomp.	COMPONENT Nsta Vgs AtmTConn AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs AtmTConn Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *AtmTrunkConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn remoteAddress (rAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM address of the node that may be reached via this trunk. The *remoteAddress* attribute must be set to a valid ATM address. This address must not be the same as the value of the *gatewayAtmAddress* attribute of the *Nsta Vgs* component.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn vcci (vcci)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the VCCI for this trunk. The *vcci* attribute must be set to a value to uniquely identify an ATM trunk between two nodes. Consequently all ATM trunks between any two nodes must have distinct *vcci* attribute values. The connection on the remote node must be configured with the same *vcci* attribute value. ATM trunks terminating on different remote nodes may share the same *vcci* attribute value. A *Check Prov* command will fail if the user tries to provision a value greater than 4095 for the *vcci* attribute of a *AtmTConn* component, when its subcomponent is an *Aap*, a *Pap* or an *SpvcAp*.
Mib	Vgs
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn packetLogLaw (muALaw)

Access	Read and write
Description	This attribute specifies whether the digitizing scheme is mu-law or A-law. This attribute defines the default that is used by individual *AtmTConn* components at call setup unless an alternative value is provided by the controller. The default value ***sameAsGateway*** specifies that the *packetLogLaw* attribute will take the same value as the *defaultLogLaw* attribute of the *Vgs*. This attribute may be changed without impacting existing calls. The remote end of this connection should be provisioned with the same *packetLogLaw* attribute value.
Mib	Vgs
Values	muLaw aLaw sameAsGateway
Default	sameAsGateway

ATTRIBUTE Nsta Vgs AtmTConn holdOverTime (hoTime)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the maximum period of time before a partially filled AAL2 packet is scheduled for transmission. It is also referred to as the combined use timer period (Timer_CU).
Mib	Vgs
Values	Decimal (0.500..15.875)
Units	msec
Default	2.000

ATTRIBUTE Nsta Vgs AtmTConn maxNumberAal2Trunks (trunks)

Access	Read and write
Description	This attribute specifies the maximum number of AAL2 trunks that may be allocated on this ATM trunk. The local node may allocate no more than this number of trunks.
Mib	Vgs
Values	Decimal (0..247)
Default	240

GROUP Nsta Vgs AtmTConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Vgs

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs AtmTConn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs AtmTConn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values:
idle
active (activ)
busy

Default: idle

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GROUP Nsta Vgs AtmTConn **Operational (Oper)**

Properties	Operational
Description	This group contains status information about the *AtmTrunkonnection*.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn **aal2CpLossStatus (cpLossStatus)**

Access	Read only
Description	This attribute indicates the status of the AAL2 common part sublayer alarm. It is set to ***loss*** when the alarm has been raised. It is set to ***noLoss*** when the alarm is cleared.
Mib	Vgs
Values	noLoss loss
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn **activeAal2Trunks (activeTrunks)**

Access	Read only
Description	This attribute indicates the current number of active AAL2 trunk connections for the *AtmTConn* component. This attribute is not displayed if the *cardType* is ***12mVspAal***.
Mib	Vgs
Values	Decimal (0..248)
Default	No default

GROUP Nsta Vgs AtmTConn **Statistics (Stats)**

Properties	Operational
Description	This group contains statistical data for an *AtmTConn*.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn **aal2StartFieldErrors (sfErr)**

Access	Read only
Description	This attribute counts the cells received with an AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) Start Field error. The definition of a Start Field error includes a cell with a parity error or a cell in which the packet pointed-to by the offset field (OSF) has a packet HEC error. The counter wraps to zero when it exceeds its maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn **aal2SequenceErrors (seqErr)**

Access	Read only
Description	This attribute counts the cells received with an unexpected AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs AtmTConn **NstaVgsConnectionStatus (ConnStat)**

Properties	Operational
Description	This group contains an attribute which provides information on the status of the VGS connections.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn **currentStatus (cStat)**

Access	Read only
Description	This attribute specifies the current status of a *Vgs AtmTConn*, *IpMConn* or *Ctrl* connection. ***enabled*** indicates that the component is enabled and available to transport traffic. ***activating*** indicates that the component is progressing through its expected sequence of activation and enabling actions, and that no errors having been reported. ***atmConnectionNotReady*** indicates that a problem has been reported with the ATM VCC linked to the component's *Nap, Aap* or *Pap* subcomponent, resulting in the component being in a disabled state. ***vspNotReady*** indicates that the *Vsp* component linked to the parent *Nsta* component is either disabled or locked. ***outOfResource*** indicates that no hardware resource is available on the VSP card to support the component. This means that the VSP card is inadequately equipped or has suffered some level of hardware failure.

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ipNetworkInaccessible indicates that a connection into the IP network cannot be created. This may be due to physical ports being disabled, or the inability of routing software to establish an appropriate connection.

Mib: Vgs

Values:
enabled
activating
atmConnectionNotReady
vspNotReady
outOfResource
ipNetworkInaccessible

Default: No default

COMPONENT Nsta Vgs AtmTConn NailedUpAdaptionPoint (Nap)

Groups: GROUP Nsta Vgs AtmTConn Nap Provisioned (Prov)

Scope: Device

Description:

Nsta/n Conn/n NailedUpAdaptionPoint
Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint
Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint
Nsta/n Vgs Control/n NailedUpAdaptionPoint
Nsta/n Vgs IpMConn NailedUpAdaptionPoint

This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*).

Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.

Mib: Vgs

Common Verbs:
Help
List
Display
Add
DELete

GROUP Nsta Vgs AtmTConn Nap Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for a *Nap* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs AtmTConn Nap atmConnection (atmConn)

Access: Read and write

Criticality: Process

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Description	This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.
Mib	Vgs
Values	Link (Service, applicationName)
Default	No default

COMPONENT Nsta Vgs AtmTConn ActiveAccessPoint (Aap)

Groups	GROUP Nsta Vgs AtmTConn Aap Provisioned (Prov) GROUP Nsta Vgs AtmTConn Aap Operational (Oper) GROUP Nsta Vgs AtmTConn Aap AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs AtmTConn/n ActiveAccessPoint* This component defines ATM SVC originating information pertinent to the *AtmTrunkConnection* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Restart Nsta Vgs AtmTConn Aap

Impact	Service
Description	*Restart Nsta/n Vgs AtmTConn/n ActiveAccessPoint* This command is used to restart the automatic connections procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs AtmTConn Aap Provisioned (Prov)

Properties	Provisioned

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Description	This group contains provisioning data for the *ActiveAccessPoint* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn Aap atmServiceCategory (service)

Access	Read and write
Criticality	Process
Description	This attribute specified the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.
Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr)
Default	rtVariableBitRate

ATTRIBUTE Nsta Vgs AtmTConn Aap peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap sustainedCellRate (scr)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs AtmTConn Aap **maximumBurstSize (mbs)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs AtmTConn Aap **retryLimit (limit)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs AtmTConn Aap **Operational (Oper)**

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Vgs

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ATTRIBUTE Nsta Vgs AtmTConn Aap **svcStatus (status)**

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap **lastSetupFailureCause (failCause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt.The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification. If no call setup attempts have failed, this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

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ATTRIBUTE Nsta Vgs AtmTConn Aap **lastSetupFailureDiagnostic (failDiag)**

Access	Read only
Description	This attribute contains the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If no call setup attempts have failed, this attribute is an empty string.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap **retryTimeRemaining (timer)**

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap **retryFailures (failures)**

Access	Read only
Description	This attribute counts consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs AtmTConn Aap **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

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ATTRIBUTE Nsta Vgs AtmTConn Aap **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap **lastTearDownDiagnostic (diag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs AtmTConn **PassiveAccessPoint (Pap)**

Groups	GROUP Nsta Vgs AtmTConn Pap Operational (Oper) GROUP Nsta Vgs AtmTConn Pap AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs AtmTConn/n PassiveAccessPoint*

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This component defines ATM SVC terminating information pertinent to the *AtmTrunkConnection* component.

Mib Vgs

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs AtmTConn Pap Operational (Oper)

Properties Operational

Description This group contains operational status information for the *Pap* component.

Mib Vgs

ATTRIBUTE Nsta Vgs AtmTConn Pap svcStatus (status)

Access Read only

Description This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed.

When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.

Mib Vgs

Values
initializing
connecting
connected
idle
failed

Default No default

GROUP Nsta Vgs AtmTConn Pap AccessPointOper (ApOper)

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Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn Pap **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Pap **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Pap **lastTearDownDiagnostic (diag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

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COMPONENT Nsta Vgs AtmTConn SpvcAccessPoint (SpvcAp)

Groups	GROUP Nsta Vgs AtmTConn SpvcAp Provisioned (Prov) GROUP Nsta Vgs AtmTConn SpvcAp Operational (Oper) GROUP Nsta Vgs AtmTConn SpvcAp AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs AtmTConn/n SpvcAccessPoint* This component defines ATM SVC originating information pertinent to the *AtmTrunkConnection* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Restart Nsta Vgs AtmTConn SpvcAp

Impact	Service
Description	*Restart Nsta/n Vgs AtmTConn/n SpvcAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs AtmTConn SpvcAp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp atmServiceCategory (service)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.
Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr)
Default	rtVariableBitRate

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **peakCellRate (pcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **sustainedCellRate (scr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s

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Default	0

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **maximumBurstSize (mbs)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **retryLimit (limit)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **addressToCall (addrToCall)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the remote NSAP address which is called.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **remoteVpiVci (rVpiVci)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies the remote VPI and VCI for the component.
Mib	Vgs
Values	Integer Sequence (0..255; 1..65535)
Default	No default

GROUP Nsta Vgs AtmTConn SpvcAp **Operational (Oper)**

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **svcStatus (status)**

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

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ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **lastSetupFailureCause (failCause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt.The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **lastSetupFailureDiagnostic (failDiag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **retryTimeRemaining (timer)**

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running a value of 0 is returned.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp **retryFailures (failures)**

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.
Mib	Vgs

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Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs AtmTConn SpvcAp AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)

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Default	No default

COMPONENT Nsta Vgs AtmTConn AtmConnection (AtmCon)

Groups	GROUP Nsta Vgs AtmTConn AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs AtmTConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs IpMediaStreamConnection (IpMConn)

Groups	GROUP Nsta Vgs IpMConn Provisioned (Prov) GROUP Nsta Vgs IpMConn OsiState (State) GROUP Nsta Vgs IpMConn Statistics (Stats) GROUP Nsta Vgs IpMConn NstaVgsConnectionStatus (ConnStat)
Scope	Device
Description	*Nsta/n Vgs IpMediaStreamConnection*

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	This component represents the IP media termination of the Voice over IP function.
Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs IpMConn NailedUpAdaptionPoint (Nap) COMPONENT Nsta Vgs IpMConn ActiveAccessPoint (Aap) COMPONENT Nsta Vgs IpMConn PassiveAccessPoint (Pap) COMPONENT Nsta Vgs IpMConn SpvcAccessPoint (SpvcAp) COMPONENT Nsta Vgs IpMConn VirtualRouterAccessPoint (VrAp)
Dyn. Subcomp.	COMPONENT Nsta Vgs IpMConn AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete

VERB Ping Nsta Vgs IpMConn

Impact	Passive
Description	*Ping -ipAddr(IP Address) Nsta/n Vgs IpMediaStreamConnection* This command causes an ICMP echo request to be sent to the host specified by the *ipAddr* option. If a response is received for the request, a second request is sent; if no response is received for the first request, no further request is sent. The remote IP host must respond to an ICMP ping request within 5 seconds of the request being generated. This is intended for testing network connections at the IP level. Only one *Ping* command per component is allowed to be in progress at any one time.

GROUP Nsta Vgs IpMConn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *IpMConn* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn ipAddress (ipAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the IP address of this IP connection and must be unique to the IP network.

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When the *IpMConn* component is copied using the *Copy* command, this attribute is set to ***0.0.0.0*** to prevent a duplication of IP addresses.

Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs IpMConn udpPortBase (udpBase)

Access	Read and write
Criticality	Process
Description	This attribute specifies the low end of the range of UDP port numbers which will be assigned to media stream connections using this *IpMConn* component.The high end of the range is equal to *udpPortBase* + ((2 * 24) - 1). The value provisioned is allocated by the network operating company according to the numbering plan. If the *cardType* is ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3***, ***2pVS*** or ***2pOC3ChSmIrVsp4e***, this attribute may only take the value ***16384***, ***32768*** or ***49152***. In addition, if IP access is via a Gigabit Ethernet port on the ***2pGeMmSrVsp3*** card, the value may only be ***49152***.
Mib	Vgs
Values	Decimal (8192; 16384; 24576; 32768; 40960; 49152; 57344)
Default	49152

GROUP Nsta Vgs IpMConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Vgs

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Nsta Vgs IpMConn operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Vgs

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Nsta Vgs IpMConn usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Vgs

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Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs IpMConn Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for the *IpMConn* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn txPackets (txPkt)

Access	Read only
Description	This attribute counts the packets transmitted since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn rxPackets (rxPkt)

Access	Read only
Description	This attribute counts all packets received (including errored packets) since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn erroredRxPackets (errRxPkt)

Access	Read only
Description	This attribute counts the errored packets since the component was activated. Errors may occur due to: - packets discarded on buffer full, - destination voice processing hardware is not functioning, - no IP address yet available, If the IP packets are transferred using AAL5 cells, this count will also

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	contain any AAL5 CRC errors. The value wraps to zero when the maximum value is exceeded. This attribute is filtered when the ***vspIpGigE*** or the ***vgpIpG729GigE*** feature is provisioned.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn **pingRequestsReceived (rxPing)**

Access	Read only
Description	This attribute counts the ICMP Echo request (ping) packets received since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn **atmarpPacketsReceived (rxAtmArp)**

Access	Read only
Description	This attribute counts the ATMARP (request or response) packets received since the component was activated. The value wraps to zero when the maximum value is exceeded. This attribute is filtered when the ***vspIpGigE*** or the ***vgpIpG729GigE*** feature is provisioned, or the *VrAp* subcomponent is provisioned under this component.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn **receivedPacketsDiscarded (rxDiscPkt)**

Access	Read only
Description	This attribute counts the packets received but discarded due to lack of internal buffer space. The value wraps to zero when the maximum value is exceeded. This attribute is filtered when the card type is ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3***, ***2pVS*** or ***2pOC3ChSmIrVsp4e***.

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Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn unsupportedPacketsReceived (rxUnsupPkt)

Access	Read only
Description	This attribute counts the packets received that are not IP or ICMP datagrams attributable to particular voice channels. This attribute does not include packets that are counted in *pingRequestsReceived*, *atmarpPacketsReceived* or *receivedPacketsDiscarded* attributes. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Long Integer
Default	No default

GROUP Nsta Vgs IpMConn NstaVgsConnectionStatus (ConnStat)

Properties	Operational
Description	This group contains an attribute which provides information on the status of the VGS connections.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn currentStatus (cStat)

Access	Read only
Description	This attribute specifies the current status of a *Vgs AtmTConn*, *IpMConn* or *Ctrl* connection. ***enabled*** indicates that the component is enabled and available to transport traffic. ***activating*** indicates that the component is progressing through its expected sequence of activation and enabling actions, and that no errors having been reported. ***atmConnectionNotReady*** indicates that a problem has been reported with the ATM VCC linked to the component's *Nap, Aap* or *Pap* subcomponent, resulting in the component being in a disabled state. ***vspNotReady*** indicates that the *Vsp* component linked to the parent *Nsta* component is either disabled or locked. ***outOfResource*** indicates that no hardware resource is available on the VSP card to support the component. This means that the VSP card is inadequately equipped or has suffered some level of hardware failure.

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ipNetworkInaccessible indicates that a connection into the IP network cannot be created. This may be due to physical ports being disabled, or the inability of routing software to establish an appropriate connection.

Mib: Vgs

Values:
enabled
activating
atmConnectionNotReady
vspNotReady
outOfResource
ipNetworkInaccessible

Default: No default

COMPONENT Nsta Vgs IpMConn NailedUpAdaptionPoint (Nap)

Groups: GROUP Nsta Vgs IpMConn Nap Provisioned (Prov)

Scope: Device

Description:
Nsta/n Conn/n NailedUpAdaptionPoint
Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint
Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint
Nsta/n Vgs Control/n NailedUpAdaptionPoint
Nsta/n Vgs IpMConn NailedUpAdaptionPoint

This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*).

Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.

Mib: Vgs

Common Verbs:
Help
List
Display
Add
DELete

GROUP Nsta Vgs IpMConn Nap Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for a *Nap* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs IpMConn Nap atmConnection (atmConn)

Access: Read and write

Criticality: Process

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Description	This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.
Mib	Vgs
Values	Link (Service, applicationName)
Default	No default

COMPONENT Nsta Vgs IpMConn ActiveAccessPoint (Aap)

Groups	GROUP Nsta Vgs IpMConn Aap Provisioned (Prov) GROUP Nsta Vgs IpMConn Aap AapAddressessProv (AapAddrProv) GROUP Nsta Vgs IpMConn Aap Operational (Oper) GROUP Nsta Vgs IpMConn Aap AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n ActiveAccessPoint* *Nsta/n Vgs IpMConn ActiveAccessPoint* *Nsta/n Conn/n ActiveAccessPoint* This component defines ATM SVC originating and terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information. An *Aap* is responsible for maintaining calls to a remote address in the ATM network.
Mib	Vgs
Common Verbs	Help List Display Add DELete

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VERB Restart Nsta Vgs IpMConn Aap

Impact	Service
Description	*Restart Nsta/n Vgs Control/n ActiveAccessPoint* *Restart Nsta/n Vgs IpMConn ActiveAccessPoint* *Restart Nsta/n Conn/n ActiveAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs IpMConn Aap **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioning data for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Aap **atmServiceCategory (service)**

Access	Read and write
Criticality	Component
Description	This attribute specified the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

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The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *Aap* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *Aap* is an *IpMConn* or *Conn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap **peakCellRate (pcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap **sustainedCellRate (scr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s

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Default	0

ATTRIBUTE Nsta Vgs IpMConn Aap maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs IpMConn Aap retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs IpMConn Aap AapAddressessProv (AapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Aap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming setup request. If *expectedRemoteAddress* is not empty, only matching addresses in incoming setup are considered for acceptance.

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If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted.

If *expectedRemoteAddress* is empty, connection requests are accepted from any remote address.

Mib	Vgs
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Vgs IpMConn Aap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* component in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to setup a connection to the first address in the list and then continues as before.

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Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs IpMConn Aap Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Aap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap lastSetupFailureCause (failCause)

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Access	Read only
Description	This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification. If no call setup attempts have failed, this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap **lastSetupFailureDiagnostic (failDiag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If no call setup attempts have failed, this attribute is an empty string.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap **retryTimeRemaining (timer)**

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap **retryFailures (failures)**

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.

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Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs IpMConn Aap **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Aap **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap **lastTearDownDiagnostic (diag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs

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Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs IpMConn PassiveAccessPoint (Pap)

Groups	GROUP Nsta Vgs IpMConn Pap PapAddressesProv (PapAddrProv) GROUP Nsta Vgs IpMConn Pap Operational (Oper) GROUP Nsta Vgs IpMConn Pap AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n PassiveAccessPoint* *Nsta/n Vgs IpMConn/n PassiveAccessPoint* *Nsta/n Conn/n PassiveAccessPoint* This component defines ATM SVC terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs IpMConn Pap PapAddressesProv (PapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Pap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming connection setup request. If *expectedRemoteAddress* is not empty, only matching connections are considered for acceptance. If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, the component processes connection requests from any remote address.
Mib	Vgs

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Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Vgs IpMConn Pap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the ATM address of the access point. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default can not be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Nsta Vgs IpMConn Pap Operational (Oper)

Properties	Operational
Description	This group contains status information common to the *PassiveAccessPoint* and *AddresslessPassiveAccessPoint* components.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Pap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***failed,*** it indicates that an error occurred

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	while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle failed
Default	No default

GROUP Nsta Vgs IpMConn Pap **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Pap **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Pap **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Pap **lastTearDownDiagnostic (diag)**

Access	Read only

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Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs IpMConn SpvcAccessPoint (SpvcAp)

Groups	GROUP Nsta Vgs IpMConn SpvcAp Provisioned (Prov) GROUP Nsta Vgs IpMConn SpvcAp SpvcApAddressessProv (SpvcApAddrProv) GROUP Nsta Vgs IpMConn SpvcAp Operational (Oper) GROUP Nsta Vgs IpMConn SpvcAp AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n SpvcAccessPoint* *Nsta/n Vgs IpMConn SpvcAccessPoint* *Nsta/n Conn/n SpvcAccessPoint* This component defines ATM SPVC originating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

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VERB Restart Nsta Vgs IpMConn SpvcAp

Impact	Service
Description	*Restart Nsta/n Vgs Control/n SpvcAccessPoint* *Restart Nsta/n Vgs IpMConn SpvcAccessPoint* *Restart Nsta/n Conn/n SpvcAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs IpMConn SpvcAp **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **atmServiceCategory (service)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable

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bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *SpvcAp* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *SpvcAp* is an *IpMConn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **peakCellRate (pcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **sustainedCellRate (scr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s

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Default	0

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **maximumBurstSize (mbs)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **retryLimit (limit)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs IpMConn SpvcAp **SpvcApAddressessProv (SpvcApAddrProv)**

Properties	Provisioned
Description	This group contains NSAP address provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **localAddress (localAddr)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is

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provided.

If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.

Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **remoteVpiVci (rVpiVci)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for an *SpvcAp* component.
Mib	Vgs
Values	Integer Sequence (0..255; 1..65535)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **addressToCall (addrToCall)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* application in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to set up a connection to the first address in the list and then continues as before.
Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs IpMConn SpvcAp **Operational (Oper)**

Properties	Operational

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Description	This group contains operational status information for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn SpvcAp svcStatus (status)

Access	Read only
Description	This attribute specifies the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* for consecutive connection set up attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp lastSetupFailureCause (failCause)

Access	Read only
Description	This attribute contains the cause code in the last call release message following an unsuccessful call set up attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)

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Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **lastSetupFailureDiagnostic (failDiag)**

Access	Read only
Description	This attribute contains the diagnostic code in the last call release message following an unsuccessful call set up attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **retryTimeRemaining (timer)**

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches ***0*** an attempt will be made to establish the connection. When the timer is not running a value of ***0*** is returned.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **retryFailures (failures)**

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to ***0*** whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to ***0*** when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs IpMConn SpvcAp **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

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ATTRIBUTE Nsta Vgs IpMConn SpvcAp **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp **lastTearDownDiagnostic (diag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs IpMConn **AtmConnection (AtmCon)**

Groups	GROUP Nsta Vgs IpMConn AtmCon Operational (Oper)
Scope	Device

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Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs IpMConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs IpMConn VirtualRouterAccessPoint (VrAp)

Groups	GROUP Nsta Vgs IpMConn VrAp Provisioned (Prov)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n VrAp* *Nsta/n Vgs IpMConn VrAp* *Nsta/n Vgs DbgAccess VrAp* This component represents a point of access to a *VirtualRouter* component, which provides an IP forwarding functionality to this *Nsta/n Vgs* component hierarchy. If at least one *VrAp* component is used within a *Nsta/n Vgs* component hierarchy, then all IP network access from within that hierarchy must be via *VrAp* components.

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In addition, a *VCac* component cannot be provisioned within a *Nsta/n Vgs* component hierarchy which contains a *VrAp* component.

Mib: Vgs

Common Verbs: Help, List, Display, Add, DELete

GROUP Nsta Vgs IpMConn VrAp Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for the *VrAp* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs IpMConn VrAp subnetAccessName (subnet)

Access: Read and write

Description: This attribute specifies the *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance to be used by this *VrAp*.

The value of the *ipAddr* attribute defined by the parent of this *VrAp* must belong to the subnet defined by the specified *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance.

Mib: Vgs

Values: The name of the component

Default: No default

COMPONENT Nsta Vgs SimpleGatewayCtrlProt (Sgcp)

Groups: GROUP Nsta Vgs Sgcp Provisioned (Prov)

Scope: Device

Description: *Nsta/n Vgs SimpleGatewayCtrlProt*

This component provides an interface to an SGCP based media gateway controller using the SGCP protocol.

Mib: Vgs

Common Verbs: Help, List, Display, Add, DELete

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GROUP Nsta Vgs Sgcp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Sgcp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Sgcp rsipMessages (rsipM)

Access	Read and write
Description	This attribute specifies if RSIP message generation is enabled or disabled. When a value of ***disabled*** is provisioned then no RSIP messages are generated. When a value of ***enabled*** is provisioned then RSIP messages are generated. The value to be provisioned is determined by the ability of the media gateway controller to receive RSIP messages. Incorrect provisioning of this value (to ***disabled***) could cause failure conditions to be wrongly diagnosed. Incorrect provisioning of this value (to ***enabled***) causes RSIP messages to be discarded by the media gateway controller.
Mib	Vgs
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs Sgcp defaultServiceMgrName (defSmn)

Access	Read and write
Description	This attribute specifies the default remote name for all SGCP messages when no other remote name can be determined (from the Notified Entity or the source address of the last message received). (Note: The Notified Entity is a host name or IP address). This attribute is also used for all RSIP messages. A remote name does not need to be provisioned, but if it is, it is used to look up an IP address on a DNS server.
Mib	Vgs
Values	String (0..255, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Sgcp defaultServiceMgrPort (defSmp)

Access	Read and write
Description	This attribute specifies the default remote UDP port for all SGCP messages transmitted if no other remote port can be determined (from the notified entity or the source address of the last message received). This attribute is also used for all RSIP messages.

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Mib	Vgs
Values	Decimal (1..65535)
Default	2427

ATTRIBUTE Nsta Vgs Sgcp maxTxRetries (maxTxRetries)

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of an SGCP protocol message. If no reply is received following the transmission of an SGCP protocol message, it is retransmitted according to the number of times specified by this attribute, to the same IP address. If a reply is still not received, a different IP address may be attempted which is obtained from (and in the following order): - the Notified Entity - the source address of the last message received or - the *defaultServiceMgrName* attribute. A value of ***0*** indicates no retransmissions.
Mib	Vgs
Values	Decimal (0..5)
Default	2

ATTRIBUTE Nsta Vgs Sgcp initialTxRetryTime (initTxRetryTime)

Access	Read and write
Description	This attribute specifies the initial retry time for an SGCP protocol message. If no reply is received following the transmission of an SGCP protocol message, the first retransmission (subject to the number of retransmissions specified by the *maxTxRetries* attribute) occurs after the time-out specified by this attribute. Subsequent retransmission time-outs randomly increase, subject to the maximum value specified by the *maxTxRetryTime* attribute. The initial retry time is rounded down to the nearest multiple of 100 milliseconds. This value is ignored if the *maxTxRetries* attribute is set to ***0***.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	300

ATTRIBUTE Nsta Vgs Sgcp maxTxRetryTime (mTxRetryTime)

Access	Read and write
Description	This attribute specifies the maximum retransmission time for an SGCP protocol message.

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	If no reply is received following the transmission of an SGCP protocol message, the time-outs between retransmissions randomly increase, subject to the maximum value specified by this attribute. This value is ignored if the value of the *maxTxRetries* attribute is ***0*** or ***1***. The maximum retransmission time is rounded down to the nearest multiple of 100 milliseconds. This value must be greater than, or equal to, the value of the *initialTxRetryTime* attribute.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	1000

ATTRIBUTE Nsta Vgs Sgcp mfInitialTxRetryTime (mfInitTxRetryTime)

Access	Read and write
Description	This attribute specifies the initial retry time for an MF SGCP protocol message. If no reply is received following the transmission of an MF SGCP protocol message, the first retransmission (subject to the number of retransmissions specified by the *maxTxRetries* attribute) occurs after the time-out specified by this attribute. Subsequent retransmission time-outs randomly increase, subject to the maximum value specified by the *mfMaxTxRetryTime* attribute. This value is ignored if the *maxTxRetries* attribute is set to ***0***.
Mib	Vgs
Values	Decimal (1..20)
Units	seconds
Default	3

ATTRIBUTE Nsta Vgs Sgcp mfMaxTxRetryTime (mfMaxTxRetryTime)

Access	Read and write
Description	This attribute specifies the maximum retransmission time for an MF SGCP protocol message. If no reply is received following the transmission of an MF SGCP protocol message, the time-outs between retransmissions randomly increase, subject to the maximum value specified by this attribute. This value is ignored if the value of the *maxTxRetries* attribute is ***0*** or ***1***. This value must be greater than, or equal to, the value of the *mfInitialTxRetryTime* attribute.
Mib	Vgs
Values	Decimal (1..20)

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Units	seconds
Default	5

ATTRIBUTE Nsta Vgs Sgcp udpPortConnection (udpConn)

Access	Read and write
Description	This attribute specifies the link to the *Nsta/n Vgs CtrlConn/n UdpPort/n* component that defines the UDP port access to the IP network for the SGCP protocol.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs Sgcp mfMaxTxRetries (mfMaxTxRetries)

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of an MF SGCP protocol message. If no reply is received following the transmission of an MF SGCP protocol message, it is retransmitted the number of times specified by this attribute, to the same IP address. If a reply is still not received, a different IP address may be attempted which is obtained from (and in the following order): - the Notified Entity - the source address of the last message received or - the *defaultServiceMgrName* attribute. A value of ***0*** indicates no retransmissions.
Mib	Vgs
Values	Decimal (0..5)
Default	2

COMPONENT Nsta Vgs VoiceCallAdmissionControl (VCac)

Groups	GROUP Nsta Vgs VCac Provisioned (Prov) GROUP Nsta Vgs VCac Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs VoiceCallAdmissionControl* This component provides the voice Call Admission Control function for the media gateway. The voice call admission control function actively refuses and deletes calls requested by the controller based on the resources allocated to the media gateway. The resources allocated consist of the internal resources of the media gateway hardware, the quality of service provided by the ATM trunk

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used for the call and the backplane bandwidth within the shelf allocated to the media gateway.

If this component is not present then the voice Call Admission Control function is not performed by the media gateway.

Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs VCac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Nsta Vgs VCac* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs VCac packetLossProbabilityIndex (plpIndex)

Access	Read and write
Description	This attribute specifies the target packet loss probability for the media gateway, and is an input to the Call Admission Control algorithm. 10 to the power of the *packetLossProbabilityIndex* is the packet loss probability used in the algorithm, for example if the attribute is provisioned to -3, then 10 to the power of -3 is 0.001, or 1 in 1000.
Mib	Vgs
Values	Signed (-6..-2)
Default	-3

ATTRIBUTE Nsta Vgs VCac averageActiveDuration (avActive)

Access	Read and write
Description	This attribute specifies the average duration of the active voice period (also known as talk-spurt) for the media gateway, and is an input to the Call Admission Control algorithm.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	400

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ATTRIBUTE Nsta Vgs VCac sourceActiveTime (srcActive)

Access	Read and write
Description	This attribute specifies the percentage of time that the source is active for the media gateway, and is an input to the Call Admission Control algorithm.
Mib	Vgs
Values	Decimal (20..100)
Units	%
Default	40

ATTRIBUTE Nsta Vgs VCac allocatedShelfBandwidth (shBw)

Access	Read and write
Description	This attribute specifies the percentage of shelf backplane bandwidth allocated to the media gateway, and is an input to the Call Admission Control algorithm. The attribute is used by the Call Admission Control algorithm as a limit for the anticipated use of shelf backplane bandwidth resources. The purpose of this attribute is to limit the amount of shelf backplane resources available to a media gateway, and is dependent on the number of VSP cards inserted into a shelf. Reducing this value will have no effect on existing calls, but it will prevent any further calls being made until existing calls clear and release their bandwidth. The total sum of all *VCac* component *allocatedShelfBandwidth* attributes within a shelf may not exceed 100%.
Mib	Vgs
Values	Decimal (10..100)
Units	%
Default	25

ATTRIBUTE Nsta Vgs VCac deleteCallsOnVbd (delOnVbd)

Access	Read and write
Description	This attribute specifies whether calls that autonomously transition from voice to voice band data (VBD) are deleted if the new bandwidth requirements of the call exceed the bandwidth available to the voice CAC function. A value of ***enabled*** will delete violating transitioning calls.

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A value of ***disabled*** will not delete transitioning calls.

Mib	Vgs
Values	disabled enabled
Default	enabled

GROUP Nsta Vgs VCac Operational (Oper)

Properties	Operational
Description	This group contains operational data for the *Nsta Vgs VCac* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs VCac refusedNetworkBw (nbRef)

Access	Read only
Description	This attribute counts the connection requests that have been refused by the voice CAC function due to network bandwidth limitations since the component was activated. The attribute wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs VCac refusedInternalResources (irRef)

Access	Read only
Description	This attribute counts the connection requests that have been refused by the voice CAC function due to internal resource limitations since the component was activated. Increases in this counter indicate that either the provisioned attribute *allocatedShelfBandwidth* is too low for the network engineering model applied, or that the network has been incorrectly engineered such that the maximum bandwidth required by on-net calls (that is AAL2-AAL2 switched calls) exceeds the voice gateway bandwidth available. The attribute wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs VCac deletedNetworkBw (nbDel)

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Access	Read only
Description	This attribute counts the connection requests that have been deleted by the voice CAC function due to network bandwidth limitations since the component was activated. The attribute wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs VCac deletedInternalResources (irDel)

Access	Read only
Description	This attribute counts the connection requests received that have been deleted by the voice CAC function due to internal resource limitations since the component was activated. The attribute wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs VCac shelfUsage (shUsage)

Access	Read only
Description	This attribute indicates the current estimated percentage of the shelf backplane capacity that is being utilized by the media gateway. The value may go down as well as up.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Nsta Vgs VCac peakShelfUsage (pShUsage)

Access	Read and write
Description	This attribute indicates the maximum percentage of the allocated shelf backplane capacity that has been reached since the component was activated.
Mib	Vgs
Values	Decimal (0..100)

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Units	%
Default	No default

ATTRIBUTE Nsta Vgs VCac internalUsage (intUsage)

Access	Read only
Description	This attribute indicates the current percentage of the internal media gateway capacity that is being utilized by the media gateway. The value may go down as well as up.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Nsta Vgs VCac peakinternalUsage (pIntUsage)

Access	Read and write
Description	This attribute indicates the maximum percentage of the internal media gateway capacity that has been reached since the component was activated.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Nsta Vgs IsdnUserAdaption (Iua)

Groups	GROUP Nsta Vgs Iua Provisioned (Prov) GROUP Nsta Vgs Iua OsiState (State) GROUP Nsta Vgs Iua Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs IsdnUserAdaption*

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This component provides an optional ISDN User Adaptation Layer for the transporting of PRI signaling over SCTP.

Mib Vgs

Dyn. Subcomp. COMPONENT Nsta Vgs Iua ApplicationServerProcess (Asp)

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs Iua Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioning data for the *Iua* component, which provides access to the IP network.

Mib Vgs

ATTRIBUTE Nsta Vgs Iua sctpPortConnection

Access Read and write

Description This attribute specifies a link to an *Nsta/n Vgs Ctrl/n SctpPort/n* component, which provides transport over the IP network.

The linked *Nsta/n Vgs Ctrl/n SctpPort/n* must be under the same *Nsta/n Vgs* as this *Iua* subcomponent.

Mib Vgs

Values Link (Service, linkToApplication)

Default No default

ATTRIBUTE Nsta Vgs Iua recoveryTimer

Access Read and write

Description This attribute specifies how long incoming messages are buffered while the Application Server is recovering from a failure (indicated by an *asStatus* value of ***pending***).

Mib Vgs

Values Decimal (1..5)

Units seconds

Default 3

GROUP Nsta Vgs Iua OsiState (State)

Properties Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs lua adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs lua operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Nsta Vgs lua usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs lua Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the *lua* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs lua asStatus

Access	Read only
Criticality	Process
Description	This attribute indicates the status of the Application Server. The possible values are: ***active*** - the ASP is available and is serving as the primary instance (handling traffic) ***up*** - the ASP is available and is serving as the standby instance (not handling traffic) ***down*** - the ASP is unavailable ***pending*** - the currently active ASP became inactive or the SCTP association was lost. A recovery process is in operation.
Mib	Vgs
Values	up down active pending

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Default	No default

COMPONENT Nsta Vgs lua ApplicationServerProcess (Asp)

Instance	address [IP address] port [Decimal (1..65535)]
Groups	GROUP Nsta Vgs lua Asp Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs lua ApplicationServerProcess/<ip address>,<sctp port>* This component represents an Application Server Process (Media Gateway Controller) linked to the Signaling Gateway. The IP address and SCTP port number used in the instance value refer to the remote connection.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs lua Asp Operational (Oper)

Properties	Operational
Description	This group contains attributes which describe the *Asp* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs lua Asp status

Access	Read only
Description	This attribute indicates the status of the Application Server Process. The possible values are: ***active*** - the ASP is available and application traffic is flowing (serving as the primary instance) ***up*** - the ASP is available but application traffic is not flowing ***down*** - the ASP is unavailable
Mib	Vgs
Values	up down active
Default	No default

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COMPONENT Nsta Vgs LocalAnnouncements

Groups	GROUP Nsta Vgs LocalAnnouncements Provisioned (Prov) GROUP Nsta Vgs LocalAnnouncements OsiState (State) GROUP Nsta Vgs LocalAnnouncements Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs LocalAnnouncements* This component provides the control and status of the Local Announcement facility.
Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Zero Nsta Vgs LocalAnnouncements

Impact	Service
Description	*Zero Nsta/n Vgs LocalAnnouncements* This verb is used to re-initialize attributes which record peak values.

GROUP Nsta Vgs LocalAnnouncements Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the Local Announcement facility.
Mib	Vgs

ATTRIBUTE Nsta Vgs LocalAnnouncements fileName

Access	Read and write
Description	The attribute specifies the filename (without extension) of the announcement fileset which is used for the *LocalAnnouncements* component. The files are located in /user/pvg/announcements/. Changing the value will not affect announcements in progress. The specified fileset is automatically transferred from the CP to the FP before it is used and the file currently being used can be determined from the *currentFileName* attribute. This attribute must be supplied.
Mib	Vgs
Values	String (0..40, ASCII)

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Default	""

ATTRIBUTE Nsta Vgs LocalAnnouncements **defaultLanguage**

Access	Read and write
Description	This attribute specifies the language to be used on the announcement when no language is provided via the Media Gateway Controller. This value may be overridden on a per *Brag* component basis in the *Nsta/n Vgs Brag/n AnnouncementLanguage* component. Possible values: any 3 character ASCII string (lower case a-z) for example "eng", or an empty string. If the value is empty, no language is specified when looking up announcements. When the Media Gateway Controller specifies a language value, it overrides the provisioned values in the Media Gateway.
Mib	Vgs
Values	String (0..3, ASCII)
Default	""

GROUP Nsta Vgs LocalAnnouncements **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs LocalAnnouncements **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Vgs

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs LocalAnnouncements operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Vgs

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs LocalAnnouncements usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

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Mib	Vgs
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Nsta Vgs LocalAnnouncements availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The

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operationalState is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — Vgs

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Nsta Vgs LocalAnnouncements proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase.

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If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — Vgs

Set of
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Nsta Vgs LocalAnnouncements controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — Vgs

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Nsta Vgs LocalAnnouncements alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Vgs

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Nsta Vgs LocalAnnouncements **standbyStatus (osiStby)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

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	The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Vgs
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Nsta Vgs LocalAnnouncements unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Vgs
Values	false true
Default	false

GROUP Nsta Vgs LocalAnnouncements Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *LocalAnnouncements* component failure.
Mib	Vgs

ATTRIBUTE Nsta Vgs LocalAnnouncements currentFileName

Access	Read only
Description	This attribute indicates the name (without path or extension) of the current announcement file which *LocalAnnouncements* is using for new announcements. The value may be different from that specified by the *fileName* attribute if the value of *fileTransferStatus* attribute is not ***complete***. If no file has been transferred, then this attribute is an empty string.
Mib	Vgs
Values	String (0..40, ASCII)
Default	No default

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ATTRIBUTE Nsta Vgs LocalAnnouncements **fileTransferStatus**

Access	Read only
Description	This attribute indicates the status of the transfer of the announcement file from the CP to the FP. Possible values are: ***inProgress***: The file as specified in *fileName* is being transferred. Any announcement request are serviced using the file specified in *currentFileName*. ***complete***: The file transfer is complete. The file as specified in *fileName* is the same as the file specified in *currentFileName.* ***missing***: The system cannot find the complete fileset specified in *fileName* on the CP. The current file is left as is. An alarm is raised in this state. The FP will poll for files until transfer can commence. ***fileTooLong***: The current fileset as defined in *fileName* on the CP is too long to be loaded successfully. The current file is left as is. An alarm is raised in this state. The FP will poll to look for changes in file length or timestamp. Reduction of file length to within the acceptable limit, causes automatic download to occur once it is deemed that the file is stable. ***fileError***: The current fileset as defined in *fileName* on the CP has failed sanity checks after download, and is not to be used as an active load. The current file is left as is. An alarm is raised in this state. The FP will poll to look for changes in file length or timestamp. This causes automatic download to occur once it is deemed that the file is stable. ***cpNotResponding***: The CP is not responding. The CP may be busy or the disk may be locked. The FP will poll to check for CP availability.
Mib	Vgs
Values	inProgress complete missing fileTooLong fileError cpNotResponding
Default	No default

ATTRIBUTE Nsta Vgs LocalAnnouncements **unknownNameRequests**

Access	Read only
Description	This attribute counts the announcement requests rejected due to unknown name or unsupported name or language combination. The value is reset

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	to zero whenever a new announcement file is transferred or the Supplementary Services Module is reset.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs LocalAnnouncements blockedRequests

Access	Read only
Description	This attribute counts the announcement requests rejected due to insufficient resource. The value is reset to zero whenever the Supplementary Services Module is reset.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs LocalAnnouncements announcementResourceInUse

Access	Read only
Description	This attribute indicates the instantaneous percentage of the local announcement resource in use.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Nsta Vgs LocalAnnouncements peakAnnouncementResourceUsed

Access	Read only
Description	This attribute indicates the peak announcement resource used since this attribute was last reset. The value of this attribute can be reset to 0 by the *Zero* command.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Nsta Vgs DigitCollection

Groups	GROUP Nsta Vgs DigitCollection Provisioned (Prov) GROUP Nsta Vgs DigitCollection Operational (Oper)

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Scope	Device
Description	*Nsta/n Vgs DigitCollection* This component represents the digit collection capabilities of the PVG switched voice application. These capabilities include detection of digits on the TDM circuit side, to collate such digits in accordance with digit maps provided by the Call Server, and to report such digit strings to the Call Server when the digit maps completion criteria are met. If no DigitCollection component is provisioned for a given Vgs, digit collection is disabled for that Vgs. The DigitCollection component must not be provisioned for a Vgs which has an Sgcp subcomponent.
Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Zero **Nsta Vgs DigitCollection**

Impact	Service
Description	*Zero Nsta/n Vgs DigitCollection* This verb is used to re-initialize attributes which record peak values.

GROUP **Nsta Vgs DigitCollection** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioning data for the *Vgs DigitCollection* component.
Mib	Vgs

ATTRIBUTE **Nsta Vgs DigitCollection** **initialDigitTimer**

Access	Read and write
Description	This attribute specifies the value of the Initial Digit Time-out to be used in digit collection. This is the time-out value between request and entering the first number. On expiring of this time a notification is sent to the Media Gateway Controller. The value of this attribute is used when no value is supplied by the controller.
Mib	Vgs
Values	Decimal (1..99)
Units	seconds

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Default	16

ATTRIBUTE Nsta Vgs DigitCollection **shortInterDigitTimer**

Access	Read and write
Description	This attribute specifies the value of the short Inter-Digit Time-out to be used in digit collection. This timer is reset after each digit key depressed is received. On expiring of this time a notification is sent to the Media Gateway Controller. The value of this attribute is used when no value is supplied by the controller.
Mib	Vgs
Values	Decimal (1..99)
Units	seconds
Default	4

ATTRIBUTE Nsta Vgs DigitCollection **longInterDigitTimer**

Access	Read and write
Description	This attribute specifies the value of the long Inter-Digit Time-out to be used in digit collection. This timer is reset after each digit key depressed is received. On expiring of this time a notification is sent to the Media Gateway Controller. The value of this attribute is used when no value is supplied by the controller.
Mib	Vgs
Values	Decimal (1..99)
Units	seconds
Default	16

ATTRIBUTE Nsta Vgs DigitCollection **longDigitTimerDuration**

Access	Read and write
Description	This attribute specifies the duration after which a digit (* or #) will be recognized as ‘long’. The value used is dependent on the Media Gateway Controller. This attribute defines a default value to be used when a value is not supplied by the controller.
Mib	Vgs
Values	Decimal (0.1..9.9)
Units	seconds
Default	2.0

GROUP Nsta Vgs DigitCollection **Operational (Oper)**

Properties	Operational

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Description	This group contains operational data for the *Nsta Vgs* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DigitCollection rejectedCollectionRequests

Access	Read only
Description	This attribute counts the number of digit collection requests rejected due to lack of resources. A persistent increase indicates an engineered mismatch between demand for and capacity of the digit collection resources. This counter wraps to zero when its maximum is reached.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs DigitCollection peakCollectionsInProgress

Access	Read only
Description	This attribute indicates the peak of the proportion of digit collection resources (in percentage terms) that have been used at any point since this figure was last reset. Endpoints that have only been requested to collect mid-call triggers are excluded from this figure.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Nsta Vgs Aal2SvcService (Aal2Svc)

Groups	GROUP Nsta Vgs Aal2Svc Provisioned (Prov) GROUP Nsta Vgs Aal2Svc Operational (Oper)
Scope	Device

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Description	*Nsta/n Vgs Aal2SvcService* This component creates and enables the AAL2 SVC service.
Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs Aal2Svc Profile (Prof)
Dyn. Subcomp.	COMPONENT Nsta Vgs Aal2Svc TrunkConnection (TConn)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Aal2Svc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Aal2SvcService* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc svcSetupTimeout (timeout)

Access	Read and write
Description	This attribute specifies the length of time allowed for an SVC setup before calls waiting for that SVC are cleared. This attribute is used when trunks are created and does not affect existing trunks.
Mib	Vgs
Values	Decimal (50..50000)
Units	msec
Default	1000

ATTRIBUTE Nsta Vgs Aal2Svc svcPreCreation (preCreation)

Access	Read and write
Description	This attribute specifies whether pre-creation of SVCs is enabled. If *svcPreCreation* is ***enabled*** then an SVC setup is initiated when the bandwidth available in existing VCCs between two NSAP addresses is down to a level such that a new SVC would be required for the next call.
Mib	Vgs
Values	enabled disabled

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Default	enabled

ATTRIBUTE Nsta Vgs Aal2Svc **autocalcTrafficPrms (autocalc)**

Access	Read and write
Description	This attribute specifies whether the ATM traffic parameters are automatically calculated based on the value of the *maxNumberOfAal2Trunks* attribute of the *Aal2SvcProfile* component. When the *autocalcTrafficPrms* is set to ***enabled*** any provisioned values of the ATM traffic parameters of the *Aal2SvcProfile* subcomponent are ignored and the values are calculated automatically based on an assumption of G.711 CODECs and no silence suppression. When the *autocalcTrafficPrms* is set to ***disabled*** the values specified in the attributes of the *Aal2SvcProfile* component are used. This attribute is used when trunks are created and does not affect existing trunks.
Mib	Vgs
Values	enabled disabled
Default	enabled

GROUP Nsta Vgs Aal2Svc **Operational (Oper)**

Properties	Operational
Description	This group contains operational data for the *Aal2SvcService* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc **activeOriginatedSvcs (activeOrig)**

Access	Read only
Description	This attribute indicates the number of currently active SVCs originated by this gateway.
Mib	Vgs
Values	Decimal (0..500)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc **activeTerminatedSvcs (activeTerm)**

Access	Read only
Description	This attribute indicates the number of currently active SVCs terminated by this gateway.
Mib	Vgs

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Values	Decimal (0..500)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc originatedSvcs (origin)

Access	Read only
Description	This attribute counts the number of SVCs originated by the gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc terminatedSvcs (term)

Access	Read only
Description	This attribute counts the number of SVCs terminated by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc activeSvcsDeleted (activeDel)

Access	Read only
Description	This attribute counts the number of SVCs deleted while in the active state carrying traffic. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc svcsPending (pending)

Access	Read only
Description	This attribute indicates the number of SVC creation requests currently requested but not yet established.
Mib	Vgs
Values	Decimal (0..500)
Default	No default

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ATTRIBUTE Nsta Vgs Aal2Svc emptySvcCount (empty)

Access	Read only
Description	This attribute indicates the number of SVCs that are enabled but not carrying narrowband calls.
Mib	Vgs
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc networkReleaseCount (releaseCount)

Access	Read only
Description	This attribute counts the number of ATM network releases received by the *Aal2SvcService* component. This provides an indication of the total number of SVCs or SVC attempts that failed due to ATM network conditions. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc neverUsedSvcsDeleted (neverUsedDel)

Access	Read only
Description	This attribute counts the number of SVCs that were created by this gateway and deleted without carrying any traffic. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc unavailableSvcCount (unavail)

Access	Read only
Description	This attribute indicates the number of SVCs currently unavailable to trunk selection.
Mib	Vgs
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc narrowbandConnectionsRefused (connsRefused)

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Access	Read only
Description	This attribute counts the narrowband connections rejected due to failure of the SVC creation process. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc svcSetupTimeoutCount (timeoutCount)

Access	Read only
Description	This attribute counts the number of times the SVC setup timeout expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc overloadedSvcCount (overloaded)

Access	Read only
Description	This attribute counts the number of times an SVC was overloaded. An SVC is overloaded when narrowband calls are simultaneously placed on the SVC at both its originating and terminating ends, causing the *activeConnections* attribute of the *TConn* component to exceed the *maxNumberAal2Trunks* specified in the *Profile* component. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcSetupTimeoutNsap (lastTimeoutNsap)

Access	Read only
Description	This attribute indicates the NSAP address of the last SVC attempt for which the SVC setup timeout attribute expired. If the string is empty, then such a timeout has never occurred.
Mib	Vgs
Values	String (0..40, ASCII)
Default	No default

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ATTRIBUTE Nsta Vgs Aal2Svc lastSvcSetupFailureNsap (supFailNsap)

Access	Read only
Description	This attribute indicates the remote NSAP address of the last SVC attempt for which the setup request failed. If the string is empty, SVC setup failures have occurred.
Mib	Vgs
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcSetupFailureCause (supCause)

Access	Read only
Description	This attribute indicates the cause of the the last SVC setup failure, as defined in the ATM Forum ATM User-Network Interface Specification. This attribute is only meaningful if the *lastSvcSetupFailureNsap* attribute is not empty.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcSetupFailureDiagnostic (supDiag)

Access	Read only
Description	This attribute indicates the diagnostic code associated with the last SVC setup failure, as defined in the ATM Forum ATM User-Network Interface Specification. This attribute is only meaningful if the *lastSvcSetupFailureNsap* attribute is not empty.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcAbnormalTearDownNsap (tdNsap)

Access	Read only
Description	This attribute indicates the remote NSAP address of the last SVC which did not experience a normal tear down. If the string is empty, an abnormal SVC tear down has not occurred.
Mib	Vgs
Values	String (0..40, ASCII)

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Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcAbnormalTearDownCause (tdCause)

Access	Read only
Description	This attribute indicates the tear down cause for the last SVC that did not experience a normal tear down, as defined in the ATM Forum ATM User-Network Interface Specification. This attribute is only meaningful if the *lastSvcAbnormalTearDownNsap* attribute is not empty.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcAbnormalTearDownDiagnostic (tdDiag)

Access	Read only
Description	This attribute indicates the tear down diagnostic code associated with the last SVC which did not experience a normal tear down, as defined in the ATM Forum ATM User-Network Interface Specification. This attribute is only meaningful if the *lastSvcAbnormalTearDownNsap* attribute is not empty.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs Aal2Svc Profile (Prof)

Instance	Decimal (1..1)
Groups	GROUP Nsta Vgs Aal2Svc Prof Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs Aal2Svc Aal2SvcProfile/n* This component provides the parameters for automatically created SVCs.

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The attributes of this component are only used when SVCs are created and do not affect values used by an existing trunk.

Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Aal2Svc Prof Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Aal2SvcProfile* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc Prof holdOverTime (hoTime)

Access	Read and write
Description	This attribute specifies the maximum period of time before a partially filled AAL2 packet is scheduled for transmission. It is also referred to as "combined use timer" (Timer_CU), in the ITU-T I.363.2. A value of ***0*** specifies that an ATM cell is transmitted as soon as an AAL2 packet is placed in the cell. Each ATM cell therefore contains one AAL2 packet. The *holdOverTime* affects the packet delay and the bandwidth used by the connection. The longer the delay the higher the bandwidth efficiency of the ATM connection and vice versa. The *holdOverTime* is rounded to the nearest multiple of 0.125 milliseconds.
Mib	Vgs
Values	Decimal (0.000..15.875)
Units	msec
Default	2.000

ATTRIBUTE Nsta Vgs Aal2Svc Prof maxNumberAal2Trunks (maxTrunks)

Access	Read and write
Description	This attribute specifies the maximum number of AAL2 trunks that may be allocated on this ATM trunk. The local node may allocate no more than this number of trunks. The number of currently active trunks is indicated by the *activeConnections* attribute of the *Aal2SvcConnection* component.
Mib	Vgs
Values	Decimal (1..247)

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Default	4

ATTRIBUTE Nsta Vgs Aal2Svc Prof **svcPersistence (persistence)**

Access	Read and write
Description	This attribute specifies the length of time that an AAL2 SVC is kept up after the last narrowband call to use it has been deleted. This attribute is used to modify the SVC caching system. Longer values result in larger caches of SVCs.
Mib	Vgs
Values	Decimal (0..600)
Units	seconds
Default	180

ATTRIBUTE Nsta Vgs Aal2Svc Prof **atmServiceCategory (service)**

Access	Read and write
Description	This attribute specifies the ATM Service Category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". The real-time variable bit rate service may support statistical multiplexing of real time sources.
Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr)
Default	rtVariableBitRate

ATTRIBUTE Nsta Vgs Aal2Svc Prof **peakCellRate (pcr)**

Access	Read and write
Description	This attribute specifies the peak cell rate of the ATM connection. The value is ignored if the *autoCalcTrafficPrms* attribute has the value ***enabled***. Otherwise, the value must be non-zero.
Mib	Vgs

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Values	Decimal (0..2147483647)
Units	cell/s
Default	800

ATTRIBUTE Nsta Vgs Aal2Svc Prof **sustainedCellRate (scr)**

Access	Read and write
Description	This attribute specifies the sustained cell rate of the ATM connection. The value is ignored if the *autoCalcTrafficPrms* attribute has the value ***enabled***. Otherwise, the value must be non-zero if the *atmServiceCategory* attribute is ***rtVariableBitRate***, and zero if the atmServiceCategory is ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	800

ATTRIBUTE Nsta Vgs Aal2Svc Prof **maximumBurstSize (mbs)**

Access	Read and write
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. The value is ignored if the *autoCalcTrafficPrms* attribute has the value ***enabled***. Otherwise, the value must be non-zero if the *atmServiceCategory* attribute is ***rtVariableBitRate***, and zero if the atmServiceCategory is ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	1

COMPONENT Nsta Vgs Aal2Svc **TrunkConnection (TConn)**

Instance	Decimal (0..4095)
Groups	GROUP Nsta Vgs Aal2Svc TConn Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs Aal2Svc Aal2SvcTrunkConnectionl/n* This dynamic component provides visibility for all automatically created SVCs.

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This component is present if and only if the corresponding ATM trunk is available for use by narrowband calls. It is thus present immediately after the SVC is established. It is also present after the SVC has been released from the network for as long as the hold-off timer is running, as indicated by the *holdOverTime* attribute. On expiry of the hold-off timer, the VCC is deleted in the SPM, and this component instance is removed.

Mib	Vgs
Dyn. Subcomp.	COMPONENT Nsta Vgs Aal2Svc TConn AtmConnection (AtmCon)
Common Verbs	Help List Display

GROUP Nsta Vgs Aal2Svc TConn Operational (Oper)

Properties	Operational
Description	This group contains operational data for the *Aal2SvcTConn* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc TConn remoteAddress (rAddr)

Access	Read only
Description	This attribute indicates the ATM address of the node at the remote end of this trunk.
Mib	Vgs
Values	String (1..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn vcci

Access	Read only
Description	This attribute indicates the VCCI for this VCC. The *vcci* attribute value uniquely identifies a VCC between two nodes in a given direction. ATM trunks terminating on different remote nodes may share the same *vcci* attribute value.
Mib	Vgs
Values	Decimal (4096..8191)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn type

Access	Read only

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Description	This attribute indicates whether this ATM VCC was originated or terminated by this AAL2 SVC Service.
Mib	Vgs
Values	originated terminated
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn activeConnections (active)

Access	Read only
Description	This attribute indicates the number of active narrowband connections on this ATM VCC.
Mib	Vgs
Values	Decimal (0..247)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn aal2CpLossStatus (lossStatus)

Access	Read only
Description	This attribute indicates whether an AAL2 common part (CP) loss condition exists. When the condition exists, this attribute is set to ***loss***, otherwise it is set to ***noLoss***. An AAL2 CP loss condition exists if no valid media traffic is being received.
Mib	Vgs
Values	noLoss loss
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn aal2StartFieldErrors (sfErr)

Access	Read only
Description	This attribute counts the number of cells received with an AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) Start Field error. A Start Field error includes a cell with a parity error or a cell in which the packet pointed to by the offset field (OSF) has a packet HEC error. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn aal2SequenceErrors (seqErr)

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Access	Read only
Description	This attribute counts the number of cells received with an unexpected AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Aal2Svc TConn AtmConnection (AtmCon)

Groups	GROUP Nsta Vgs Aal2Svc TConn AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Aal2Svc TConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc TConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs AmrBasicRateGroup (AmrBrag)

Instance	Decimal (0..127)

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Groups	GROUP Nsta Vgs AmrBrag Provisioned (Prov) GROUP Nsta Vgs AmrBrag OsiState (State) GROUP Nsta Vgs AmrBrag Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs AmrBasicRateGroup/n* This component represents a number of TDM connections from the Voice Services Processor (VSP) to the TDM network. The TDM connections are all associated with the same TDM interface. A particular *AmrBrag* is associated with a single E1 channel. Connections on this channel are used to transport AMR-encoded speech. This component defines default processing for all TDM connections on this channel. For each connection, this default processing may be overridden by the controller.
Mib	AmrBrag
Opt. Subcomp.	COMPONENT Nsta Vgs AmrBrag Mtp2
Dyn. Subcomp.	COMPONENT Nsta Vgs AmrBrag WgBragDs0 (Ds0)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs AmrBrag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *AmrBrag* component.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag interfaceName (intName)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to a *Chan* component, which in turn specifies the timeslots for the *AmrBrag.* The attribute must specify an *Lp/n E1/n Chan/n* component. *Lp/n DS1/n Chan/n* components are not supported.
Mib	AmrBrag
Values	Link (Service, applicationFramerName)

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Default	No default

ATTRIBUTE Nsta Vgs AmrBrag defaultRate (defRate)

Access	Read: All Write: All
Description	This attribute specifies the AMR encoding rate to be used for a voice call when no rate is defined during call setup via the call setup protocol.
Mib	AmrBrag
Values	Decimal (12.20)
Units	kbit/s
Default	12.20

ATTRIBUTE Nsta Vgs AmrBrag tdmLogLaw (muALaw)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the G.711 *tdmLogLaw* to use on the TDM side of an NSTA trunk. If set to ***autoConfigured***, then the value used is derived from the facility, namely ***muLaw*** is used for *DS1* trunks, while ***aLawEbi*** would be used by *E1* trunks. For *E1* trunks, ***muLaw*** is not permitted. ***muLaw*** - use muLaw companding, not supported on E1 trunks ***aLawEbi*** - use aLawEbi companding ***aLawAbi*** - use aLawAbi companding ***autoConfigured*** - use companding law appropriate for facility
Mib	AmrBrag
Values	muLaw aLawEbi autoConfigured aLawAbi
Default	autoConfigured

ATTRIBUTE Nsta Vgs AmrBrag lossIntegrationPeriod (intPeriod)

Access	Read: All Write: All
Description	This attribute specifies the interval of time for which a loss of packet condition must persist before the corresponding call is dropped. A value of ***disabled*** specifies that packet loss integration is disabled and therefore call connections will not be dropped due to packet loss.

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Mib	AmrBrag
Values	Decimal (1..50) disabled
Units	seconds
Default	5

ATTRIBUTE Nsta Vgs AmrBrag uplinkGain (uGain)

Access	Read: All Write: All
Description	This attribute specifies the gain or loss to be applied to the TDM uplink. Uplink refers to the connection from the RNC to the MSC.
Mib	AmrBrag
Values	Signed (-15..15)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs AmrBrag downlinkGain (dGain)

Access	Read: All Write: All
Description	This attribute specifies the gain or loss to be applied to the TDM downlink. Downlink refers to the connection from the MSC to the RNC.
Mib	AmrBrag
Values	Signed (-15..15)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs AmrBrag echoCancellation (eCan)

Access	Read: All Write: All
Description	This attribute enables or disables G.168 echo cancellation. The operator may desire to disable this feature if external third-party echo canceller equipment is used in the network. Enabling two echo cancellers within the same network path is not recommended as it may adversely affect voice quality.
Mib	AmrBrag
Values	disabled enabled

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Default	enabled

ATTRIBUTE Nsta Vgs AmrBrag minimumEchoReturnLoss (minEchoRetLoss)

Access	Read: All Write: All
Description	This attribute specifies the minimum echo return loss that can be expected on the line. This attribute has no effect if *echoCancellation* is ***disabled.***
Mib	AmrBrag
Values	Decimal (3; 6)
Units	dB
Default	3

ATTRIBUTE Nsta Vgs AmrBrag echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read: All Write: All
Description	This attribute enables or disables comfort noise generation for the echo cancellation feature. This attribute has no effect if *echoCancellation* is ***disabled***.
Mib	AmrBrag
Values	disabled enabled
Default	enabled

ATTRIBUTE Nsta Vgs AmrBrag echoCancellationTailLength (eCanTail)

Access	Read: All Write: All
Description	This attribute specifies the echo cancellation tail length applied to all timeslots. This attribute has no effect if *echoCancellation* is ***disabled***.
Mib	AmrBrag
Values	Decimal (64)
Units	msec
Default	64

ATTRIBUTE Nsta Vgs AmrBrag backgroundNoiseConditioning (bnc)

Access	Read: All Write: All
Description	This attribute enables or disables background noise conditioning and low-pass filtering.

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disabled - background noise conditioning is disabled
enabled - background noise conditioning is enabled.
enabledLowPass - background noise conditioning and low-pass filtering are enabled.

The background noise conditioning algorithm has an optional post-processing feature that performs low-pass filtering on the noise conditioned signal. Depending on the presence of any other third-part voice quality devices within the network, the operator may desire to disable low-pass filtering to prevent any voice quality degradation due to feature interaction.

Mib: AmrBrag

Values:
disabled
enabled
enabledLowPass

Default: disabled

ATTRIBUTE Nsta Vgs AmrBrag uplinkAutomaticGainControl (upAgc)

Access:
Read: All
Write: All

Description: This attribute enables or disables Automatic Gain Control (AGC) in the uplink direction.

This voice quality feature should be enabled if the operator desires to control variations in call volume in the uplink direction.

Mib: AmrBrag

Values:
disabled
enabled

Default: disabled

ATTRIBUTE Nsta Vgs AmrBrag uplinkAgcTargetLevel (upAgcTargLev)

Access:
Read: All
Write: All

Description: This attribute specifies the target signal power level of the automatic gain control feature in the uplink direction. Automatic Gain Control (AGC) attempts to maintain a consistent call volume at the specified target level. AGC is performed on the signal using this target value before *uplinkGain* is applied.

Mib: AmrBrag

Values: Signed (-30..-9)

Units: dBm0

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Default	-19

ATTRIBUTE Nsta Vgs AmrBrag uplinkAgcMaximumLoss (upAgcMaxLoss)

Access	Read: All Write: All
Description	This attribute specifies the maximum loss that can be applied to any uplink frame by the Automatic Gain Control (AGC) feature. By specifying the maximum loss that AGC can apply to any given frame, this value affects how quickly variations in call volume can be adjusted toward the *upAgcTargLev* when a signal power loss is required for the adjustment.
Mib	AmrBrag
Values	Signed (-14..-1)
Units	dB
Default	-10

ATTRIBUTE Nsta Vgs AmrBrag uplinkAgcMaximumGain (upAgcMaxGain)

Access	Read: All Write: All
Description	This attribute specifies the maximum gain that can be applied to any uplink frame by the Automatic Gain Control (AGC) feature. By specifying the maximum gain that AGC can apply to any given frame, this value affects how quickly variations in call volume can be adjusted toward the *upAgcTargLev* when a signal power gain is required for the adjustment.
Mib	AmrBrag
Values	Decimal (1..14)
Units	dB
Default	10

ATTRIBUTE Nsta Vgs AmrBrag downlinkAutomaticGainControl (dnAgc)

Access	Read: All Write: All
Description	This attribute enables or disables Automatic Gain Control (AGC) in the downlink direction. This voice quality feature should be enabled if the operator desires to control variations in call volume in the downlink direction.
Mib	AmrBrag
Values	disabled enabled
Default	disabled

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ATTRIBUTE Nsta Vgs AmrBrag downlinkAgcTargetLevel (dnAgcTargLev)

Access	Read: All Write: All
Description	This attribute specifies the target signal power level of the automatic gain control feature in the downlink direction. Automatic Gain Control (AGC) attempts to maintain a consistent call volume at the specified target level. AGC is performed on the signal using this target value before *downlinkGain* is applied.
Mib	AmrBrag
Values	Signed (-30..-9)
Units	dBm0
Default	-19

ATTRIBUTE Nsta Vgs AmrBrag downlinkAgcMaximumLoss (dnAgcMaxLoss)

Access	Read: All Write: All
Description	This attribute specifies the maximum loss that can be applied to any downlink frame by the Automatic Gain Control (AGC) feature. By specifying the maximum loss that AGC can apply to any given frame, this value affects how quickly variations in call volume can be adjusted toward the *dnAgcTargLev* when a signal power loss is required for the adjustment.
Mib	AmrBrag
Values	Signed (-14..-1)
Units	dB
Default	-10

ATTRIBUTE Nsta Vgs AmrBrag downlinkAgcMaximumGain (dnAgcMaxGain)

Access	Read: All Write: All
Description	This attribute specifies the maximum gain that can be applied to any downlink frame by the Automatic Gain Control (AGC) feature. By specifying the maximum gain that AGC can apply to any given frame, this value affects how quickly variations in call volume can be adjusted toward the *dnAgcTargLev* when a signal power gain is required for the adjustment.
Mib	AmrBrag
Values	Decimal (1..14)
Units	dB

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Default	10

ATTRIBUTE Nsta Vgs AmrBrag disContinuousTransmission (dtx)

Access	Read: All Write: All
Description	This attribute enables or disables the DTX feature of the AMR speech encoder in the downlink direction. In the uplink direction, the AMR speech decoder is capable of handling DTX SID and No Data frames. DTX should be enabled only if it is supported by the RNC. When enabled, two modes are supported. These modes specify how to handle the scenario that occurs when no data is being transmitted. ***disabled*** - disable DTX ***enabledSilent*** - enable DTX and transmit nothing when no data is being transmitted. ***enabledIuNoData*** - enable DTX and transmit empty IuUP frames when no data is being transmitted.
Mib	AmrBrag
Values	disabled enabledSilent enabledIuNoData
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag backgroundNoiseReduction (bnr)

Access	Read: All Write: All
Description	This attribute enables or disables background noise reduction. The operator may desire to disable this feature if external third-party voice quality equipment that performs a a similar function is used in the network. Performing background noise reduction more than once may degrade voice quality.
Mib	AmrBrag
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag mobileEchoControl (mec)

Access	Read: All Write: All

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Description	This attribute enables or disables mobile echo control. The operator may desire to disable this feature if external third-party voice quality equipment that performs a a similar function is used in the network. Performing mobile echo control more than once may degrade voice quality.
Mib	AmrBrag
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag echoCancellationFixedDelay (eCanFixDel)

Access	Read: All Write: All
Description	This attribute specifies the fixed delay offset for the echo cancellation tail length applied to all timeslots. This attribute has no effect if *echoCancellation* is ***disabled***.
Mib	AmrBrag
Values	Decimal (0..16)
Units	msec
Default	0

ATTRIBUTE Nsta Vgs AmrBrag mobileEchoControlFixedDelay (mecFixDel)

Access	Read: All Write: All
Description	This attribute specifies the fixed delay offset for the mobile echo control tail length applied to all timeslots. The value specified must be a multiple of 20 msec. This attribute has no effect if *mobileEchoControl* is ***disabled***.
Mib	AmrBrag
Values	Decimal (100; 120; 140; 160; 180; 200; 220; 240; 260; 280; 300; 320)
Units	msec
Default	220

ATTRIBUTE Nsta Vgs AmrBrag tandemFreeOperation (tfo)

Access	Read: All Write: All
Description	This attribute enables or disables the Tandem Free Operation (TFO) feature of the Transcoding and Rate Adaptation Unit (TRAU). The operator may desire to enable this feature if he wants to avoid a voice quality degradation introduced by the speech encoding and decoding

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processes in the Core Networks and improve the end-to-end voice quality. When TFO is enabled, the TRAU operates in TFO mode when the terminating network supports it.

The operator may desire to disable this feature if the originating or terminating Core Networks does not support Tandem Free Operation.

Mib: AmrBrag

Values:
disabled
enabled

Default: disabled

ATTRIBUTE Nsta Vgs AmrBrag downlinkAutomaticGainControlTfo (dnAgcTfo)

Access:
Read: All
Write: All

Description: This attribute enables or disables Automatic Gain Control (AGC) in the downlink direction for Tandem Free Operation (TFO) mode. AGC in the downlink may be turned off for TFO mode and still on for the normal operations.

This voice quality feature should be enabled if the operator desires to control variations in call volume in the downlink direction for TFO mode. This attribute has no effect if *tandemFreeOperation* is ***disabled***.

disabled - downlink AGC is disabled for TFO mode
enabled - downlink AGC is enabled for TFO mode
sameAsNormalMode - downlink AGC is enabled for TFO mode if it is enabled for normal mode; otherwise, it is disabled.

Mib: AmrBrag

Values:
disabled
enabled
sameAsNormalMode

Default: sameAsNormalMode

ATTRIBUTE Nsta Vgs AmrBrag uplinkAutomaticGainControlTfo (upAgcTfo)

Access:
Read: All
Write: All

Description: This attribute enables or disables Automatic Gain Control (AGC) in the uplink direction for Tandem Free Operation (TFO) mode. AGC in the uplink may be turned off for TFO mode and still on for the normal operations.

This voice quality feature should be enabled if the operator desires to control variations in call volume in the uplink direction for TFO mode. This attribute has no effect if *tandemFreeOperation* is ***disabled***.

disabled - uplink AGC is disabled for TFO mode

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enabled - uplink AGC is enabled for TFO mode
sameAsNormalMode - uplink AGC is enabled for TFO mode if it is enabled for normal mode; otherwise, it is disabled.

Mib: AmrBrag

Values:
disabled
enabled
sameAsNormalMode

Default: sameAsNormalMode

ATTRIBUTE Nsta Vgs AmrBrag mobileEchoControlTfo (mecTfo)

Access:
Read: All
Write: All

Description: This attribute enables or disables mobile echo control in Tandem Free Operation (TFO) mode. Mobile Echo Control uplink may be turned off for TFO mode and still on for the normal operations.

The operator may desire to enable this feature if it wants to detect and suppress acoustic echoes originating from the mobile user equipment.

The operator may desire to disable this feature if external third-party voice quality equipment that performs a similar function is used in the network. Performing mobile echo control more than once may degrade voice quality. This attribute has no effect if *tandemFreeOperation* is ***disabled***.

disabled - mobile echo control is disabled for TFO mode
enabled - mobile echo control is enabled for TFO mode
sameAsNormalMode - mobile echo control is enabled for TFO mode if it is enabled for normal mode; otherwise, it is disabled.

Mib: AmrBrag

Values:
disabled
enabled
sameAsNormalMode

Default: sameAsNormalMode

ATTRIBUTE Nsta Vgs AmrBrag iuTimeAlignment (iuTimeAlig)

Access:
Read: All
Write: All

Description: This attribute enables or disables the time alignment algorithm for the Iu-User Plane (Iu-UP) feature of the Transcoding and Rate Adaptation Unit (TRAU).

The operator may desire to enable this feature to minimize the buffer delay in the Radio Network Controller (RNC) by controlling the downlink transmission timing in the peer Iu-UP protocol layer entity.

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The proper operation of this feature may be hindered by the standards interpretation of the RNC vendor. The operator may desire to leave this feature disabled if Iu Time Alignment standards interpretation differences are discovered with the RNC vendor.

Mib: AmrBrag

Values: disabled
enabled

Default: disabled

ATTRIBUTE Nsta Vgs AmrBrag bufferSize (bufSize)

Access: Read: All
Write: All

Criticality: Process

Description: This attribute specifies the capacity of the packet delay variation (PDV) buffer. The PDV buffer is sized to store the amount of data that can be transmitted to the TDM network in the specified period of time.

To ensure end-to-end voice quality, a PDV buffer is provided at the output of the uplink RNC-TRAU network to filter out ATM AAL2 packet jitter and maintain the isochronous nature of the voice traffic. To ensure that PDV can be tolerated, it is necessary to initialize this buffer with a reserve of transmitted data. The size of this reserve is defined by the *pdvt* attribute, and the size of the buffer that holds this reserve is specified by the *bufSize* attribute.

The size of the initialization reserve is set to the amount of data that can be transmitted to the TDM network in the time specified by the *pdvt* attribute. There should be enough data in the PDV buffer to allow transmission for the period of time specified by the *pdvt* attribute before buffer underflow due to packet delay occurs. When packets experience excessive delay, the buffer underflows, causing idle or comfort noise to be transmitted. When packets arrive more quickly, the buffer capacity above the initialization reserve determines the amount of data that can be stored before buffer overflow occurs.

This attribute must be at least 20 msec greater than the value specified by the *pdvt* attribute. Typically the *bufSize* is twice that of the *pdvt* value.

Mib: AmrBrag

Values: Decimal (40..80)

Units: msec

Default: 80

ATTRIBUTE Nsta Vgs AmrBrag packetDelayVariationTolerance (pdvt)

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Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the packet delay variation tolerance. Packet delay variation tolerance specifies the maximum packet arrival jitter that the reassembly process tolerates in the packet stream without producing errors on the TDM interface. This attribute, together with the *bufSize* attribute, can be configured to optimize the jitter against absolute delay trade-off in various network configurations. Increasing the value of this attribute will increase the delay while optimizing the jitter.
Mib	AmrBrag
Values	Decimal (10..60)
Units	msec
Default	25

ATTRIBUTE Nsta Vgs AmrBrag echoCancelHybridDetector (eCanHybDet)

Access	Read: All Write: All
Description	This attribute enables or disables the hybrid detector for the echo cancellation feature. The hybrid detector will temporarily disable the echo canceller when a digital call is detected. This attribute normally specifies enabled and should be changed only on the advice of Nortel support personnel.
Mib	AmrBrag
Values	disabled enabled
Default	enabled

ATTRIBUTE Nsta Vgs AmrBrag backgroundNoiseConditioningTfo (bncTfo)

Access	Read: All Write: All
Description	This attribute enables or disables background noise conditioning and low-pass filtering for Tandem Free Operation (TFO) mode. The background noise conditioning algorithm has an optional post-processing feature that performs low-pass filtering on the noise conditioned signal. Depending on the presence of any other third-party voice quality devices within the network, the operator may desire to disable low-pass filtering to prevent any voice quality degradation due to feature

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interaction.

This attribute has no effect if *tandemFreeOperation* attribute is set to ***disabled***.

This attribute supports the following modes:

disabled - The background noise conditioning is disabled for TFO mode.
enabled - The background noise conditioning is enabled for TFO mode.
enabledLowPass - The background noise conditioning and low-pass filtering are enabled for TFO mode.
sameAsNormalMode - The background noise conditioning is enabled for TFO mode if it is enabled for normal mode; otherwise, it is disabled.

Mib: AmrBrag

Values:
disabled
enabled
enabledLowPass
sameAsNormalMode

Default: sameAsNormalMode

ATTRIBUTE Nsta Vgs AmrBrag dejitterBuffAdaptWindow (djBuffAdptWndw)

Access:
Read: All
Write: All

Description: This attribute specifies the window size over which the UTRAN jitter is estimated for de-jitter buffer level adaptation.

A value of 0 seconds specifies that de-jitter buffer level adaptation is disabled. The value of this attribute is rounded to the nearest multiple of 0.25.

Mib: AmrBrag

Values:
Decimal (0.25..30.00)
disabled

Units: seconds

Default: 1.50

ATTRIBUTE Nsta Vgs AmrBrag dejitterBuffAdaptMargin (djBuffAdptMarg)

Access:
Read: All
Write: All

Description: This attribute specifies the margin for the dynamic de-jitter buffer level target. The de-jitter buffer level is adjusted whenever it exceeds the target level by the specified margin. The value of this attribute is rounded to the nearest multiple of 0.5 ms.

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This attribute has no effect if *dejitterBuffAdaptWindow* attribute is set to ***disabled***.

Mib AmrBrag

Values Decimal (0.5..25.0)

Units msec

Default 1.0

GROUP Nsta Vgs AmrBrag OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib AmrBrag

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta Vgs AmrBrag operationalState (osiOper)

Access Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AmrBrag
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AmrBrag
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs AmrBrag Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of *AmrBrag* or *CsdBrag* component failure.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag failureCause (failCause)

Access	Read: All Write: Illegal
Description	This attribute indicates the cause for failure. The failure cause values are:

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serviceChanNotReady - the TDM LP is down, or waiting for the CHAN to establish communication.
atmConnectionNotReady - the ATM LP is down, or has not established communication.
operatorLock - a component on which this *Brag* depends is locked by the operator.
internalError - an internal error, which can not be determined has occurred.
outOfResource - the current demand has exceeded the capacity of the hardware resources.
vspNotReady - the VSP card is down, or has not established communication.
activating - component creation is currently in progress.
none - no failure.

Mib: AmrBrag

Values:
none
serviceChanNotReady
atmConnectionNotReady
operatorLock
internalError
outOfResource
vspNotReady
activating

Default: none

COMPONENT Nsta Vgs AmrBrag Mtp2

Instance: Decimal (1..31)

Groups:
GROUP Nsta Vgs AmrBrag Mtp2 Provisioned (Prov)
GROUP Nsta Vgs AmrBrag Mtp2 OsiState (State)
GROUP Nsta Vgs AmrBrag Mtp2 Operational (Oper)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2

Scope: Device

Description:
Nsta/n Vgs AmrBrag Mtp2/<timeslot>
Nsta/n Vgs CsdBrag Mtp2/<timeslot>

This component represents the MTP2 transport layer between the Call Server and the Signalling Gateway.

The instance of the component represents the signalling timeslot on the TDM connection.

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No more than six *Mtp2* components may be provisioned under a given *Nsta Vgs* hierarchy.

Mib: AmrBrag

Common Verbs: Help, List, Display, Add, DELete

GROUP Nsta Vgs AmrBrag Mtp2 Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning attributes for the *Mtp2* component.

Mib: AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 layer3IpAddress (l3IpAddr)

Access: Read: All
Write: All

Criticality: Process

Description: This attribute specifies the remote IP address of the layer 3 entity that owns this link.

This address must match the IP address provisioned in the corresponding *Mtp3* component specified by its *linkToPort* attribute.

Changing this attribute will cause the link to be restarted.

Mib: AmrBrag

Values: IP address

Default: No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 layer3Port (l3Port)

Access: Read: All
Write: All

Criticality: Process

Description: This attribute specifies the remote UDP port of the layer 3 entity that owns this link.

This port must match the UDP port provisioned in the corresponding *Mtp3* component specified by its *linkToPort* attribute.

Changing this attribute will cause the link to be restarted.

Mib: AmrBrag

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Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 udpPortConnection (udpConn)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the link to the *Nsta Vgs CtrlConn UdpPort* component that defines the UDP port access to the IP network for connection to the layer 3 user. It should match the UDP port provisioned in the corresponding *Mtp3 Linkset Link* component specified by its *remoteUdpPort* attribute. A port must be specified for *Check Prov* to succeed. Within a single *Nsta Vgs* hierarchy, at most three *Mtp2* components can link to *UdpPort* components under the *Ctrl/mg* component, and at most three *Mtp2* components can link to *UdpPort* components under the *Ctrl/sg* component. Changing this attribute will cause the link to be restarted.
Mib	AmrBrag
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 alignmentReadyTimer (t1)

Access	Read: All Write: All
Description	This attribute specifies the value of the Alignment Ready timer defined in ITU-T recommendation Q.703. This timer is started when the link reaches the “Alignment Ready” state. This timer stops upon entering the “In Service” state. Reception of a FISU or MSU while in the “Alignment Ready” state causes the state transition to the “In Service” state. A timer expiry causes the state to transition to the “Idle” state. The number of expiries of this timer is counted by the attribute *alignmentReadyTimeouts.*
Mib	AmrBrag
Values	Decimal (40..50)
Units	seconds

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Default	45

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 notAlignedTimer (t2)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Not Aligned “timer defined in ITU-T recommendation Q.703. It is used during initial alignment. This timer is started when the link enters the “Not Aligned” state which begins sending status indication “O”. If the timer expires before receiving a status indication “O”, “N” or “E”, alignment is stopped and the “Idle” state is entered. Otherwise the link proceeds to the “Aligned” state. The number of expiries of this timer is counted by the attribute *notAlignedTimeouts.*
Mib	AmrBrag
Values	Decimal (5..150)
Units	seconds
Default	60

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 alignedTimer (t3)

Access	Read: All Write: All
Description	This attribute specifies the value of the Timer “aligned” defined in ITU-T recommendation Q.703. It is used during initial alignment. This timer is started when the link enters the “Aligned” state which begins sending status indication “N” or “E”, depending on whether the link is in normal or emergency alignment mode respectively. If the timer expires before a status indication “N” or “E” is received, alignment is stopped and the “Idle” state is entered. Otherwise the link proceeds to the “Proving” state. The number of expiries of this timer is counted by the attribute *alignedTimeouts.*
Mib	AmrBrag
Values	Decimal (1000..2000)
Units	msec
Default	1500

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 normalProvingTimer (t4n)

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Access	Read: All Write: All
Description	This attribute specifies the value of the proving period timer for normal alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In normal alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state. Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times. A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.
Mib	AmrBrag
Values	Decimal (7500..9500)
Units	msec
Default	8500

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 emergencyProvingTimer (t4e)

Access	Read: All Write: All
Description	This attribute specifies the value of the proving period timer for emergency alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In emergency alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state. Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times. A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.
Mib	AmrBrag
Values	Decimal (1000..2000)
Units	msec
Default	1500

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 sendingSibTimer (t5)

Access	Read: All Write: All

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Description	This attribute specifies the value of the “Sending SIB” timer defined in ITU-T recommendation Q.703. It is used for congestion control. The value of this timer determines the interval at which the receiving end of a signalling link, which detects a congestion situation returns a status indication “B” to the remote transmitting end of the link. This causes the remote end of the link to stop sending messages until the congestion condition goes away. The number of times a status indication “B”, that is, a congestion indication is sent is counted by the attribute *congestionIndicationTx*. The number of times a congestion situation is detected is counted by the attribute *congestionDetects*.
Mib	AmrBrag
Values	Decimal (80..120)
Units	msec
Default	100

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **remoteCongestionTimer (t6)**

Access	Read: All Write: All
Description	This attribute specifies the value of the remote congestion timer defined in ITU-T recommendation Q.703. This timer begins when a status indication “B” is received, indicating congestion at the remote end. This timer is stopped when the congestion abates at the signalling point, as indicated by a message in the retransmit buffer being acknowledged. Upon timer expiration, a link failure indication is generated. The number of times a status indication “B” is received, indicating congestion at the remote end, is counted by the attribute *remoteCongestionIndicationsRx.*
Mib	AmrBrag
Values	Decimal (3000..6000)
Units	msec
Default	4500

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **ackTimer (t7)**

Access	Read: All Write: All

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Description	This attribute specifies the value of the “Excessive delay of acknowledgment” timer defined in ITU-T recommendation Q.703. It is used during normal sending and receiving of MSUs. This timer starts when the first MSU is placed in the retransmit buffer and is pending acknowledgment. This timer is stopped after the last MSU in the retransmit buffer is acknowledged. This timer is restarted after each acknowledgment when the retransmit buffer is non-empty. It is also restarted each time a link status indication unit “B” is received. If the timer expires, a link failure indication is generated. The number of expiries of this timer is counted by the attribute *ackTimeouts.*
Mib	AmrBrag
Values	Decimal (500..2000)
Units	msec
Default	1250

GROUP **Nsta Vgs AmrBrag Mtp2** **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AmrBrag

ATTRIBUTE **Nsta Vgs AmrBrag Mtp2** **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — AmrBrag

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — AmrBrag

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — AmrBrag

Values — idle
active (activ)
busy

Default — idle

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GROUP Nsta Vgs AmrBrag Mtp2 **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the *Mtp2* component.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **alignmentReadyTimeouts (t1Tmouts)**

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the Alignment Ready timer (T1) represented by the attribute *alignmentReadyTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **notAlignedTimeouts (t2Tmouts)**

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the “Not Aligned “timer (T2) represented by the attribute *notAlignedTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **alignedTimeouts (t3Tmouts)**

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the Aligned Timer (T3) represented by the attribute *alignedTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **congestionDetects (congDet)**

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Access	Read: All Write: Illegal
Description	This attribute counts the number of times congestion was detected at the local end of the signalling link. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 congestionIndicationsTx (congIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications transmitted. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 remoteCongestionIndicationsRx (remCongIndRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications received from the remote end. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 ackTimeouts (t7Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the T7 Timer represented by the attribute *ackTimer.* The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 insvFailures (insvFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of in-service link outages. It does not include failures which occur during the alignment process. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units transmitted. This includes the number of message signal units retransmitted, indicated by the attribute *msuRetransmits*. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuRetransmits (msuReTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units retransmitted because of negative acknowledgments. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuRx

Access	Read: All Write: Illegal

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Description	This attribute counts the number of message signal units received. This includes the MSUs with errors, indicated by the attribute *msuErrors.* The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msuErrors (msuErrs)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of ingress signal units discarded because of sequence number, length or CRC errors. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msuOctetsTx (octTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets transmitted. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msuOctetsRx (octRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets received. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

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Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2 component.

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **insvFailures**

Description	This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msusTx**

Description	This attribute indicates the number of message signal units transmitted over the collection interval. This includes the MSUs retransmitted, indicated by the attribute *msuRetransmits.*
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msuRetransmits (msuReTx)**

Description	This attribute indicates the number of message signal units retransmitted because of negative acknowledgments over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msusRx**

Description	This attribute indicates the number of message signal units received over the collection interval. This includes the MSUs with errors, indicated by the attribute *msuErrors.*
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msuErrors**

Description	This attribute indicates the number of message signal units discarded because of sequence number, length or CRC errors over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msuOctetsTx**

Description	This attribute indicates the number of payload MSU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msuOctetsRx**

Description	This attribute indicates the number of payload MSU octets received over the collection interval.
Values	Decimal (0..4294967295)

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COMPONENT Nsta Vgs AmrBrag WgBragDs0 (Ds0)

Instance	Decimal (1..31)
Groups	GROUP Nsta Vgs AmrBrag Ds0 Operational (Oper)
Scope	Device
Description	This component represents a DS0 timeslot.
Mib	AmrBrag
Common Verbs	Help List Display

GROUP Nsta Vgs AmrBrag Ds0 Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *NstaVgsWgBragDs0* component.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag Ds0 timeslotController (controller)

Access	Read: All Write: Illegal
Description	This attribute indicates the current timeslot controller. If the DS0 is used as a bearer channel, it indicates the associated *MgIfCtrl* component. If the DS0 is used for signalling, this attribute indicates the *Mtp2* component used for signalling. If the DS0 is not in use, this attribute is empty.
Mib	AmrBrag
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs CsdBasicRateGroup (CsdBrag)

Instance	Decimal (0..127)
Groups	GROUP Nsta Vgs CsdBrag Provisioned (Prov) GROUP Nsta Vgs CsdBrag OsiState (State) GROUP Nsta Vgs CsdBrag Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs CsdBasicRateGroup/n* This component represents a number of TDM connections from the Voice Services Processor (VSP) to the TDM network. The TDM connections are all associated with the same TDM interface.

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A particular *CsdBrag* is associated with a single E1 channel. Connections on this channel are used to transport CSD. This component defines default processing for all TDM connections on this channel. For each connection, this default processing may be overridden by the controller.

Mib	CsdBrag
Opt. Subcomp.	COMPONENT Nsta Vgs CsdBrag Mtp2
Dyn. Subcomp.	COMPONENT Nsta Vgs CsdBrag WgBragDs0 (Ds0)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs CsdBrag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *NstaVgsWgCsdBasicRateGroup* component.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag interfaceName (intName)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to a *Chan* component, which in turn specifies the timeslots for the *CsdBrag.* This attribute must specify an *Lp/n E1/n Chan/n* component. *Lp/n DS1/n Chan/n* components are not supported.
Mib	CsdBrag
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag defaultMode (defMode)

Access	Read: All Write: All
Description	This attribute specifies the operational mode to be used for a CSD call when no mode is defined during call setup via the call setup protocol. ***transparent*** - operate in transparent CSD mode when no mode is defined. ***nonTransparent*** - operate in non-transparent CSD mode when no mode is defined.

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Mib	CsdBrag
Values	transparent nonTransparent
Default	transparent

ATTRIBUTE Nsta Vgs CsdBrag defaultRate (defRate)

Access	Read: All Write: All
Description	This attribute specifies the encoding rate to be used for a CSD call when no rate is defined during call setup via the call setup protocol. Transparent mode only supports a rate of ***64.0*** kbit/s, and nontransparent mode only supports ***14.4*** kbit/s.
Mib	CsdBrag
Values	Decimal (14.40; 64.00)
Units	kbit/s
Default	64.00

ATTRIBUTE Nsta Vgs CsdBrag lossIntegrationPeriod (intPeriod)

Access	Read: All Write: All
Description	This attribute specifies the interval of time for which a loss of packet condition must persist before the corresponding call is dropped. A value of ***disabled*** specifies that packet loss integration is disabled, and therefore call connections will not be dropped due to packet loss.
Mib	CsdBrag
Values	Decimal (1..50) disabled
Units	seconds
Default	5

ATTRIBUTE Nsta Vgs CsdBrag bufferSize (bufSize)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the capacity of the packet delay variation (PDV) buffer. The PDV buffer will be sized to store the amount of data that can be transmitted to the TDM network in the specified period of time.

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To ensure end-to-end voice quality, a PDV buffer is provided at the output of the uplink RNC-TRAU network to filter out ATM AAL2 packet jitter. To ensure that PDV can be tolerated, it is necessary to initialize this buffer with a reserve of transmitted data. The size of this reserve is defined by the *pdvt* attribute, and the size of the buffer that holds this reserve is specified by the *bufSize* attribute.

The size of the initialization reserve is set to the amount of data that can be transmitted to the TDM network in the time specified by the *pdvt* attribute. There should be enough data in the PDV buffer to allow transmission for the period of time specified by the *pdvt* attribute before buffer underflow due to packet delay occurs. When packets experience excessive delay, the buffer underflows, causing fill sequences to be transmitted. When packets arrive more quickly, the buffer capacity above the initialization reserve determines the amount of data that can be stored before buffer overflow occurs.

This attribute must be at least 40 msec greater than the value of the *pdvt* attribute. Typically the *bufSize* is twice that of the *pdvt* value.

Mib	CsdBrag
Values	Decimal (40..160)
Units	msec
Default	100

ATTRIBUTE Nsta Vgs CsdBrag **packetDelayVariationTolerance (pdvt)**

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the packet delay variation tolerance. Packet delay variation tolerance specifies the maximum packet arrival jitter that the reassembly process tolerates in the packet stream without producing errors on the TDM interface. This attribute, together with the *bufSize* attribute, can be configured to optimize the jitter against absolute delay trade-off in various network configurations.
Mib	CsdBrag
Values	Decimal (10..120)
Units	msec
Default	50

GROUP Nsta Vgs CsdBrag **OsiState (State)**

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	CsdBrag
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs CsdBrag operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	CsdBrag
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Nsta Vgs CsdBrag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	CsdBrag
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs CsdBrag Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of *AmrBrag* or *CsdBrag* component failure.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag failureCause (failCause)

Access	Read: All Write: Illegal
Description	This attribute indicates the cause for failure. The failure cause values are: ***serviceChanNotReady*** - the TDM LP is down, or waiting for the CHAN to establish communication. ***atmConnectionNotReady*** - the ATM LP is down, or has not established communication. ***operatorLock*** - a component on which this *Brag* depends is locked by the operator. ***internalError*** - an internal error, which can not be determined has occurred. ***outOfResource*** - the current demand has exceeded the capacity of the hardware resources. ***vspNotReady*** - the VSP card is down, or has not established communication.

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activating - component creation is currently in progress.
none - no failure.

Mib CsdBrag

Values
none
serviceChanNotReady
atmConnectionNotReady
operatorLock
internalError
outOfResource
vspNotReady
activating

Default none

COMPONENT Nsta Vgs CsdBrag Mtp2

Instance Decimal (1..31)

Groups
GROUP Nsta Vgs CsdBrag Mtp2 Provisioned (Prov)
GROUP Nsta Vgs CsdBrag Mtp2 OsiState (State)
GROUP Nsta Vgs CsdBrag Mtp2 Operational (Oper)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2

Scope Device

Description
Nsta/n Vgs AmrBrag Mtp2/<timeslot>
Nsta/n Vgs CsdBrag Mtp2/<timeslot>

This component represents the MTP2 transport layer between the Call Server and the Signalling Gateway.

The instance of the component represents the signalling timeslot on the TDM connection.

No more than six *Mtp2* components may be provisioned under a given *Nsta Vgs* hierarchy.

Mib CsdBrag

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs CsdBrag Mtp2 Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioning attributes for the *Mtp2* component.

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Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 layer3IpAddress (l3IpAddr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the remote IP address of the layer 3 entity that owns this link. This address must match the IP address provisioned in the corresponding *Mtp3* component specified by its *linkToPort* attribute. Changing this attribute will cause the link to be restarted.
Mib	CsdBrag
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 layer3Port (l3Port)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the remote UDP port of the layer 3 entity that owns this link. This port must match the UDP port provisioned in the corresponding *Mtp3* component specified by its *linkToPort* attribute. Changing this attribute will cause the link to be restarted.
Mib	CsdBrag
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 udpPortConnection (udpConn)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the link to the *Nsta Vgs CtrlConn UdpPort* component that defines the UDP port access to the IP network for connection to the layer 3 user. It should match the UDP port provisioned in the corresponding *Mtp3 Linkset Link* component specified by its *remoteUdpPort* attribute.

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A port must be specified for *Check Prov* to succeed.

Within a single *Nsta Vgs* hierarchy, at most three *Mtp2* components can link to *UdpPort* components under the *Ctrl/mg* component, and at most three *Mtp2* components can link to *UdpPort* components under the *Ctrl/sg* component.

Changing this attribute will cause the link to be restarted.

Mib	CsdBrag
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 alignmentReadyTimer (t1)

Access	Read: All Write: All
Description	This attribute specifies the value of the Alignment Ready timer defined in ITU-T recommendation Q.703. This timer is started when the link reaches the “Alignment Ready” state. This timer stops upon entering the “In Service” state. Reception of a FISU or MSU while in the “Alignment Ready” state causes the state transition to the “In Service” state. A timer expiry causes the state to transition to the “Idle” state. The number of expiries of this timer is counted by the attribute *alignmentReadyTimeouts.*
Mib	CsdBrag
Values	Decimal (40..50)
Units	seconds
Default	45

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 notAlignedTimer (t2)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Not Aligned “timer defined in ITU-T recommendation Q.703. It is used during initial alignment. This timer is started when the link enters the “Not Aligned” state which begins sending status indication “O”. If the timer expires before receiving a status indication “O”, “N” or “E”, alignment is stopped and the “Idle” state is entered. Otherwise the link

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proceeds to the “Aligned” state.

The number of expiries of this timer is counted by the attribute *notAlignedTimeouts.*

Mib	CsdBrag
Values	Decimal (5..150)
Units	seconds
Default	60

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 alignedTimer (t3)

Access	Read: All Write: All
Description	This attribute specifies the value of the Timer “aligned” defined in ITU-T recommendation Q.703. It is used during initial alignment. This timer is started when the link enters the “Aligned” state which begins sending status indication “N” or “E”, depending on whether the link is in normal or emergency alignment mode respectively. If the timer expires before a status indication “N” or “E” is received, alignment is stopped and the “Idle” state is entered. Otherwise the link proceeds to the “Proving” state. The number of expiries of this timer is counted by the attribute *alignedTimeouts.*
Mib	CsdBrag
Values	Decimal (1000..2000)
Units	msec
Default	1500

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 normalProvingTimer (t4n)

Access	Read: All Write: All
Description	This attribute specifies the value of the proving period timer for normal alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In normal alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state. Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times.

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	A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.
Mib	CsdBrag
Values	Decimal (7500..9500)
Units	msec
Default	8500

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 emergencyProvingTimer (t4e)

Access	Read: All Write: All
Description	This attribute specifies the value of the proving period timer for emergency alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In emergency alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state. Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times. A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.
Mib	CsdBrag
Values	Decimal (1000..2000)
Units	msec
Default	1500

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 sendingSibTimer (t5)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Sending SIB” timer defined in ITU-T recommendation Q.703. It is used for congestion control. The value of this timer determines the interval at which the receiving end of a signalling link, which detects a congestion situation returns a status indication “B” to the remote transmitting end of the link. This causes the remote end of the link to stop sending messages until the congestion condition goes away. The number of times a status indication “B”, that is, a congestion indication is sent is counted by the attribute *congestionIndicationTx*. The number of times a congestion situation is detected is counted by the attribute *congestionDetects*.

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Mib	CsdBrag
Values	Decimal (80..120)
Units	msec
Default	100

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 remoteCongestionTimer (t6)

Access	Read: All Write: All
Description	This attribute specifies the value of the remote congestion timer defined in ITU-T recommendation Q.703. This timer begins when a status indication “B” is received, indicating congestion at the remote end. This timer is stopped when the congestion abates at the signalling point, as indicated by a message in the retransmit buffer being acknowledged. Upon timer expiration, a link failure indication is generated. The number of times a status indication “B” is received, indicating congestion at the remote end, is counted by the attribute *remoteCongestionIndicationsRx.*
Mib	CsdBrag
Values	Decimal (3000..6000)
Units	msec
Default	4500

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 ackTimer (t7)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Excessive delay of acknowledgment” timer defined in ITU-T recommendation Q.703. It is used during normal sending and receiving of MSUs. This timer starts when the first MSU is placed in the retransmit buffer and is pending acknowledgment. This timer is stopped after the last MSU in the retransmit buffer is acknowledged. This timer is restarted after each acknowledgment when the retransmit buffer is non-empty. It is also restarted each time a link status indication unit “B” is received.

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If the timer expires, a link failure indication is generated.

The number of expiries of this timer is counted by the attribute *ackTimeouts.*

Mib	CsdBrag
Values	Decimal (500..2000)
Units	msec
Default	1250

GROUP Nsta Vgs CsdBrag Mtp2 **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	CsdBrag
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **operationalState (osiOper)**

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Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	CsdBrag
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	CsdBrag
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs CsdBrag Mtp2 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Mtp2* component.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 alignmentReadyTimeouts (t1Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the Alignment Ready timer (T1) represented by the attribute *alignmentReadyTimer.*

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	The counter wraps to zero when it exceeds the maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 notAlignedTimeouts (t2Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the “Not Aligned “timer (T2) represented by the attribute *notAlignedTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 alignedTimeouts (t3Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the Aligned Timer (T3) represented by the attribute *alignedTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 congestionDetects (congDet)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times congestion was detected at the local end of the signalling link. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 congestionIndicationsTx (congIndTx)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications transmitted. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 remoteCongestionIndicationsRx (remCongIndRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications received from the remote end. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 ackTimeouts (t7Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the T7 Timer represented by the attribute *ackTimer.* The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 insvFailures (insvFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of in-service link outages. It does not include failures which occur during the alignment process. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units transmitted. This includes the number of message signal units retransmitted, indicated by the attribute *msuRetransmits*. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuRetransmits (msuReTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units retransmitted because of negative acknowledgments. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units received. This includes the MSUs with errors, indicated by the attribute *msuErrors.* The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuErrors (msuErrs)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of ingress signal units discarded because of sequence number, length or CRC errors. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuOctetsTx (octTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets transmitted. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuOctetsRx (octRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets received. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2 component.

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 insvFailures

Description	This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msusTx

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Description	This attribute indicates the number of message signal units transmitted over the collection interval. This includes the MSUs retransmitted, indicated by the attribute *msuRetransmits.*
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msuRetransmits (msuReTx)**

Description	This attribute indicates the number of message signal units retransmitted because of negative acknowledgments over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msusRx**

Description	This attribute indicates the number of message signal units received over the collection interval. This includes the MSUs with errors, indicated by the attribute *msuErrors.*
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msuErrors**

Description	This attribute indicates the number of message signal units discarded because of sequence number, length or CRC errors over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msuOctetsTx**

Description	This attribute indicates the number of payload MSU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msuOctetsRx**

Description	This attribute indicates the number of payload MSU octets received over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Nsta Vgs CsdBrag **WgBragDs0 (Ds0)**

Instance	Decimal (1..31)
Groups	GROUP Nsta Vgs CsdBrag Ds0 Operational (Oper)
Scope	Device
Description	This component represents a DS0 timeslot.
Mib	CsdBrag
Common Verbs	Help List Display

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GROUP Nsta Vgs CsdBrag Ds0 Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *NstaVgsWgBragDs0* component.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag Ds0 timeslotController (controller)

Access	Read: All Write: Illegal
Description	This attribute indicates the current timeslot controller. If the DS0 is used as a bearer channel, it indicates the associated *MgIfCtrl* component. If the DS0 is used for signalling, this attribute indicates the *Mtp2* component used for signalling. If the DS0 is not in use, this attribute is empty.
Mib	CsdBrag
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs V5UserAdaption (V5ua)

Groups	GROUP Nsta Vgs V5ua Provisioned (Prov) GROUP Nsta Vgs V5ua OsiState (State) GROUP Nsta Vgs V5ua Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs V5ua* This component represents the V5.2 User Adaptation Layer for the transport of V5.2 signaling over Stream Control Transmission Protocol (SCTP).
Mib	Vgs
Dyn. Subcomp.	COMPONENT Nsta Vgs V5ua ApplicationServerProcess (Asp)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs V5ua Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Iua* component, which provides access to the IP network.
Mib	Vgs

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ATTRIBUTE Nsta Vgs V5ua sctpPortConnection

Access	Read and write
Description	This attribute specifies a link to an *Nsta/n Vgs Ctrl/n SctpPort/n* component, which provides transport over the IP network. The linked *Nsta/n Vgs Ctrl/n SctpPort/n* must be under the same *Nsta/n Vgs* as this *Iua* subcomponent.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs V5ua recoveryTimer

Access	Read and write
Description	This attribute specifies how long incoming messages are buffered while the Application Server is recovering from a failure (indicated by an *asStatus* value of ***pending***).
Mib	Vgs
Values	Decimal (1..5)
Units	seconds
Default	3

GROUP Nsta Vgs V5ua OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5ua adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Vgs

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs V5ua operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs V5ua usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

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Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs V5ua Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Nsta/n Vgs V5ua* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5ua applicationServerStatus

Access	Read only
Description	This attribute indicates the status of the Application Server. The possible values are: ***active*** - The Application Server (AS) is available and application traffic is active. This state implies that at least one Application Server Process (ASP) is in active state. ***up*** - The AS is available but no application traffic is active (one or more related ASPs are in the inactive state, but none in the active state). The recovery timer is not running or has expired. ***down*** - The AS is unavailable. This state implies that all related ASPs are in the down state for this AS. The recovery timer is not running or has expired. ***pending*** - The ASP has transitioned from active to inactive or down and it was the last remaining active ASP in the AS. A recovery timer starts, and any incoming SCN messages after that will be queued by the SG. If an ASP becomes active before a recovery timer expires, the AS will move to active state and all the queued messages will be sent to the active ASP.
Mib	Vgs
Values	up down active pending
Default	down

COMPONENT Nsta Vgs V5ua ApplicationServerProcess (Asp)

Instance	address [IP address] port [Decimal (1..65535)]
Groups	GROUP Nsta Vgs V5ua Asp Operational (Oper)
Scope	Device

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Description	*Nsta/n Vgs Iua ApplicationServerProcess/<ip address>,<sctp port>* This component represents an Application Server Process (Media Gateway Controller) linked to the Signaling Gateway. The IP address and SCTP port number used in the instance value refer to the remote connection.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs V5ua Asp Operational (Oper)

Properties	Operational
Description	This group contains attributes which describe the *Asp* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5ua Asp status

Access	Read only
Description	This attribute indicates the status of the Application Server Process. The possible values are: ***active*** - the ASP is available and application traffic is flowing (serving as the primary instance) ***up*** - the ASP is available but application traffic is not flowing ***down*** - the ASP is unavailable
Mib	Vgs
Values	up down active
Default	No default

COMPONENT Nsta Vgs BasicRateGroupServer (BragS)

Instance	Decimal (0..15)
Groups	GROUP Nsta Vgs BragS Provisioned (Prov) GROUP Nsta Vgs BragS Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs BasicRateGroupServer/n* This component represents a common server for a set of dynamic basic rate groups (*DBrag*). An instance of this component should be provisioned for each group of AAL1 TDM connections with the same service parameters.

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This component defines the default processing for all associated *DBrag* components. For each connection, this default processing may be overridden by the controller.

The *Cas* subcomponent is mutually exclusive of the *Q921* subcomponent.

Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs BragS AnnouncementLanguage COMPONENT Nsta Vgs BragS Q921 COMPONENT Nsta Vgs BragS ChannelAssociatedSignaling (Cas)
Dyn. Subcomp.	COMPONENT Nsta Vgs BragS NstaVgsDynamicBasicRateGroup (DBrag)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs BragS Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *BasicRateGroupServer* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS localAddress

Access	Read and write
Criticality	Process
Description	This attribute specifies the NSAP address of the *BragS*. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default value can not be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this *BragS* component then deleted and readded.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs BragS tdmLogLaw (muALaw)

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Access	Read and write
Criticality	Process
Description	This attribute specifies the G.711 companding law to use on the TDM service stream. If set to ***aLaw***, Alaw companding is used. If set to ***muLaw***, Mulaw companding is used. If set to ***autoConfigured***, then the actual value used is derived from the facility, namely ***muLaw*** would be used for *DS1* stream, while ***aLaw*** would be used by *E1* stream.
Mib	Vgs
Values	muLaw aLaw autoConfigured
Default	autoConfigured

ATTRIBUTE Nsta Vgs BragS bufferSize (bufSize)

Access	Read and write
Criticality	Process
Description	This attribute specifies the capacity of the packet delay variation (PDV) buffer in milliseconds of data. To ensure that PDV can be tolerated it is necessary to initialize the system with a reserve of information in the buffer used to reassemble data for transmission across the TDM network. The size of this reserve is defined by the *pdvt* and *bufferSize* attributes. The amount of data played out to the TDM network (in time equal to the value of the *pdvt* attribute) is equal to the size of the initialization reserve. There should be enough data in the reassembly buffer to allow transmission for a period of time defined by the *pdvt* attribute before buffer underflow due to the next delayed packet occurs. If the ***vgsIp, vsIpG729, vgsIpGe***, or ***vgsIpG729Ge*** feature have been provisioned the default *bufferSize* will be ***60ms*** otherwise the *bufferSize* will be ***50ms***. The value should always be greater than two times the value of the *pdvt* attribute plus the maximum packet size, except on a ***2pGeMmSrVsp3*** card where it need only be greater than or equal to two times the *pdvt*. The maximum packet size is 20ms for ***vgsIp***, ***vgsIpG729, vgsIpGe*** and ***vgsIpG729Ge*** features and 10ms for all other features. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to

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sameAsProfile.

This attribute has no effect if the *packetDelayVariationTolerance* attribute is set to ***adaptive***.

Mib	Vgs
Values	Decimal (5..100) sameAsProfile
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS **packetDelayVariationTolerance (pdvt)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum packet arrival jitter in milliseconds that the reassembly process will tolerate in the packet stream without producing errors on the TDM interface. This attribute together with the *bufferSize* attribute, can be configured to optimize the jitter versus absolute delay tradeoff in various network configurations. The value should always be less than the value of the *bufferSize* attribute minus the maximum packet size divided by two, except on a ***2pGeMmSrVsp3*** card where it need only be less than or equal to the *bufferSize* divided by two. The maximum packet size is 20ms for ***vgsIp, vgsIpG729, vgsIpGe*** and ***vgsIpG729Ge*** features and 10ms for all other features. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***. If set to ***adaptive***, the hardware attempts to minimise the absolute delay while allowing for the maximum packet arrival jitter encountered. This value is only supported on the following cards: ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3***, ***2pVS.***
Mib	Vgs
Values	Decimal (5..50) sameAsProfile adaptive

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Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS lossIntegrationPeriod (intPeriod)

Access	Read and write
Description	This attribute specifies the interval of time in seconds for which a loss of packet condition must persist before the corresponding call is dropped. A value of ***0*** specifies that packet loss integration is disabled and therefore call connections are not suspended after packet loss. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	Decimal (0..50) sameAsProfile
Units	seconds
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS ingressGain (iGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM ingress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs BragS egressGain (eGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM egress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-12..12)
Units	dB
Default	0

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ATTRIBUTE Nsta Vgs BragS echoCancellation (eCan)

Access	Read and write
Description	This attribute specifies whether echo cancellation is enabled or disabled. The value of this attribute will determine whether echo cancellation will be on or off when a 2100Hz tone is detected. Note that the controller may override this attribute on a call by call basis to activate or deactivate echo cancellation. ***g165Mode*** - Enables echo cancellation except when a 2100Hz tone with phase reversal is detected. ***alwaysOn*** - Enables echo cancellation regardless of whether a 2100Hz tone is detected. ***g164Mode*** - Disables echo cancellation only when a 2100Hz tone is detected, regardless of phase reversal. ***disabled*** - Disables echo cancellation. The values ***alwaysOn*** and ***g164Mode*** are not permitted on a ***2pGeMmSrVsp3*** card.
Mib	Vgs
Values	g165Mode disabled alwaysOn g164Mode
Default	g165Mode

ATTRIBUTE Nsta Vgs BragS minimumEchoReturnLoss (minEchoRetLoss)

Access	Read and write
Description	This attribute specifies the minimum echo return loss that can be expected on the line.
Mib	Vgs
Values	Decimal (0; 3; 6)
Units	dB
Default	6

ATTRIBUTE Nsta Vgs BragS echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read and write
Description	The attribute specifies whether comfort noise generation for the echo cancellation feature is enabled or disabled. This attribute has no effect if

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echoCancellation is ***disabled*** through provisioning or through 2100 Hz tone detection.

Mib	Vgs
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Vgs BragS defaultVoiceRate (defVRate)

Access	Read and write
Description	This attribute specifies the default coding algorithm to be used under normal conditions (when no 2100 Hz tone is detected). For each connection, this default coding algorithm can be overridden by the controller. When the VSP card type is ***2pGeMmSrVsp3*** or ***2pOC3ChSmIrVsp3***, and the ***vgsAtm*** or ***vgsAtmG729*** feature is provisioned, the value must be ***64kG711, 24kG726*** or ***32kG726*** If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	64kG711 32kG726 24kG726 8kG729 sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS tone2100Rate (toneRate)

Access	Read and write
Description	This attribute specifies the coding algorithm to be used for timeslots within all the *DBrag* subcomponents of this *BragS* component on which 2100 Hz tone is detected (phase reversal may or may not be detected). This attribute takes precedence over the *defaultVoiceRate* attribute. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

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Mib	Vgs
Values	64kG711 32kG726 sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS silenceDetectionHangOverTime (silDetTime)

Access	Read and write
Description	This attribute specifies the time in milliseconds for which the speech path is left on before being suppressed when a timeslot is silent. This helps to prevent clipping at the end of words. This attribute specifies the silence detection hang over time for all voice packets transmitted on IP and is ignored by AAL2 transmission. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	Decimal (30..500) sameAsProfile
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS silenceSuppression (silSup)

Access	Read and write
Description	This attribute specifies whether silence suppression is performed. A value of ***enabled*** indicates that silence suppression is performed as default. For each connection this default can be overridden by the controller. A value of ***disabled*** indicates that silence suppression is not performed under any circumstances. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs

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Values	enabled disabled sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS silenceSuppressionThreshold (silSupThresh)

Access	Read and write
Description	This attribute specifies the level above which silence suppression is not performed. A value in the range -39 to -36 dBm0 is only permitted on a ***2pGeMmSrVsp3*** card. If ***sameAsProfile***, the equivalent value from the *PktProf* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	Signed (-60..-36) sameAsProfile
Units	dBm0
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS signalingType (sigType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the signaling type of the trunks within all the *DBrag* components of this *BragS*. ***unsignaled*** performs no additional signaling. ***mfRemote*** performs MF signaling to a remote call server. This attribute must be set to ***unsignaled*** when using ATM transport.
Mib	Vgs
Values	unsignaled mfRemote
Default	unsignaled

ATTRIBUTE Nsta Vgs BragS echoCancellationTailLength (eCanTail)

Access	Read and write
Description	This attribute specifies the Echo Cancellation tail length applied to all timeslots within all the *DBrag* components of this *BragS*.

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A value of 32ms should be used for networks with a round trip delay of 0 to 28 ms, and a value of 48 ms should be used for networks with a round trip delay of 28 to 44 ms. The use of 48 ms for round trip delays of less than 32 ms is not advised. The use of 64 ms is reserved for the ***2pGeMmSrVsp3*** card.

If set to ***autoConfigure*** the actual value used depends on card type. If the card type is ***12mVspAal*** or ***Vsp2***, the echo cancellation tail length is set to 32 ms. If the card type is ***2pGeMmSrVsp3***, the echo cancellation tail length is set to 64 ms.

This attribute must be set to ***32,*** or ***autoConfigure*** for the non switched voice over ATM service and when running on a ***12mVspAal*** card.

This attribute must be set to ***32***, ***48*** or ***autoConfigure*** when using a ***Vsp2*** card.

This attribute must be set to ***128*** or ***autoConfigure*** when using a ***2pGeMmSrVsp3*** card.

Mib — Vgs

Values
autoConfigure
32
48
64
128

Units — msec

Default — autoConfigure

ATTRIBUTE Nsta Vgs BragS toneset (toneset)

Access — Read and write

Description — This attribute specifies the tone set available to the controller.

The possible values are:

sameAsVgs - Use the *defaultToneset* attribute from the *Vgs* component
argentina - Use the tone set for Argentina.
australia - Use the tone set for Australia.
austria - Use the tone set for Austria.
belgium - Use the tone set for Belgium.
bolivia - Use the tone set for Bolivia.
brazil - Use the tone set for Brazil.
brazilCustom1 - Use the tone set for BrazilCustom1.
canadaUsa - Use the tone set for Canada and the USA.
chile - Use the tone set for Chile.
china - Use the tone set for China.
custom1 - Use the tone set patched for Custom1.

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custom2 - Use the tone set patched for Custom2.
custom3 - Use the tone set patched for Custom3.
custom4 - Use the tone set patched for Custom4.
custom5 - Use the tone set patched for Custom5.
czech - Use the tone set for the Czech Republic.
denmark - Use the tone set for Denmark.
finland - Use the tone set for Finland.
france - Use the tone set for France.
germany - Use the tone set for Germany.
greece - Use the tone set for Greece.
hongKong - Use the tone set for Hong Kong.
hungary - Use the tone set for Hungary.
india - Use the tone set for India.
ireland - Use the tone set for Ireland.
israel - Use the tone set for Israel.
italy - Use the tone set for Italy.
japan - Use the tone set for Japan.
korea - Use the tone set for Korea.
malaysia - Use the tone set for Malaysia.
mexico - Use the tone set for Mexico.
mexicoCustom1 - Use the tone set for MexicoCustom1.
netherlands - Use the tone set for The Netherlands.
newZealand - Use the tone set for New Zealand.
norway - Use the tone set for Norway.
pakistan - Use the tone set for Pakistan.
panama - Use the tone set for Panama.
philippines - Use the tone set for Philippines.
poland - Use the tone set for Poland.
portugal - Use the tone set for Portugal.
romania - Use the tone set for Romania.
russia - Use the tone set for Russia.
singapore - Use the tone set for Singapore.
southafrica - Use the tone set for South Africa.
spain - Use the tone set for Spain.
sweden - Use the tone set for Sweden.
switzerland - Use the tone set for Switzerland.
taiwan- Use the tone set for Taiwan.
thailand - Use the tone set for Thailand.
turkey - Use the tone set for Turkey.
uk - Use the tone set for the UK.
venezuela - Use the tone set for Venezuela.

Mib — Vgs

Values
sameAsVgs
canadaUsa
spain
uk
france
portugal
belgium

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germany
netherlands
sweden
austria
italy
switzerland
australia
brazil
ireland
mexico
israel
romania
turkey
czech
china
taiwan
korea
japan
panama
argentina
greece
poland
newZealand
singapore
venezuela
chile
hongKong
malaysia
philippines
thailand
india
hungary
russia
custom1
custom2
custom3
custom4
custom5
pakistan
mexicoCustom1
brazilCustom1
norway
finland
denmark
bolivia
southafrica

Default sameAsVgs

ATTRIBUTE Nsta Vgs BragS minimumDtmfPowerLevel (minDtmfPwr)

Access Read and write

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Description	This attribute specifies the value of the minimum power level at which DTMF digits must be detected. This value is used to allow for different specification for different administrations. This attribute is ignored if the *DigitCollection* component is not present under the parent *Vgs*. This attribute must be a multiple of 3 on a ***2pGeMmSrVsp3*** card.
Mib	Vgs
Values	Signed (-30..-22)
Units	dBm0
Default	-27

ATTRIBUTE Nsta Vgs BragS **digitTransport**

Access	Read and write
Description	This attribute specifies the method by which digit tones are transported. If ***64kG711***, then G.729 voice channels will upspeed to send ***64kG711*** packets when DTMF is detected. If ***sendAsVoice***, DTMF is encoded using currently selected codec. If ***squelch,*** during the playback of a digit, silence is sent over the voice path, encoded at the current encoding rate. If ***relay***, this value enables negotiation of mutual support for the relay of DTMF tones as RFC2833 VoIP packets. Should this negotiation fail then behavior is the same as for ***64kG711***. A value of ***relay*** is only valid on a ***2pGeMmSrVsp3*** card. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	sendAsVoice 64kG711 squelch relay sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS **vbdTransport**

Access	Read and write

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Description	This attribute specifies the method by which voiceband data tones are transported. If ***useTone2100Rate***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected regardless of whether or not the remote gateway has indicated support for this codec. If ***useTone2100RateIfNegotiated***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected only when the remote gateway has indicated support for this codec. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	useTone2100RateIfNegotiated useTone2100Rate sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS continuityTestType (cotType)

Access	Read and write
Description	This attribute specifies the type of continuity test. The possible values are: ***4Wire*** - Use 4 Wire continuity test ***2WireAnnex B2*** - Use 2 Wire COT as specified in document ANSI T1.113.4 B2 ***2WireAnnex B3 TLRH*** - Use 2 Wire COT as specified in document ANSI T1.113.4 B3, PVG acting as a 4-wire exchange. ***2WireAnnex B3 THRL*** - Use 2 Wire COT as specified in document ANSI T1.113.4 B3, PVG acting as a 2-wire exchange. The only accepted value for ***Vsp2*** cards is ***4Wire.***
Mib	Vgs
Values	4Wire 2WireAnnexB2 2WireAnnexB3TLRH 2WireAnnexB3THRL
Default	4Wire

GROUP Nsta Vgs BragS Operational (Oper)

Properties	Operational

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Description	This group contains attributes which indicate the states of the *BragS* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS activeConnections (actConn)

Access	Read only
Description	This attribute indicates the number of *DBrag* components.
Mib	Vgs
Values	Decimal (0..2048)
Default	No default

ATTRIBUTE Nsta Vgs BragS lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the most recent call release message received that contained the CAUSE information element. Note that the call must have been successfully established before being torn down.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs BragS lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the most recent call release message received. The diagnostic code is contained in the CAUSE information element. A diagnostic code is always accompanied by the cause code. Note that the call must have been successfully established before being torn down.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs BragS successfulConnections (succConn)

Access	Read only
Description	This attribute counts the total number of successful connection setup requests. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS rejectedConnections (rejConn)

Access	Read only
Description	This attribute counts the total number of rejected connection setup requests. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS echoCancellationTailLengthValue (eCanTailValue)

Access	Read only
Description	This attribute indicates the echo cancellation tail length currently in use.
Mib	Vgs
Values	32 48 64 128
Units	msec
Default	No default

COMPONENT Nsta Vgs BragS AnnouncementLanguage

Groups	GROUP Nsta Vgs BragS AnnouncementLanguage Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs Brag/n AnnouncementLanguage.* *Nsta/n Vgs BragS/n AnnouncementLanguage* This component is used to specify an announcement language for this *Brag* or *BragS* component which differs from the *defaultLanguage* attribute specified in the *Vgs LocalAnouncements* component. The *AnnouncementLanguage* component is mutually exclusive of the

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V5Link subcomponent of *Brag* component. This restriction is not applicable to the *BragS* component.

Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs BragS AnnouncementLanguage Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the Local Announcement facility.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS AnnouncementLanguage defaultLanguage

Access	Read and write
Description	This attribute specifies the language to be used on the announcement when no language is provided via the Media Gateway Controller. When a value is specified here, it overrides the value in the *AnnouncementLanguage* component. If the value is not empty, it must be a 3 character ASCII string (lower case a-z) for example "eng".
Mib	Vgs
Values	String (0..3, ASCII)
Default	""

COMPONENT Nsta Vgs BragS Q921

Groups	GROUP Nsta Vgs BragS Q921 Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs BragS/n Q921*

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This component defines the Q.921 Layer service parameters for the PVG PRI Backhaul service.

Mib Vgs

Common Verbs
Help
List
Display
Add
DELete

GROUP Nsta Vgs BragS Q921 Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioning data for the Q.921 Layer service associated with the parent *BragS* component.

Mib Vgs

ATTRIBUTE Nsta Vgs BragS Q921 dChanTimeslot

Access Read and write

Criticality Process

Description This attribute specifies the timeslot that carries the D-channel. This must match the external TDM equipment.

Mib Vgs

Values Decimal (1..31)

Default 16

ATTRIBUTE Nsta Vgs BragS Q921 t200

Access Read and write

Description This attribute specifies the maximum time allowed between the transmission of a Layer 2 frame and the receipt of an acknowledgement from the user side. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second.

On expiry the frame is retransmitted. Retransmissions are counted in the *retriesCounter* of *DBrag/n Q921* component).

Mib Vgs

Values Decimal (0.5..5.0)

Units seconds

Default 1.0

ATTRIBUTE Nsta Vgs BragS Q921 n200

Access Read and write

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Description	This attribute specifies the maximum number of retransmissions of a Layer 2 frame before link re-establishment is initiated.
Mib	Vgs
Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs BragS Q921 t203

Access	Read and write
Description	This attribute specifies the maximum time without frame exchange during multiple frame operations. On expiry a Q.921 supervisory frame is transmitted.
Mib	Vgs
Values	Decimal (10..300)
Units	seconds
Default	10

ATTRIBUTE Nsta Vgs BragS Q921 n201

Access	Read and write
Description	This attribute specifies the maximum length of an information field in the I frame.
Mib	Vgs
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs BragS Q921 outstandingFrames (frames)

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)
Default	7

ATTRIBUTE Nsta Vgs BragS Q921 side

Access	Read and write
Criticality	Process

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Description	This attribute specifies if this end of the PRI trunk is to be considered the network end or the user end. The possible values are: ***user***, ***network***.
Mib	Vgs
Values	user network
Default	network

COMPONENT Nsta Vgs BragS NstaVgsDynamicBasicRateGroup (DBrag)

Instance	Decimal (0..127)
Groups	GROUP Nsta Vgs BragS DBrag Operational (Oper) GROUP Nsta Vgs BragS DBrag CommonOp (ComOp)
Scope	Device
Description	*Nsta/n Vgs BragS/n DynamicBasicRateGroup/n* This component represents a dynamic basic rate group. This component appears whenever an AAL1 TDM SVC connection is successfully set up to the ATM address of the parent *BragS* component. All TDM trunks within this group have the same default narrowband service attribute values, as provisioned in the parent *BragS* component. A *DBrag* component is present when an AAL1 CES connection is established and it disappears when the connection is torn down.
Mib	Vgs
Dyn. Subcomp.	COMPONENT Nsta Vgs BragS DBrag AtmConnection (AtmCon) COMPONENT Nsta Vgs BragS DBrag Q921 COMPONENT Nsta Vgs BragS DBrag ChannelAssociatedSignaling (Cas)
Common Verbs	Help List Display

GROUP Nsta Vgs BragS DBrag Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *NstaVgsDynamicBasicRateGroup* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag endPointGroupName (name)

Access	Read only

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Description	This attribute indicates the basic rate group endpoint name. This is the name used by the PVG control protocol, ASPEN. The value of this attribute is derived from the information contained within the AAL1 CES SVC setup.
Mib	Vgs
Values	String (1..80, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag **remoteAddress (address)**

Access	Read only
Description	This attribute indicates the ATM address of the remote AAL1 CES endpoint.
Mib	Vgs
Values	String (40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag **remoteChannelDetail (channelDetail)**

Access	Read only
Description	This attribute indicates the configuration of the remote AAL1 CES endpoint.
Mib	Vgs
Values	String (0..81, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag **remoteChannelStatus (status)**

Access	Read only
Description	This attribute indicates the operational status of the remote AAL1 CES endpoint. The ***up*** status indicates that there are no TDM ingress fault conditions. The ***down*** status indicates the TDM interface has detected an ingress fault condition. The ***rai*** status indicates an ingress RAI at the remote TDM interface.
Mib	Vgs
Values	up down rai
Default	No default

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GROUP Nsta Vgs BragS DBrag CommonOp (ComOp)

Properties	Operational
Description	This group contains operational attributes common to *Brag* and *DBrag*.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag outOfServiceTerminationsByMgc (oosTermsByMgc)

Access	Read only
Description	This attribute is a list of TDM terminations placed out of service by the controller. This does not include TDM terminations placed out of service by the gateway. This attribute is only relevant if the H.248 protocol is in use. If any other attribute is used, this attribute is filtered.
Mib	Vgs
List of	Decimal (1..31)
Default	No default

COMPONENT Nsta Vgs BragS DBrag AtmConnection (AtmCon)

Groups	GROUP Nsta Vgs BragS DBrag AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs BragS DBrag AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs

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Values	The name of the component
Default	No default

COMPONENT Nsta Vgs BragS DBrag **Q921**

Groups	GROUP Nsta Vgs BragS DBrag Q921 Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs BragS/n DBrag/n Q921* This component will be present when the parent *BragS* component has a *Q921* subcomponent present.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs BragS DBrag Q921 **Operational (Oper)**

Properties	Operational
Description	This group contains attributes which indicate the causes of any *Q921* component failure.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag Q921 **txFrames**

Access	Read only
Description	This attribute counts Q.921 frames transmitted towards the TDM interface since the component was activated. The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, unnumbered information frames The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Q921 **rxFrames**

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface since the component was activated. This includes HDLC errored frames.

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The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, unnumbered information frames.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs BragS DBrag Q921 **erroredFrames**

Access Read only

Description This attribute counts Q.921 frames received from the TDM interface with errors since the component was activated.

The following errors are counted: invalid frames received (FCS, overrun, or non-integral number of octets), SABM errors, DM frames Tx in response to a Rx SABME, frames with an information field that is not permitted or a supervisory unnumbered frame with an incorrect length, frame received with an invalid receive sequence, frames received with I field larger than *n201*.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs BragS DBrag Q921 **retriesCounter**

Access Read only

Description This attribute counts the number of retransmission attempts.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs BragS DBrag Q921 **linkStatus**

Access Read only

Description This attribute indicates the status of the link.

The possible values are: ***up***, ***down***.

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Mib	Vgs
Values	up down
Default	No default

COMPONENT Nsta Vgs BragS DBrag **ChannelAssociatedSignaling (Cas)**

Groups	GROUP Nsta Vgs BragS DBrag Cas Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs BragS/n DBrag/n ChannelAssociatedSignaling* This component is present when the parent *BragS* component has a *Cas* subcomponent.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs BragS DBrag Cas **Operational (Oper)**

Properties	Operational
Description	This group contains attributes that indicate the status of a *Cas* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag Cas **txSignals**

Access	Read only
Description	This attribute counts CAS line signals transmitted towards the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Cas **rxSignals**

Access	Read only
Description	This attribute counts CAS line signals received from the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Cas **busyChannels**

Access	Read only
Description	This attribute indicates the number of endpoints in answer or setup state for the *Chan* component specified in the *interfaceName* attribute of the parent component. This includes only the endpoints that are not in idle or blocked state.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Cas **blockedChannels**

Access	Read only
Description	This attribute indicates the number of endpoints in blocked state for the *Chan* component specified in the *interfaceName* attribute of the parent component.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Cas **signalFailureIndications**

Access	Read only
Description	This attribute counts the number of incoming line state changes that are not recognized as valid candidates for that stage in a call, and that are reported as a Signal Failure to the call server. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs BragS **ChannelAssociatedSignaling (Cas)**

Groups	GROUP Nsta Vgs BragS Cas Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs BragS/n ChannelAssociatedSignaling* This component represents the capability to terminate, process and

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redirect any Channel Associated Signaling information associated with *DBrag* subcomponents of the parent *BragS* component.

Mib: Vgs

Common Verbs: Help, List, Display, Add, DELete

GROUP Nsta Vgs BragS Cas Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for the *Cas* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs BragS Cas channelAssocSignalingDefinition (casDefinition)

Access: Read and write

Criticality: Process

Description: This attribute specifies a link to an *Nsta/n Vgs CasDefn/n* component, which defines the CAS signaling details.

This attribute must be supplied.

Mib: Vgs

Values: Link (Service, applicationList)

Default: No default

COMPONENT Nsta Vgs FaxRelayOverIp (FaxR)

Groups: GROUP Nsta Vgs FaxR Provisioned (Prov)
GROUP Nsta Vgs FaxR OperationalT38 (OperT38)

Scope: Device

Description: *Nsta/n Vgs FaxRelayOverIp*

This component provides the capability to transport fax using the T.38 method of demodulating and extracting fax data and relaying it across the network. This introduces greater resilience to potentially lossy IP networks through a more robust transportation method and also through provisionable protection through redundancy.
This component is restricted to the ***2pGeMmSrVsp3***,

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2pOC3ChSmIrVsp3 and ***2pVS*** cards, where an *IpMConn* component is provisioned under the *Vgs*.

Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs FaxR Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the IP Fax Relay facility.
Mib	Vgs

ATTRIBUTE Nsta Vgs FaxR v34OverVbd (v34)

Access	Read and write
Description	This attribute specifies how the system transports V.8/V.34 fax data. If ***enabled***, V.8/V.34 fax data will be transported using Voice Band Data modes through upspeed to G.711 rather than directly transitioning to T.38 mode. If ***disabled***, transition to T.38 will occur on detection of V.8/V.34 fax data. This attribute should be set to ***enabled*** only if the underlying packet loss rate of the network is less than 0.05%. For a loss rate greater than this it is recommended that V.8/V.34 fax data be transported using T.38.
Mib	Vgs
Values	enabled disabled
Default	disabled

ATTRIBUTE Nsta Vgs FaxR t38FaxUdpRedundancyDepth (redundancy)

Access	Read and write
Description	This attribute specifies the depth of redundancy used in T.38 over UDP/IP. Note that this attribute will increase the bandwidth of a T.38 transmission by a factor equal to the redundancy depth specified.
Mib	Vgs
Values	Decimal (0..3)
Default	1

ATTRIBUTE Nsta Vgs FaxR t38PacketReorderDelay (delay)

Access	Read and write

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Description	This attribute specifies how long T.38 packets are held on the receive buffer for reordering before passing to playout. This in turn determines how long out of order or late packets may be. A lower value will decrease the system's ability to reorder and playout contiguous fax data.
Mib	Vgs
Values	Decimal (0..400)
Units	msec
Default	200

GROUP Nsta Vgs FaxR OperationalT38 (OperT38)

Properties	Operational
Description	This group contains attributes which indicate attempted and actual fax relay connections.
Mib	Vgs

ATTRIBUTE Nsta Vgs FaxR t38AutonomousConnections (auto)

Access	Read only
Description	This attribute counts the connections which have negotiated autonomous transition into T38 mode. This attribute wraps to zero when it reaches its maximum value. It will also reset to zero when the *Vsp* component is locked.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs FaxR t38SuccessfulCalls (successful)

Access	Read only
Description	This attribute counts the connections that entered T.38 mode and completed successfully. This attribute wraps to zero when it reaches its maximum value. It will also reset to zero when the *Vsp* component is locked.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs FaxR t38MgcConnections (mgc)

Access	Read only
Description	This attribute counts the connections that were explicitly transitioned into T38 mode by the media gateway controller.

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This attribute wraps to zero when it reaches its maximum value. It will also reset to zero when the *Vsp* component is locked.

Mib — Vgs

Values — Decimal (0..4294967295)

Default — No default

COMPONENT Nsta Vgs DebugIpAccess (DbgAccess)

Groups
GROUP Nsta Vgs DbgAccess Provisioned (Prov)
GROUP Nsta Vgs DbgAccess OsiState (State)
GROUP Nsta Vgs DbgAccess NstaVgsConnectionStatus (ConnStat)
GROUP Nsta Vgs DbgAccess Statistics (Stats)

Scope — Device

Description — *Nsta/n Vgs DbgIpAccess*

The *DebugIpAccess* component defines an access connection from an external host to the Api Conversion Module (ACM) of the ***2pGeMmSrVsp3*** card for developer debug purposes only. This component cannot activate on any card other than the ***2pGeMmSrVsp3*** card. This component can have only one subcomponent, either a *Nap*, *SpvcAp* or *VrAp.*

Mib — Vgs

Opt. Subcomp.
COMPONENT Nsta Vgs DbgAccess NailedUpAdaptionPoint (Nap)
COMPONENT Nsta Vgs DbgAccess SpvcAccessPoint (SpvcAp)
COMPONENT Nsta Vgs DbgAccess VirtualRouterAccessPoint (VrAp)

Dyn. Subcomp. — COMPONENT Nsta Vgs DbgAccess AtmConnection (AtmCon)

Common Verbs
Help
List
Display
DELete

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VERB Ping Nsta Vgs DbgAccess

Impact	Passive
Description	*Ping -ipAddr(IP Address) Nsta/n Vgs DebugIpAccess* This command causes an ICMP echo request to be sent to the host specified by the *ipAddr* option. If a response is received for the request, a second request is sent; if no response is received for the first request, no further request is sent. The remote IP host must respond to an ICMP ping request within 5 seconds of the request being generated. This is intended for testing network connections at the IP level. Only one *Ping* command per component is allowed to be in progress at any one time.

GROUP Nsta Vgs DbgAccess **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioning data for the *DebugIpAccess* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess **ipAddress (ipAddr)**

Access	Read and write
Description	This attribute specifies the IP address of the debug capability on the Api Conversion Module (ACM) of the ***2pGeMmSrVsp3*** card. Control messages from the controller will be sent to this IP address to debug connections within this device. This address is used to advertise the gateway to the external hosts and to filter incoming IP packets (only packets destined for this *ipAddress* attribute value are accepted; all other packets are silently dropped). This attribute may be changed without affecting existing calls. This attribute may accept values in the range ***0.0.0.0*** to ***255.255.255.255*** though these limiting values themselves will be prevented by semantic check. A default value of ***0.0.0.0*** is set to ensure a legal address is provisioned. When the *DbgIpAccess* component is copied using the *Copy* command, this attribute is set to ***0.0.0.0*** to prevent a duplication of IP addresses.
Mib	Vgs
Values	IP address
Default	0.0.0.0

GROUP Nsta Vgs DbgAccess **OsiState (State)**

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs DbgAccess operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Nsta Vgs DbgAccess **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs DbgAccess **NstaVgsConnectionStatus (ConnStat)**

Properties	Operational
Description	This group contains an attribute which provides information on the status of the VGS connections.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess **currentStatus (cStat)**

Access	Read only
Description	This attribute specifies the current status of a *Vgs AtmTConn*, *IpMConn* or *Ctrl* connection. ***enabled*** indicates that the component is enabled and available to transport traffic. ***activating*** indicates that the component is progressing through its expected sequence of activation and enabling actions, and that no errors having been reported. ***atmConnectionNotReady*** indicates that a problem has been reported with the ATM VCC linked to the component's *Nap, Aap* or *Pap* subcomponent, resulting in the component being in a disabled state. ***vspNotReady*** indicates that the *Vsp* component linked to the parent *Nsta* component is either disabled or locked. ***outOfResource*** indicates that no hardware resource is available on the

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VSP card to support the component. This means that the VSP card is inadequately equipped or has suffered some level of hardware failure.

ipNetworkInaccessible indicates that a connection into the IP network cannot be created. This may be due to physical ports being disabled, or the inability of routing software to establish an appropriate connection.

Mib	Vgs
Values	enabled activating atmConnectionNotReady vspNotReady outOfResource ipNetworkInaccessible
Default	No default

GROUP Nsta Vgs DbgAccess **Statistics (Stats)**

Properties	Operational
Description	This group contains attributes which indicate traffic load and error statistics.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess **txMessages (txMsgs)**

Access	Read only
Description	This attribute counts the messages transmitted since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess **rxMessages (rxMsgs)**

Access	Read only
Description	This attribute counts messages received without errors since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess **aal5Failures (errs)**

Access	Read only

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Description	This attribute counts AAL5 errors over this control connection, where AAL5 errors represents the combined total of CRC, Length Field, and max_SDU_deliver_length errors. This attribute is filtered when the ***vgsIpGigE*** or the ***vgsIpG729GigE*** feature is provisioned, or the *VrAp* subcomponent is provisioned under this component. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs DbgAccess **NailedUpAdaptionPoint (Nap)**

Groups	GROUP Nsta Vgs DbgAccess Nap Provisioned (Prov)
Scope	Device
Description	*Nsta/n Conn/n NailedUpAdaptionPoint* *Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint* *Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint* *Nsta/n Vgs Control/n NailedUpAdaptionPoint* *Nsta/n Vgs IpMConn NailedUpAdaptionPoint* This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*). Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs DbgAccess Nap **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioning data for a *Nap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess Nap **atmConnection (atmConn)**

Access	Read and write
Criticality	Process

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Description	This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.
Mib	Vgs
Values	Link (Service, applicationName)
Default	No default

COMPONENT Nsta Vgs DbgAccess SpvcAccessPoint (SpvcAp)

Groups	GROUP Nsta Vgs DbgAccess SpvcAp Provisioned (Prov) GROUP Nsta Vgs DbgAccess SpvcAp SpvcApAddressessProv (SpvcApAddrProv) GROUP Nsta Vgs DbgAccess SpvcAp Operational (Oper) GROUP Nsta Vgs DbgAccess SpvcAp AccessPointOper (ApOper)
Scope	Device
Description	*Nsta/n Vgs Control/n SpvcAccessPoint* *Nsta/n Vgs IpMConn SpvcAccessPoint* *Nsta/n Conn/n SpvcAccessPoint* This component defines ATM SPVC originating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

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VERB Restart Nsta Vgs DbgAccess SpvcAp

Impact	Service
Description	*Restart Nsta/n Vgs Control/n SpvcAccessPoint* *Restart Nsta/n Vgs IpMConn SpvcAccessPoint* *Restart Nsta/n Conn/n SpvcAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs DbgAccess SpvcAp **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **atmServiceCategory (service)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable

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bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *SpvcAp* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *SpvcAp* is an *IpMConn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **peakCellRate (pcr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **sustainedCellRate (scr)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s

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Default	0

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **maximumBurstSize (mbs)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **retryLimit (limit)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs DbgAccess SpvcAp **SpvcApAddressessProv (SpvcApAddrProv)**

Properties	Provisioned
Description	This group contains NSAP address provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **localAddress (localAddr)**

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is

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provided.

If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.

Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **remoteVpiVci (rVpiVci)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for an *SpvcAp* component.
Mib	Vgs
Values	Integer Sequence (0..255; 1..65535)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **addressToCall (addrToCall)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* application in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to set up a connection to the first address in the list and then continues as before.
Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs DbgAccess SpvcAp **Operational (Oper)**

Properties	Operational

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Description	This group contains operational status information for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp svcStatus (status)

Access	Read only
Description	This attribute specifies the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* for consecutive connection set up attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp lastSetupFailureCause (failCause)

Access	Read only
Description	This attribute contains the cause code in the last call release message following an unsuccessful call set up attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)

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Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **lastSetupFailureDiagnostic (failDiag)**

Access	Read only
Description	This attribute contains the diagnostic code in the last call release message following an unsuccessful call set up attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **retryTimeRemaining (timer)**

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches ***0*** an attempt will be made to establish the connection. When the timer is not running a value of ***0*** is returned.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **retryFailures (failures)**

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to ***0*** whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to ***0*** when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs DbgAccess SpvcAp **AccessPointOper (ApOper)**

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

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ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **remoteAddress (rAddr)**

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **lastTearDownCause (cause)**

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp **lastTearDownDiagnostic (diag)**

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs DbgAccess **AtmConnection (AtmCon)**

Groups	GROUP Nsta Vgs DbgAccess AtmCon Operational (Oper)
Scope	Device

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Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs DbgAccess AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs DbgAccess VirtualRouterAccessPoint (VrAp)

Groups	GROUP Nsta Vgs DbgAccess VrAp Provisioned (Prov)
Scope	Application
Description	*Nsta/n Vgs Ctrl/n VrAp* *Nsta/n Vgs IpMConn VrAp* *Nsta/n Vgs DbgAccess VrAp* This component represents a point of access to a *VirtualRouter* component, which provides an IP forwarding functionality to this *Nsta/n Vgs* component hierarchy. If at least one *VrAp* component is used within a *Nsta/n Vgs* component hierarchy, then all IP network access from within that hierarchy must be via *VrAp* components.

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In addition, a *VCac* component cannot be provisioned within a *Nsta/n Vgs* component hierarchy which contains a *VrAp* component.

Mib: Vgs

Common Verbs: Help, List, Display, Add, DELete

GROUP Nsta Vgs DbgAccess VrAp Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for the *VrAp* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs DbgAccess VrAp subnetAccessName (subnet)

Access: Read and write

Description: This attribute specifies the *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance to be used by this *VrAp*.

The value of the *ipAddr* attribute defined by the parent of this *VrAp* must belong to the subnet defined by the specified *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance.

Mib: Vgs

Values: The name of the component

Default: No default

COMPONENT Nsta Vgs IpInterface (IpIf)

Groups: GROUP Nsta Vgs IpIf IpIfProv (IpPr)
GROUP Nsta Vgs IpIf IpIfOp (IpOp)

Scope: Application

Description: *Nsta/n Vgs IpIf*

This component controls and monitors a single default router address on a logical IP network which provides access to the local subnet for the VGS

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IP applications when the ***vgsIpGigE*** or the ***vgpIpG729GigE*** feature is provisioned.

Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ipif IpIfProv (IpPr)

Properties	Provisioned
Description	This group contains the provisionable data for the *NstaVgsIpInterface* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ipif defaultRouterAddress (defRtr)

Access	Read and write
Description	This attribute specifies the IP address of the default router in the local subnet for *VspEth1000BaseSX* ports. IP packets destined for a device outside the local subnet are forwarded to this router by default.
Mib	Vgs
Values	IP address
Default	0.0.0.0

ATTRIBUTE Nsta Vgs Ipif subnetMask (netMask)

Access	Read and write
Description	This attribute specifies the subnet mask of the network connected to the *VspEth1000BaseSX* ports. Any destination outside the subnet must be forwarded to a router.
Mib	Vgs
Values	IP address
Default	255.255.252.0

ATTRIBUTE Nsta Vgs Ipif switchoverOnFailure (swOver)

Access	Read and write
Description	This attribute specifies if a card switchover should occur if a steady state link failure is observed on all *VspEth1000BaseSX* ports on this card. A switchover to the standby card occurs only when all of the following apply: 1) The *switchoverOnFailure* attribute is enabled.

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2) The *IpIf* component is without an active port for a continuous period specified in the *switchoverHoldoffTime* attribute
3) At least one of the *VspEth1000BaseSX* ports has been active since the card started up following a reboot or a switchover.
4) The standby card is available.

Possible values are:

enabled - a switchover will occur, subject to the conditions specified above.

disabled - a switchover will not take place if a link failure is detected.

Mib	Vgs
Values	enabled disabled
Default	disabled

ATTRIBUTE Nsta Vgs IpIf switchoverHoldoffTime (holdoffTime)

Access	Read and write
Description	This attribute specifies how long a steady state link failure on all provisioned *VspEth1000BaseSX* ports can occur before a card switchover is triggered. This attribute only has meaning when the *switchoverOnFailure* attribute is ***enabled***.
Mib	Vgs
Values	Decimal (1..180)
Units	seconds
Default	30

GROUP Nsta Vgs IpIf IpIfOp (IpOp)

Properties	Operational
Description	This group contains the operational data for *Nsta Vgs IpInterface* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpIf unsupportedFramesReceived (rxUnsupFrm)

Access	Read only
Description	This attribute indicates the number of frames received with a protocol type which is neither IP nor ARP. This count does not include MAC control frames. This counter wraps to zero after it reaches its maximum value.
Mib	Vgs

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Values	Long Integer
Default	No default

COMPONENT Nsta Vgs MediaGatewayController (Mgc)

Instance	String (1..20, ASCII)
Groups	GROUP Nsta Vgs Mgc Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs MediaGatewayController/n* This component contains the H.248 attributes that are specific to a particular controller.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Mgc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Mgc* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Mgc initialMgcAddress (addr)

Access	Read and write
Description	This attribute specifies the controller IP address to which the gateway sends the initial H.248 registration message. The controller IP address to which the gateway sends subsequent H.248 transaction requests may be different from this attribute, depending on whether H.248 registration redirection, handoff, or failover procedures have been performed. The controller IP address currently in use is given by the *H248 mgcAddress* operational attribute. The values ***0.0.0.0*** and ***255.255.255.255*** are not permitted.
Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs Mgc initialMgcPort (port)

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Access	Read and write
Description	This attribute specifies the controller UDP port to which the gateway sends the initial H.248 registration message. The controller UDP port to which the gateway sends subsequent H.248 transaction requests may be different from this attribute, depending on whether H.248 registration redirection, handoff, or failover procedures have been performed. The controller UDP port currently in use is given by the *H248 mgcPort* operational attribute.
Mib	Vgs
Values	Decimal (1..65535)
Default	2944

ATTRIBUTE Nsta Vgs Mgc encodingFormat (encFmt)

Access	Read and write
Description	This attribute specifies the encoding format used by the gateway to send H.248 messages to this controller. The format may be one of the following: - ***longText*** - a readable format, but longer to transfer. ***shortText*** - a short, space efficient format, suitable for machine transfer, but less readable.
Mib	Vgs
Values	shorttext longtext
Default	shorttext

ATTRIBUTE Nsta Vgs Mgc ds3Format

Access	Read and write
Criticality	Component
Description	This attribute specifies the DS3 physical termination identifier format used in the H.248 messages. DS3 physical termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	DS3/#2/#1/#2/#1

ATTRIBUTE Nsta Vgs Mgc e1Format

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Access	Read and write
Criticality	Component
Description	This attribute represents the E1 physical termination identifier format used by the controller. E1 physical termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	E1/#2/#2/#1

ATTRIBUTE Nsta Vgs Mgc **stmnVc4Vc12Format**

Access	Read and write
Criticality	Component
Description	This attribute specifies the STM-n with VC4/VC12 physical termination identifier format used by the controller. STM-n with VC4/VC12 physical termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	STM/#1/#1/#1/VC4VC12/#1/#1/#1/#1/#1

ATTRIBUTE Nsta Vgs Mgc **stsnOcnVt15Format**

Access	Read and write
Criticality	Component
Description	This attribute specifies the STS-n/OC-n with VT15 physical termination identifier format used by the controller. STS-n/OC-n with VT15 physical termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	STS/#1/#1/#1/VT15/#1/#1/#1/#1

ATTRIBUTE Nsta Vgs Mgc **ipFormat**

Access	Read and write
Criticality	Component

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Description	This attribute specifies the IP ephemeral termination identifier format being used by the controller. IP ephemeral termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	rtp/#1

ATTRIBUTE Nsta Vgs Mgc aal2Format

Access	Read and write
Criticality	Component
Description	This attribute specifies the AAL2 ephemeral termination identifier format used by the controller. AAL2 ephemeral termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	aal2/#1

ATTRIBUTE Nsta Vgs Mgc initialNormalMgExecutionTime (time)

Access	Read and write
Description	This attribute specifies the value of the H.248 MG property root/ normalMGExecutionTime on H.248 cold boot. This is the initial value of the interval within which the controller expects a response, exclusive of network delay. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	500

ATTRIBUTE Nsta Vgs Mgc initialNormalMgcExecutionTime (cTime)

Access	Read and write
Description	This attribute specifies the value of the H.248 MG property root/ normalMGCExecutionTime on H.248 cold boot. This is the initial value of the interval within which the gateway expects a response from the controller, exclusive of network delay.

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	The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	500

ATTRIBUTE Nsta Vgs Mgc initMgProvnlRespTimerValue

Access	Read and write
Description	This attribute specifies the value of the H.248 MG property root/ MGProvisionalResponseTimerValue on H.248 cold boot. This is the initial value of the time within which the controller expects a Pending Response from the gateway if a Transaction cannot be completed. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	2000

ATTRIBUTE Nsta Vgs Mgc initMgcProvnlRespTimerValue

Access	Read and write
Description	This attribute specifies the value of the H.248 MG property root/ MGCProvisionalResponseTimerValue on H.248 cold boot. This is the initial value of the time within which the gateway expects a Pending Response from the controller if a Transaction cannot be completed. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	500

ATTRIBUTE Nsta Vgs Mgc maximumTxRetries (ret)

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions for an unacknowledged H.248 transaction request. If the gateway has not received a message from the controller after the maximum number of retries, then the gateway will perform the H.248 failover procedure.

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Mib	Vgs
Values	Decimal (0..10)
Default	2

ATTRIBUTE Nsta Vgs Mgc maximumTxRetryTime (tRet)

Access	Read and write
Description	This attribute specifies the maximum time between retransmissions of an unacknowledged H.248 transaction request by the controller. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	1000

ATTRIBUTE Nsta Vgs Mgc transactionQuarantineTimer (quar)

Access	Read and write
Description	This attribute is the H.248 long timer value (LONG-TIMER) used for quarantining H.248 responses sent to the controller. The gateway will keep H.248 response copies for at least this time.
Mib	Vgs
Values	Decimal (1..24)
Units	seconds
Default	24

ATTRIBUTE Nsta Vgs Mgc egressCotDuration

Access	Read and write
Description	This attribute specifies the default duration of the egress continuity test tone generated by the gateway. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (1..180000)
Units	msec
Default	20000

ATTRIBUTE Nsta Vgs Mgc highestVersion (hiVer)

Access	Read and write

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Description	This attribute specifies the highest protocol version to be negotiated with the controller upon H.248 registration.
Mib	Vgs
Values	Decimal (1..1)
Default	1

ATTRIBUTE Nsta Vgs Mgc mgList

Access	Read only
Description	This attribute specifies a list of links to *H248* components that use this component.
Mib	Vgs
List of	Link (Service, mgcList)
List Size	1
Default	No default

COMPONENT Nsta Vgs H248

Instance	Decimal (0)
Groups	GROUP Nsta Vgs H248 Provisioned (Prov) GROUP Nsta Vgs H248 Operational (Oper) GROUP Nsta Vgs H248 Statistics (Stats)
Scope	Device
Description	*Nsta/n Vgs H248/n* This component represents an interface between a gateway and a controller using the H.248 (Megaco) Protocol.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs H248 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *H248* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs H248 mgMid

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Access	Read and write
Criticality	Component
Description	This attribute specifies the Message Identifier that the gateway includes as part of every message sent to the controller. The format of this string is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs H248 udpPortConnection (port)

Access	Read and write
Description	This attribute is a link to the *Nsta/n Vgs Ctrl/n UdpPort/n* component that defines the MG local UDP port for the H.248 protocol. The default UDP port for H.248 text format is 2944.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs H248 sdpFormat

Access	Read and write
Description	This attribute specifies the Session Description Protocol (SDP) media line compliance for SDPs sent and received by the gateway. ***strictH248*** - force strict H.248 SDP media line compliance for both receiving and transmitting SDPs. ***h248*** - flexible when receiving SDP media lines. Complies with H.248 when sending SDP media lines. ***nonH248*** - flexible when receiving SDP media lines and may send multiple SDP media lines per SDP group when appropriate.
Mib	Vgs
Values	h248 strictH248 nonH248
Default	nonH248

ATTRIBUTE Nsta Vgs H248 atmSdpTransmitFormat

Access	Read and write

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Description	This attribute indicates the Session Description Protocol (SDP) format that the gateway sends when establishing an AAL2 connection. ***vgcp*** - Comply with the VGCP SDP format. ***rfc3108*** - Comply with the RFC-3108 SDP format.
Mib	Vgs
Values	vgcp rfc3108
Default	rfc3108

ATTRIBUTE Nsta Vgs H248 mgcList

Access	Read and write
Description	This attribute specifies an ordered list of links to associated *Mgc* components, which specify the provisioned attributes for use with the primary and (multiple) secondary controllers. The controller preference used by the gateway when registering is determined by the order of adding links (that is, the first is preferred). The list must contain at least one entry.
Mib	Vgs
List of	Link (Service, mgList)
List Size	3
Default	No default

GROUP Nsta Vgs H248 Operational (Oper)

Properties	Operational
Description	This group contains operational data for the *H248* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs H248 negotiatedVersion (vers)

Access	Read only
Description	This attribute is the current H.248 protocol version which the gateway sends in H.248 transaction requests and is therefore the negotiated version between the controller and the gateway. The attribute equals ***0*** when the gateway is registering.
Mib	Vgs
Values	Decimal (0..99)
Default	No default

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ATTRIBUTE Nsta Vgs H248 maximumContexts (ctxts)

Access	Read only
Description	This attribute indicates the maximum number of H.248 contexts supported by the gateway.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs H248 normalMgExecutionTime (time)

Access	Read only
Description	This attribute indicates the current value of the interval within which the controller expects a response from the gateway, exclusive of network delay.
Mib	Vgs
Values	Decimal (0..10000)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs H248 normalMgcExecutionTime (cTime)

Access	Read only
Description	This attribute indicates the current value of the interval within which the gateway expects a response from the controller, exclusive of network delay.
Mib	Vgs
Values	Decimal (0..10000)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcProvisionalRespTimerValue

Access	Read only
Description	This attribute indicates the current value of the time within which the gateway expects a Pending Response from the controller if a Transaction cannot be completed.
Mib	Vgs
Values	Decimal (0..10000)
Units	msec

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Default	No default

ATTRIBUTE Nsta Vgs H248 maximumInactivityTime (mit)

Access	Read only
Description	This attribute indicates the time the gateway will wait for an H.248 message from the controller before the gateway attempts to contact the controller to determine if it is still active. The value ***off*** indicates that the maximum inactivity timer is not enabled.
Mib	Vgs
Values	Decimal (0..655350) off
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs H248 failovers

Access	Read only
Description	This attribute counts the number of times the gateway has performed failover procedures and attempted contact with another controller since the *H248* component was activated.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcMid

Access	Read only
Description	This attribute indicates the Message Identifier of the current controller being used. This value is obtained from the controller response to the gateway registration message. The attribute has zero length when the gateway is registering.
Mib	Vgs
Values	String (0..64, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcAddress (addr)

Access	Read only
Description	This attribute indicates the current controller IP address to which the gateway sends H.248 transaction requests.
Mib	Vgs

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Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcPort

Access	Read only
Description	This attribute indicates the current controller UDP port to which the gateway sends H.248 transaction requests.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcInUse

Access	Read only
Description	This attribute indicates the instance name of the *Mgc* component currently in use.
Mib	Vgs
Values	The name of the component
Default	No default

ATTRIBUTE Nsta Vgs H248 mgProvisionalRespTimerValue

Access	Read only
Description	This attribute indicates the current value of the time within which the controller expects a Pending Response from the gateway if a Transaction cannot be completed.
Mib	Vgs
Values	Decimal (0..10000)
Units	msec
Default	No default

GROUP Nsta Vgs H248 Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *H248* component. These are filtered on ***12mVspAal*** and ***Vsp2*** cards.
Mib	Vgs

ATTRIBUTE Nsta Vgs H248 txRetransmissions

Access	Read only

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Description	This attribute counts the number of media gateway control protocol retransmissions sent by the Gateway. Each retransmission of a given message will be individually counted.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs H248 rxRetransmissions

Access	Read only
Description	This attribute counts the number of media gateway control protocol retransmissions sent by the Gateway. Each retransmission of a given message will be individually counted.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs PacketNetworkProfile (PktProf)

Instance	Decimal (0)
Groups	GROUP Nsta Vgs PktProf Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs PacketNetworkProfile/n* The *PacketNetworkProfile* component represents a profile of the PVG packet side characteristics of narrowband calls.
Mib	Vgs
Common Verbs	Help List Display Add

GROUP Nsta Vgs PktProf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *PacketNetworkProfile* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs PktProf bufferSize (bufSize)

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Access	Read and write
Criticality	Component
Description	This attribute represents the capacity of the packet delay variation (PDV) buffer in milliseconds of data. To ensure that PDV can be tolerated it is necessary to initialize the system with a reserve of information in the buffer used to reassemble data for transmission across the TDM network. The size of this reserve is defined by the *pdvt* and *bufferSize* attributes. The amount of data played out to the TDM network (a period of time defined by the *packetDelayVariationTolerance* attribute) is equal to the size of the initialization reserve. There should be enough data in the reassembly buffer to allow transmission for a period of time defined by the *pdvt* attribute before buffer underflow due to the next delayed packet occurs. If the ***VgsIp, VgsIpG729, VgsIpGe,*** or ***VgsIpG729Ge*** feature has been provisioned the default *bufferSize* will be ***60ms***; otherwise the *bufferSize* will be ***50ms***. The value should always be greater than the maximum packet size plus two times the value of the *pdvt* attribute, except on ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3*** and ***2pOC3ChSmIrVsp4e*** cards where it need only be greater than or equal to two times the value of the *pdvt* attribute. The maximum packet size is 20ms for ***VgsIp***, ***VgsIpG729, VgsIpGe*** and ***VgsIpG729Ge*** features and 10ms for all other features. This attribute has no effect if the *packetDelayVariationTolerance* attribute is set to ***adaptive***.
Mib	Vgs
Values	Decimal (5..100)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs PktProf **packetDelayVariationTolerance (pdvt)**

Access	Read and write
Criticality	Component
Description	This attribute represents the maximum packet arrival jitter in milliseconds that the reassembly process will tolerate in the packet stream without producing errors on the TDM interface. This attribute together with the *bufferSize* attribute, can be configured to optimize the jitter versus absolute delay trade off in various network configurations. The value should always be less than the value of the *bufferSize* attribute

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	minus the maximum packet size divided by two, except on ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3*** and ***2pOC3ChSmIrVsp4e*** cards, where it need only be less than or equal to the value of the *bufferSize* attribute divided by two. The maximum packet size is 20ms for ***VgsIp***, ***VgsIpG729, VgsIpGe,*** and ***VgsIpG729Ge*** features and 10ms for all other features. If set to ***adaptive***, the hardware attempts to minimise the absolute delay while allowing for the maximum packet arrival jitter encountered. This value is only supported on the following cards: ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3,*** ***2pOC3ChSmIrVsp4e***.
Mib	Vgs
Values	Decimal (5..50) adaptive
Units	msec
Default	20

ATTRIBUTE Nsta Vgs PktProf lossIntegrationPeriod (intPeriod)

Access	Read and write
Description	This attribute represents the interval of time in seconds for which a loss of packet condition must persist before the corresponding call is dropped. A value of zero specifies that packet loss integration is disabled and therefore call connections are not suspended after packet loss.
Mib	Vgs
Values	Decimal (0..50)
Units	seconds
Default	5

ATTRIBUTE Nsta Vgs PktProf silenceDetectionHangOverTime (silDetTime)

Access	Read and write
Description	This attribute represents the time in milliseconds for which the speech path is left on, before being suppressed when a timeslot is silent. This helps to prevent clipping at the end of words.
Mib	Vgs
Values	Decimal (30..500)
Units	msec
Default	200

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ATTRIBUTE Nsta Vgs PktProf silenceSuppression (silSup)

Access	Read and write
Description	This attribute represents whether silence suppression is performed. A value of ***enabled*** indicates that silence suppression is performed as default. For each connection this default can be overridden by the controller. A value of ***disabled*** indicates that silence suppression is not performed under any circumstances.
Mib	Vgs
Values	enabled disabled
Default	disabled

ATTRIBUTE Nsta Vgs PktProf silenceSuppressionThreshold (silSupThresh)

Access	Read and write
Description	This attribute represents the level above which silence suppression is not performed. A value in the range -39 to -36 dBm0 is only permitted on ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3*** and ***2pOC3ChSmIrVsp4e*** cards.
Mib	Vgs
Values	Signed (-60..-36)
Units	dBm0
Default	-40

ATTRIBUTE Nsta Vgs PktProf digitTransport

Access	Read and write
Description	This attribute represents the method by which digit tones are transported. If set to ***64kG711***, then G.729 voice channels will upspeed to send ***64kG711*** packets when DTMF is detected. If set to ***sendAsVoice***, DTMF is encoded using currently selected codec. If set to ***squelch,*** during the playback of a digit, silence is sent over the voice path, encoded at the current encoding rate. If set to ***relay***, this value enables negotiation of mutual support for the relay of DTMF tones as RFC2833 VoIP packets. Should this negotiation fail then behavior is the same as for ***64kG711***. A value of ***relay*** is only valid on ***2pGeMmSrVsp3*** and ***2pOC3ChSmIrVsp3*** and ***2pOC3ChSmIrVsp4e*** cards.

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If the *Sw Lpt featureList* attribute contains ***vgsAtm***, ***vgsAtmDc*** or ***vgsIp*** and the card type is ***12mVspAal*** or ***Vsp2***, this attribute is ignored and the value of ***sendAsVoice*** will be the digit tone transport method.

Mib — Vgs

Values — sendAsVoice
64kG711
squelch
relay

Default — No default

ATTRIBUTE Nsta Vgs PktProf vbdTransport

Access — Read and write

Description — This attribute represents the method by which voiceband data tones are transported.

If set to ***useTone2100Rate***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected regardless of whether or not the remote gateway has indicated support for this codec.

If set to ***useTone2100RateIfNegotiated***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected only when the remote gateway has indicated support for this codec.

Mib — Vgs

Values — useTone2100RateIfNegotiated
useTone2100Rate

Default — useTone2100RateIfNegotiated

ATTRIBUTE Nsta Vgs PktProf stateChangeSignalingMode (scsMode)

Access — Read and write

Description — This attribute specifies the mechanism that the gateway uses to signal inband changes in call state to the gateway on the far side of the packet network. This attribute only applies to the following features:

vgsAtm
vgsAtmG729

The possible values for this attribute are:

proprietary - Proprietary PVG tone indication packets are sent.

itu - Standard User State Control (USC) packets are sent, in compliance with ITU-T Recommendation 1.366.2 Annex O.

A value of ***proprietary*** is only permitted on the following cards:

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12mVspAal,
Vsp2,
Vsp2W,
2pGeMmSrVsp3.

A value of ***itu*** is only permitted on the following cards:

2pGeMmSrVsp3,
2pOC3ChSmIrVsp3,
2pOC3ChSmIrVsp4e.

For the ***2pOC3ChSmIrVsp3*** and ***2pOC3ChSmIrVsp4e***card, the default for this attribute is ***itu***. For all other cards the defult for this attribute is ***proprietary***.

Mib — Vgs

Values — proprietary
itu

Default — No default

ATTRIBUTE Nsta Vgs PktProf overrideCodecNegotiation (ocn)

Access — Read and write

Description — This attribute provides a mechanism to override the normal codec negotiation procedures to allow optimization between RTO connected Gateways..

When the ***vgsIpRtoCdma*** feature is provisioned, any of the following values may be provisioned:

disabled
wirelineRto
wirelessRto

For all other features, this attribute must be set to ***disabled***.

Mib — Vgs

Values — disabled
wireline
wireless
wirelineRto
wirelessRto
wirelineTrfo
wirelessTrfo

Default — disabled

ATTRIBUTE Nsta Vgs PktProf tone2100Rate (toneRate)

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Access	Read and write
Description	This attribute represents the coding algorithm to be used when a 2100 Hz tone is detected (phase reversal may or may not be detected). This attribute takes precedence over the *defaultCodecList* attribute. For all card types, this attribute must be set to ***64kG711A or 64kG711U*** when using IP transport. When the ***vgsAtm*** feature is provisioned on a ***2pOC3ChSmIrVsp3*** card, then this attribute must be set to ***64kG711A or 64kG711U*** if the attribute *defaultCodecList* has been set to ***8kG729***.
Mib	Vgs
Values	64kG711U 64kG711A 32kG726ITU
Default	64kG711A

ATTRIBUTE Nsta Vgs PktProf **defaultCodecList (defCList)**

Access	Read and write
Description	This attribute represents the ordered list of coding algorithms to be used under normal conditions (when no 2100 Hz tone is detected). For each connection, this default coding algorithm can be overridden by the controller. The first value in the list is the ***defaultVoiceRate*** codec. The values in the list are differentiated by the ***featureList*** provisioned for various ***cardTypes***. The list will be able to handle up to 16 codecs for ***VoIP*** features. The list will be able to handle up to 1 codec for ***VoATM*** features. The first instance of ***64kG711U*** or ***64kG711A*** in this list implicitly defines the default packet log law. While using ***VoIp*** features, ***all*** the supported codecs must be provisioned in the defaultCodecList. Only the order can be changed. Following is the list of supported codecs for ***VoIP*** features: When the feature ***vgsIp*** or ***vgsIpGe*** is provisioned for cardType ***Vsp2,*** the supported codecs are - ***64kG711A and 64kG711U*** When the feature ***vgsIpG729*** is provisioned for cardType ***Vsp2,*** the supported codecs are - ***64kG711A, 64kG711U and 8kG729*** When the feature ***vgsIp*** is provisioned for cardTypes ***2pOC3ChSmIrVsp3, 2pVS or 2pOC3ChSmIrVsp4e,*** the supported codecs are - ***64kG711A, 64kG711U, 32kG726ITU and 8kG729*** When the feature ***vgsIpTrFo*** is provisioned for cardTypes

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2pOC3ChSmIrVsp3 or 2pOC3ChSmIrVsp4e, the supported codecs are - ***64kG711A, 64kG711U and EVRC0***

When the feature ***vgsIpRtoCdma*** is provisioned for cardTypes ***2pOC3ChSmIrVsp3, 2pVS or 2pOC3ChSmIrVsp4e***, the supported codecs are - ***64kG711A, 64kG711U, 8kG729 and EVRC0***

When the features ***vgsIp or vgsIpGe*** is provisioned for the cardType ***2pGeMmSrVsp3***, the supported codecs are - ***64kG711A, 64kG711U and 32kG726ITU***

When the features ***vgsIpG729 or vgsIpG729Ge*** is provisioned for the cardType ***2pGeMmSrVsp3***, the supported codecs are - ***64kG711A, 64kG711U, 32kG726ITU and 8kG729***

While using ***VoATM*** features, only ***one*** of the supported codecs can be provisioned for the defaultCodecList. Following is the list of supported codecs for ***VoATM*** features.

When feature ***vgsAtm*** is provisioned for cardTypes ***2pGeMmSrVsp3, 2pOC3ChSmIrVsp3 or 2pVS,*** the supported codecs are ***- 64kG711A, 64kG711U, 32kG726ITU and 24kG726ITU***

When feature ***vgsAtmG729*** is provisioned for cardTypes ***2pGeMmSrVsp3, 2pOC3ChSmIrVsp3 or 2pVS,*** the supported codecs are - ***64kG711A, 64kG711U, 32kG726ITU, 24kG726ITU and 8kG729***

When the feature ***vgsAtm*** is provisioned for cardType ***Vsp2,*** the supported codecs are ***- 64kG711A, 64kG711U and 32kG726ITU***

When the feature ***vgsAtmG729*** is provisioned for cardType ***Vsp2,*** the supported codecs are ***- 64kG711A, 64kG711U, 32kG726ITU and 8kG729***

Following codecs are not supported in the current release: ***40kG726ITU 16kG726ITU 40kG726IETF 32kG726IETF 24kG726IETF 16kG716IETF rtAudio***

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Mib	Vgs
List of	64kG711U 64kG711A 8kG729 evrc evrc0 40kG726ITU 32kG726ITU 24kG726ITU 16kG726ITU 40kG726IETF 32kG726IETF 24kG726IETF 16kG726IETF rtAudio
Default	No default

COMPONENT Nsta Vgs TdmAccessGroup (Tag)

Instance	Decimal (0..16777215)
Groups	GROUP Nsta Vgs Tag Provisioned (Prov) GROUP Nsta Vgs Tag OsiState (State) GROUP Nsta Vgs Tag Operational (Oper) GROUP Nsta Vgs Tag CommonOp (ComOp)
Scope	Device
Description	*Nsta/n Vgs Tag/n* This component represents a group of TDM timeslots in a TDM primary rate stream associated with this VSP, and relates them to a processing profile. This component defines default processing for all TDM connections represented in this *TdmAccessGroup* component. For each connection, this default processing may be overridden by the controller.
Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs Tag ChannelAssociatedSignaling (Cas)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Tag Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the provisioning data for the *TdmAccessGroup* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tag interfaceName (ifName)

Access	Read and write
Criticality	Process
Description	This attribute specifies the link to a *Chan* component. This *Chan* component must exist on the same Functional Processor.
Mib	Vgs
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs Tag profile (prof)

Access	Read and write
Description	This attribute specifies the *TdmNetworkProfile* component to use on the TDM trunks of the *Tag* component when a call is setup.
Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

GROUP Nsta Vgs Tag OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tag adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Vgs

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Nsta Vgs Tag operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Vgs

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Nsta Vgs Tag usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Vgs

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Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Tag Operational (Oper)

Properties	Operational
Description	This group contains attributes that indicate the *Tag* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tag status

Access	Read only
Description	This attribute indicates the status of a *Tag*. The possible values are: ***enabled*** - no failure. ***vgsNotReady*** - the Media Gateway is unavailable. This is currently indicated by the *operationalState* of the *Vsp* component being ***disabled***. ***chanNotReady*** - the TDM *Chan* component is locked, or the *Chan proceduralStatus* is ***initializationRequired***. ***chanDegraded*** - the TDM *Chan* or associated primary rate interface has an outstanding alarm. ***resourceUnavailable*** - there is not enough hardware resource to handle all timeslots of this *Tag*. ***casNotReady*** - the *operationalState* of the *CasDefn* component linked to by the *Cas* subcomponent of this *Tag* is currently ***disabled***.
Mib	Vgs
Values	vgsNotReady chanNotReady enabled chanDegraded resourceUnavailable casNotReady
Default	No default

GROUP Nsta Vgs Tag CommonOp (ComOp)

Properties	Operational
Description	This group contains operational attributes common to *Brag* and *DBrag*.

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Mib	Vgs

ATTRIBUTE Nsta Vgs Tag outOfServiceTerminationsByMgc (oosTermsByMgc)

Access	Read only
Description	This attribute is a list of TDM terminations placed out of service by the controller. This does not include TDM terminations placed out of service by the gateway. This attribute is only relevant if the H.248 protocol is in use. If any other attribute is used, this attribute is filtered.
Mib	Vgs
List of	Decimal (1..31)
Default	No default

COMPONENT Nsta Vgs Tag ChannelAssociatedSignaling (Cas)

Groups	GROUP Nsta Vgs Tag Cas Provisioned (Prov) GROUP Nsta Vgs Tag Cas Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs Brag/n ChannelAssociatedSignaling* *Nsta/n Vgs Tag/n ChannelAssociatedSignaling* This component represents the capability to terminate, process and redirect any Channel Associated Signaling information associated with the parent component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Tag Cas Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Cas* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tag Cas channelAssocSignalingDefinition (casDefinition)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to an *Nsta/n Vgs CasDefn/n* component, which defines the CAS signaling details.

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This attribute must be supplied.

Mib Vgs

Values Link (Service, applicationList)

Default No default

GROUP Nsta Vgs Tag Cas Operational (Oper)

Properties Operational

Description This group contains attributes that indicate the status of a *Cas* component.

Mib Vgs

ATTRIBUTE Nsta Vgs Tag Cas txSignals

Access Read only

Description This attribute counts CAS line signals transmitted towards the TDM interface since the component was activated.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Tag Cas rxSignals

Access Read only

Description This attribute counts CAS line signals received from the TDM interface since the component was activated.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Tag Cas busyChannels

Access Read only

Description This attribute indicates the number of endpoints in answer or setup state for the *Chan* component specified in the *interfaceName* attribute of the parent component. This includes only the endpoints that are not in idle or blocked state.

Mib Vgs

Values Decimal (0..30)

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Default	No default

ATTRIBUTE Nsta Vgs Tag Cas blockedChannels

Access	Read only
Description	This attribute indicates the number of endpoints in blocked state for the *Chan* component specified in the *interfaceName* attribute of the parent component.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs Tag Cas signalFailureIndications

Access	Read only
Description	This attribute counts the number of incoming line state changes that are not recognized as valid candidates for that stage in a call, and that are reported as a Signal Failure to the call server. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs TdmNetworkProfile (TProf)

Instance	Decimal (0..15)
Groups	GROUP Nsta Vgs TProf Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs TdmNetworkProfile/n* This component represents a profile defining TDM network behaviour that can be referenced by *Tag* components.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs TProf Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the provisioning data for the *TdmNetworkProfile* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs TProf tdmLogLaw (loglaw)

Access	Read and write
Description	This attribute specifies the G.711 companding law to use. The possible values are: ***aLaw:*** Alaw companding is used. ***muLaw:*** Mulaw companding is used. ***autoConfigured:*** Mulaw companding is used by *DS1* trunks, while Alaw companding is used by *E1* trunks.
Mib	Vgs
Values	muLaw aLaw autoConfigured
Default	autoConfigured

ATTRIBUTE Nsta Vgs TProf ingressGain (iGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM ingress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-15..15)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs TProf egressGain (eGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM egress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-15..15)
Units	dB
Default	0

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ATTRIBUTE Nsta Vgs TProf minimumEchoReturnLoss (minEchoRetLoss)

Access	Read and write
Description	This attribute specifies the minimum echo return loss that can be expected on the line. For the following features, the default for this attribute is ***3***: ***gsmBicnMg***, ***umtsBicnMg***, ***cdmaCodec***. For all other features, the default for this attribute is ***6***.
Mib	Vgs
Values	Decimal (0; 3; 6)
Units	dB
Default	No default

ATTRIBUTE Nsta Vgs TProf echoCancellation (eCan)

Access	Read and write
Description	This attribute specifies whether echo cancellation is enabled or disabled. Note that echo cancellation is always disabled when a 2100 Hz tone is detected. The operator may decide to disable this functionality if a third-party echo canceller is present in the network, because having more than one echo canceller will adversely affect voice quality. Note that the gateway controller may override this attribute on a call by call basis to activate or deactivate echo cancellation. This attribute does not have any effect on Wireless digital data services. ***disabled*** - Disables echo cancellation. ***g165Mode*** - Enables echo cancellation except when a 2100Hz tone with phase reversal is detected.
Mib	Vgs
Values	disabled g165Mode
Default	g165Mode

ATTRIBUTE Nsta Vgs TProf echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read and write

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Description	The attribute specifies whether comfort noise generation for the echo cancellation feature is enabled or disabled. The possible values are: ***disabled*** - Comfort noise generation is disabled. ***enabled*** - Comfort noise generation is enabled. This attribute has no effect if the echo canceller is disabled.
Mib	Vgs
Values	disabled enabled
Default	enabled

ATTRIBUTE Nsta Vgs TProf echoCancelTailLength (eCanTailLength)

Access	Read and write
Description	This attribute specifies the echo cancellation tail length. This attribute has no effect if the echo canceller is disabled. For the following features, the default for this attribute is ***64***: ***gsmBicnMg***, ***umtsBicnMg***, ***cdmaCodec***. For all other features, the default for this attribute is ***128***.
Mib	Vgs
Values	64 128
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs TProf echoCancelTailOffset (eCanTailOffset)

Access	Read and write
Description	This attribute specifies the fixed delay offset for the echo cancellation tail length applied to all timeslots. This attribute has no effect if the echo canceller is disabled. This attribute is only applicable for the following features: ***gsmBicnMg***,

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umtsBicnMg,
cdmaCodec.

Mib	Vgs
Values	Decimal (0..16)
Units	msec
Default	0

ATTRIBUTE Nsta Vgs TProf toneset (toneset)

Access	Read and write
Description	This attribute specifies the tone set available to the controller. The possible values are: ***sameAsVgs*** - Use the *defaultToneset* attribute from the *Vgs* component ***argentina*** - Use the tone set for Argentina. ***australia -*** Use the tone set for Australia. ***austria*** - Use the tone set for Austria. ***belgium*** - Use the tone set for Belgium. ***bolivia*** - Use the tone set for Bolivia. ***brazil -*** Use the tone set for Brazil. ***brazilCustom1 -*** Use the tone set for BrazilCustom1. ***canadaUsa*** - Use the tone set for Canada and the USA. ***chile*** - Use the tone set for Chile. ***china*** - Use the tone set for China. ***custom1*** - Use the tone set patched for Custom1. ***custom2*** - Use the tone set patched for Custom2. ***custom3*** - Use the tone set patched for Custom3. ***custom4*** - Use the tone set patched for Custom4. ***custom5*** - Use the tone set patched for Custom5. ***czech*** - Use the tone set for the Czech Republic. ***denmark*** - Use the tone set for Denmark. ***finland*** - Use the tone set for Finland. ***france -*** Use the tone set for France. ***germany*** - Use the tone set for Germany. ***greece*** - Use the tone set for Greece. ***hongKong*** - Use the tone set for Hong Kong. ***hungary*** - Use the tone set for Hungary. ***india*** - Use the tone set for India. ***ireland*** - Use the tone set for Ireland. ***israel*** - Use the tone set for Israel. ***italy -*** Use the tone set for Italy. ***japan*** - Use the tone set for Japan. ***jfpt*** - Use the tone set for Japanese Fire and Police trunks. ***korea*** - Use the tone set for Korea. ***malaysia*** - Use the tone set for Malaysia. ***mexico*** - Use the tone set for Mexico. ***mexicoCustom1*** - Use the tone set for MexicoCustom1.

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netherlands - Use the tone set for The Netherlands.
newZealand - Use the tone set for New Zealand.
norway - Use the tone set for Norway.
pakistan - Use the tone set for Pakistan.
panama - Use the tone set for Panama.
philippines - Use the tone set for Philippines.
poland - Use the tone set for Poland.
portugal - Use the tone set for Portugal.
romania - Use the tone set for Romania.
russia - Use the tone set for Russia.
singapore - Use the tone set for Singapore.
southafrica - Use the tone set for South Africa.
spain - Use the tone set for Spain.
sweden - Use the tone set for Sweden.
switzerland - Use the tone set for Switzerland.
taiwan- Use the tone set for Taiwan.
thailand - Use the tone set for Thailand.
turkey - Use the tone set for Turkey.
uk - Use the tone set for the UK.
venezuela - Use the tone set for Venezuela.

This attribute is only applicable for the following features:

vgsAtm,
vgslp.

Mib — Vgs

Values

sameAsVgs
canadaUsa
spain
uk
france
portugal
belgium
germany
netherlands
sweden
austria
italy
switzerland
australia
brazil
ireland
mexico
israel
romania
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hungary
russia
jfpt
custom1
custom2
custom3
custom4
custom5
pakistan
mexicoCustom1
brazilCustom1
norway
finland
denmark
bolivia
southafrica

Default sameAsVgs

ATTRIBUTE Nsta Vgs TProf **minimumDtmfPowerLevel (minDtmf)**

Access Read and write

Description This attribute specifies the value of the minimum power level at which DTMF digits must be detected. This value is used to allow for different specification for different administrations. This attribute is ignored if the *DigitCollection* component is not present under the parent *Vgs*.

Mib Vgs

Values Signed (-30; -27; -24)

Units dBm0

Default -27

ATTRIBUTE Nsta Vgs TProf **voiceBitInversion (vbi)**

Access Read and write

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Description	This attribute specifies the bit inversion scheme to be applied to G.711 samples on the TDM side of a Media Gateway. The possible values are: ***noBitInversion*** - No bit inversion is applied. ***oddBitInversion*** - Bit inversion is applied to odd bits. ***evenBitInversion*** - Bit Inversion is applied to even bits. ***allBitInversion*** - Bit inversion is applied to all the bits. ***autoConfigure -*** The bit inversion scheme depends on the value of the *tdmLogLaw* attribute. When the *tdmLogLaw attribute* is set to ***muLaw***, the value of this attribute will be set to ***allBitInversion***. When the *tdmLogLaw attribute* is set to ***aLaw***, the value of this attribute will be set to ***evenBitInversion***. This attribute is only applicable for the following features: ***gsmBicnMg***, ***umtsBicnMg***, ***cdmaCodec***. For applicable features, the default for this attribute is ***autoConfigure***, otherwise the default for this attribute is ***noBitInversion***.
Mib	Vgs
Values	noBitInversion oddBitInversion evenBitInversion allBitInversion autoConfigure
Default	No default

ATTRIBUTE Nsta Vgs TProf dataBitInversion (dbi)

Access	Read and write
Description	This attribute specifies the bit inversion scheme to be applied to data on the TDM side of a Media Gateway for Wireless CSD applications. The possible values are: ***noBitInversion*** - No bit inversion is applied. ***oddBitInversion*** - Bit inversion is applied to odd bits. ***evenBitInversion*** - Bit Inversion is applied to even bits. ***allBitInversion*** - Bit inversion is applied to all the bits. This attribute is only applicable for the following features: ***gsmBicnMg***, ***umtsBicnMg***, ***cdmaCodec***.

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Mib	Vgs
Values	noBitInversion oddBitInversion evenBitInversion allBitInversion
Default	noBitInversion

ATTRIBUTE Nsta Vgs TProf continuityTestType (cotType)

Access	Read and write
Description	This attribute specifies the type of continuity test. The possible values are: ***4Wire*** - Use 4 Wire continuity test ***2WireAnnex B2*** - Use 2 Wire COT as specified in document ANSI T1.113.4 B2 ***2WireAnnex B3 TLRH*** - Use 2 Wire COT as specified in document ANSI T1.113.4 B3, PVG acting as a 4-wire exchange. ***2WireAnnex B3 THRL*** - Use 2 Wire COT as specified in document ANSI T1.113.4 B3, PVG acting as a 2-wire exchange.
Mib	Vgs
Values	4Wire 2WireAnnexB2 2WireAnnexB3TLRH 2WireAnnexB3THRL
Default	4Wire

ATTRIBUTE Nsta Vgs TProf applicationList (appList)

Access	Read only
Description	This attribute contains a list of *Tag* components linked to this profile.
Mib	Vgs
List of	Link (Service, profile)
Default	No default

COMPONENT Nsta Vgs Q921

Instance	Decimal (0..83)
Groups	GROUP Nsta Vgs Q921 Provisioned (Prov) GROUP Nsta Vgs Q921 OsiState (State) GROUP Nsta Vgs Q921 Operational (Oper)
Scope	Device

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Description	*Nsta/n Vgs Q921/n* This component represents the association between a TDM timeslot used for Q.921 transport in a TDM primary rate stream and a processing profile.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Q921 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Q921* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Q921 interfaceName (ifName)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to a *Chan* component, which in turn specifies the timeslot for the Q.921 transport.
Mib	Vgs
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs Q921 profile (prof)

Access	Read and write
Description	This attribute specifies a link to the *Q921Profile* component, which in turn specifies the processing required on the Q.921 transport.
Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

GROUP Nsta Vgs Q921 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For

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component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Vgs

ATTRIBUTE Nsta Vgs Q921 adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Vgs

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta Vgs Q921 operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib Vgs

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Nsta Vgs Q921 usageState (osiUsage)

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Q921 **Operational (Oper)**

Properties	Operational
Description	This group contains attributes that indicate the *Q921* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs Q921 **txFrames**

Access	Read only
Description	This attribute counts Q.921 frames transmitted towards the TDM interface since the component was activated. The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, and unnumbered information frames. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Q921 **rxFrames**

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface since the component was activated. This includes HDLC errored frames.

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The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, and unnumbered information frames.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Q921 **erroredFrames**

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface with errors since the component was activated. The following errors are counted: invalid frames received (FCS, overrun, or non-integral number of octets), SABM errors, DM frames Tx in response to a Rx SABME, frames with an information field that is not permitted or a supervisory unnumbered frame with an incorrect length, frames received with an invalid receive sequence, and frames received with I-field larger than *n201*. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Q921 **retriesCounter**

Access	Read only
Description	This attribute counts the number of retransmission attempts since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Q921 **status**

Access	Read only
Description	This attribute indicates the status of the *Q921* component.

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The possible values are:

enabled - no failure.

vgsNotReady - the Voice Gateway is unavailable. This is currently indicated by the *operationalState* of the *Vsp* component being ***disabled***.

chanNotReady - the TDM *Chan* component is locked, or the *Chan proceduralStatus* is ***initializationRequired***.

chanDegraded - the TDM *Chan* or parent component has an outstanding alarm.

layer2Down - the Q.921 Layer 2 is down.

Mib: Vgs

Values:
vgsNotReady
chanNotReady
enabled
chanDegraded
layer2Down

Default: No default

COMPONENT Nsta Vgs Q921Profile (Q921Prof)

Instance: Decimal (0..15)

Groups:
GROUP Nsta Vgs Q921Prof ProvisionedApps (ProvApp)
GROUP Nsta Vgs Q921Prof Provisioned (Prov)

Scope: Device

Description: *Nsta/n Vgs Q921Profile/n*

This component represents the profile defining TDM Q.921 transport behavior that can be referenced by *Q921* components.

Mib: Vgs

Common Verbs:
Help
List
Display
Add
DELete

GROUP Nsta Vgs Q921Prof ProvisionedApps (ProvApp)

Properties: Provisioned

Description: This group contains a list of client *Q921* components.

Mib: Vgs

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ATTRIBUTE Nsta Vgs Q921Prof **applicationList (appList)**

Access	Read only
Description	This attribute contains a list of *Q921* components linked to this profile.
Mib	Vgs
List of	Link (Service, profile)
Default	No default

GROUP Nsta Vgs Q921Prof **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioning data for the *Q921* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Q921Prof **t200**

Access	Read and write
Description	This attribute specifies the maximum time between the transmission of a layer 2 frame and the receipt of an acknowledgement from the user. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second.
Mib	Vgs
Values	Decimal (0.5..5.0)
Units	seconds
Default	1.0

ATTRIBUTE Nsta Vgs Q921Prof **t203**

Access	Read and write
Description	This attribute specifies the maximum time without frame exchange during multiple frame operations.
Mib	Vgs
Values	Decimal (10..300)
Units	seconds
Default	10

ATTRIBUTE Nsta Vgs Q921Prof **n200**

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of a layer 2 frame.
Mib	Vgs

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Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs Q921Prof n201

Access	Read and write
Description	This attribute specifies the maximum length of an information field.
Mib	Vgs
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs Q921Prof outstandingFrames

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)
Default	7

ATTRIBUTE Nsta Vgs Q921Prof side

Access	Read and write
Criticality	Process
Description	This attribute specifies if this end of the PRI trunk is to be considered the network end or the user end. The possible values are: ***user***, ***network***.
Mib	Vgs
Values	user network
Default	network

COMPONENT Nsta Vgs TimeslotRelay (Tr)

Instance	Decimal (0..2015)
Groups	GROUP Nsta Vgs Tr Provisioned (Prov) GROUP Nsta Vgs Tr Operational (Oper)
Scope	Device

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Description	*Nsta/n Vgs/n TimeslotRelay/n* This component represents an association between two *Chan* components. It provides the capability of routing the data in timeslots defined in one *Chan* component to the timeslots defined in the other. Both *Chan* components must exist on the same Function Processor, and must define an equal number of timeslots.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Tr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Tr* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tr interfaceName (ifName)

Access	Read and write
Criticality	Process
Description	This attribute specifies a list of links to associated *Chan* components. These *Chan* components must exist on the same Functional Processor as the *Tr* component. Two *Chan* components must be specified.
Mib	Vgs
List of	Link (Service, applicationFramerName)
List Size	2
Default	No default

GROUP Nsta Vgs Tr Operational (Oper)

Properties	Operational
Description	This group contains the operational attribute of the *Tr* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tr status

Access	Read only
Description	This attribute indicates the status of a *Tr* component.

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The possible values are:

enabled - relaying of timeslot data is being performed, and no faults currently exist on either of the TDM component heirarchies specified in the *interfaceName* attribute.

degraded - relaying of timeslot data is being performed, but at least one alarm is currently set within a TDM component heirarchy specified in the *interfaceName* attribute.

disabled - relaying of timeslot data is not being performed. At least one TDM component specified in the *interfaceName* attribute is either locked or initialising.

Mib: Vgs

Values:
enabled
degraded
disabled

Default: No default

COMPONENT Nsta Vgs ChannelAssocSignalingDefinition (CasDefn)

Instance: Decimal (0..24)

Groups:
GROUP Nsta Vgs CasDefn Provisioned (Prov)
GROUP Nsta Vgs CasDefn OsiState (State)
GROUP Nsta Vgs CasDefn Operational (Oper)

Scope: Device

Description: *Nsta/n Vgs ChannelAssocSignalingDefinition/n*

This component represents a Channel Associated Signaling profile used on the Media Gateway.

Mib: Vgs

Common Verbs:
Help
List
Display
Add
DELete

GROUP Nsta Vgs CasDefn Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning data for the *CasDefn* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs CasDefn fileName

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Access	Read and write
Criticality	Process
Description	This attribute specifies the name (without path or extension) of the file that contains the specific CAS variant. The file will be delivered with the software load. Changing the value of this attribute triggers the transfer of the file from the CP to the VSP FP, and clears down any existing CAS trunks associated with this *CasDefn* component. This attribute must be supplied.
Mib	Vgs
Values	String (0..16, ASCII)
Default	""

ATTRIBUTE Nsta Vgs CasDefn primaryRateType

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of standard framing used at the TDM interface. All *CasDefn* components, under the same *Vgs* hierarchy, must have the same value provisioned for this attribute. The possible values are: ***ds1*** - TDM interfaces associated with this *CasDefn* component are compliant to the DS1 standard. CAS signaling transport using DS1 Robbed-Bit Signaling is used. ***e1*** - TDM interfaces associated with this *CasDefn* component are compliant to the E1 standard. CAS signaling transport using timeslot 16 is used.
Mib	Vgs
Values	ds1 e1
Default	ds1

ATTRIBUTE Nsta Vgs CasDefn applicationList (appList)

Access	Read only
Description	This attribute lists all of the *Cas* components associated with this *CasDefn* component.

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Mib	Vgs
List of	Link (Service, channelAssocSignalingDefinition)
Default	No default

GROUP Nsta Vgs CasDefn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs CasDefn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs CasDefn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs CasDefn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs CasDefn Operational (Oper)

Properties	Operational
Description	This group contains attributes that indicate the status of the *CasDefn* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs CasDefn fileTransferStatus

Access	Read only
Description	This attribute indicates the status of the transfer of the CAS profile file from the CP to the VSP FP. The possible values are: ***inProgress***: The file as specified in *fileName* attribute is being transferred. CAS signaling requests against trunks associated to this *CasDefn* component are not accepted.

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complete: The file transfer is complete. CAS signaling requests against trunks associated to this *CasDefn* component are accepted.

missing: The system can not find the file, specified in the *fileName* attribute, on the CP. An alarm is raised in this state. The VSP FP polls for the file until the transfer can commence.

fileTooLong: The file set in the *fileName* attribute is too long to be loaded successfully. An alarm is raised in this state. The VSP FP polls to look for changes in file length or timestamp.

fileError: The file set in the *fileName* attribute has failed sanity checks after the transfer, and can not be used. An alarm is raised in this state. The VSP FP polls to look for changes in file length or timestamp.

cpNotResponding: The CP is not responding. The CP may be busy or the disk may be locked. The VSP FP polls to check for the CP availability.

Mib	Vgs
Values	inProgress complete missing fileTooLong fileError cpNotResponding
Default	missing

COMPONENT Nsta Vgs Mtp2Profile

Instance	Decimal (1..10)
Groups	GROUP Nsta Vgs Mtp2Profile Mtp2ProfileProv
Scope	Device
Description	Nsta/n Vgs Mtp2Profile/n This component represents the configurable parameters for the Message Transfer Part Layer 2 (MTP2) transport.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Mtp2Profile Mtp2ProfileProv

Properties	Provisioned

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Description	This group contains the provisionable attributes for the *Mtp2Profile* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Mtp2Profile **protocolVariant (pV)**

Access	Read: All Write: All
Description	This attribute specifies the variant of the Message Transfer Part Layer 2 (MTP2) protocol that applies to the component. The values of the protocol timer attributes must be provisioned within the range applicable to the protocol variant specified by this attribute. The various values for this attribute are: ***itu*** - The component represents the ITU variant of the protocol (ITU-T Q.703). ***ansi*** - The component represents the ANSI variant of the protocol (ANSI T1.111.3).
Mib	Vgs
Values	itu ansi
Default	itu

ATTRIBUTE Nsta Vgs Mtp2Profile **alignmentReadyTimer (t1)**

Access	Read: All Write: All
Description	This attribute specifies the value of the “Alignment Ready” timer defined in ITU-T recommendation Q.703. This timer is started when the link reaches the “Alignment Ready” state. This timer stops upon entering the “In Service” state. Reception of a Fill-In Signal Unit (FISU) or a Message Signal Unit (MISU) while in the “Alignment Ready” state causes the state transition to the “In Service” state. A timer expiry causes the state to transition to the “Idle” state. The number of expiries of this timer is counted by the attribute *alignmentReadyTimeouts* (defined in the *Nsta/n Vgs Mtp2/n* component). The value of this timer must be between ***40*** and ***50*** seconds for the ITU variant of the protocol and between ***12*** and ***16*** seconds for the ANSI variant.
Mib	Vgs

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Values	Decimal (12..50)
Units	seconds
Default	45

ATTRIBUTE Nsta Vgs Mtp2Profile notAlignedTimer (t2)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Not Aligned” timer defined in ITU-T recommendation Q.703. It is used during initial alignment. This timer is started when the link enters the “Not Aligned” state which begins sending status indication “O”. If the timer expires before receiving a status indication “O”, “N” or “E”, alignment is stopped and the “Idle” state is entered. Otherwise the link proceeds to the “Aligned” state. The number of expiries of this timer is counted by the attribute *notAlignedTimeouts* (defined in the *Nsta/n Vgs Mtp2/n* component). The value of this timer must be between ***5*** and ***150*** seconds for the ITU variant of the protocol and between ***5*** and ***30*** seconds for the ANSI variant.
Mib	Vgs
Values	Decimal (5..150)
Units	seconds
Default	60

ATTRIBUTE Nsta Vgs Mtp2Profile alignedTimer (t3)

Access	Read: All Write: Illegal
Description	This attribute specifies the value of the “Aligned” timer defined in ITU-T recommendation Q.703. It is used during initial alignment. This timer is started when the link enters the “Aligned” state which begins sending status indication “N” or “E”, depending on whether the link is in normal or emergency alignment mode respectively. If the timer expires before a status indication “N” or “E” is received, alignment is stopped and the “Idle” state is entered. Otherwise the link proceeds to the “Proving” state. The number of expiries of this timer is counted by the attribute *alignedTimeouts* (defined in the *Nsta/n Vgs Mtp2/n* component). The value of this timer must be between ***1000*** and ***2000*** milliseconds for

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	the ITU variant of the protocol and between ***5000*** and ***14000*** milliseconds for the ANSI variant.
Mib	Vgs
Values	Decimal (1000..14000)
Units	msec
Default	1500

ATTRIBUTE Nsta Vgs Mtp2Profile normalProvingTimer (t4n)

Access	Read: All Write: Illegal
Description	This attribute specifies the value of the “Proving Period” timer for normal alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In normal alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state. Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times. A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service. The value of this timer must be between ***7500*** and ***9500*** milliseconds for the ITU variant of the protocol and between ***2000*** and ***2550*** milliseconds for the ANSI variant.
Mib	Vgs
Values	Decimal (2000..9500)
Units	msec
Default	8500

ATTRIBUTE Nsta Vgs Mtp2Profile emergencyProvingTimer (t4e)

Access	Read: All Write: Illegal
Description	This attribute specifies the value of the “Proving Period” timer for emergency alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In emergency alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state.

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Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times.

A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.

The value of this timer must be between ***400*** and ***600*** milliseconds for the ITU variant of the protocol and between ***500*** and ***700*** milliseconds for the ANSI variant.

Mib	Vgs
Values	Decimal (400..700)
Units	msec
Default	500

ATTRIBUTE Nsta Vgs Mtp2Profile sendingSibTimer (t5)

Access	Read: All Write: Illegal
Description	This attribute specifies the value of the “Sending SIB” timer defined in ITU-T recommendation Q.703. It is used for congestion control. The value of this timer determines the interval at which the receiving end of a signalling link, which detects a congestion situation returns a status indication “B” to the remote transmitting end of the link. This causes the remote end of the link to stop sending messages until the congestion condition goes away. The number of times a status indication “B”, that is, a congestion indication is sent is counted by the attribute *congestionIndicationsSent* (defined in the *Nsta/n Vgs Mtp2/n* component). The number of times a congestion situation is detected is counted by the attribute *congestionDetects* (defined in the *Nsta/n Vgs Mtp2/n* component). This attribute has the same value ranges for both ANSI and ITU variants of the protocol.
Mib	Vgs
Values	Decimal (80..120)
Units	msec
Default	100

ATTRIBUTE Nsta Vgs Mtp2Profile remoteCongestionTimer (t6)

Access	Read: All Write: All

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Description	This attribute specifies the value of the “Remote Congestion” timer defined in ITU-T recommendation Q.703. This timer begins when a status indication “B” is received, indicating congestion at the remote end. This timer is stopped when the congestion abates at the signalling point, as indicated by a message in the retransmit buffer being acknowledged. Upon timer expiration, a link failure indication is generated. The number of times a status indication “B” is received, indicating congestion at the remote end, is counted by the attribute *congestionIndicationsReceived* (defined in the *Nsta/n Vgs Mtp2/n* component). The value of this timer must be between ***3000*** and ***6000*** milliseconds for the ITU variant of the protocol and between ***1000*** and ***6000*** milliseconds for the ANSI variant.
Mib	Vgs
Values	Decimal (1000..6000)
Units	msec
Default	4500

ATTRIBUTE Nsta Vgs Mtp2Profile ackTimer (t7)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Excessive delay of acknowledgment” timer defined in ITU-T recommendation Q.703. It is used during normal sending and receiving of Message Signal Units (MSU). This timer starts when the first MSU is placed in the retransmit buffer and is pending acknowledgment. This timer is stopped after the last MSU in the retransmit buffer is acknowledged. This timer is restarted after each acknowledgment when the retransmit buffer is non-empty. It is also restarted each time a link status indication unit “B” is received. If the timer expires, a link failure indication is generated. The number of expiries of this timer is counted by the attribute *ackTimeouts* (defined in the *Nsta/n Vgs Mtp2/n* component).

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This attribute has the same value ranges for both ANSI and ITU variants of the protocol.

Mib	Vgs
Values	Decimal (500..2000)
Units	msec
Default	1250

ATTRIBUTE Nsta Vgs Mtp2Profile applicationList (appList)

Access	Read: All Write: Illegal
Description	This attribute specifies a list of *Nsta/n Vgs Mtp2/n* components linked to this profile.
Mib	Vgs
List of	Link (Service, profile)
Default	No default

COMPONENT Nsta Vgs Mtp2

Instance	Decimal (0..62)
Groups	GROUP Nsta Vgs Mtp2 Mtp2Prov GROUP Nsta Vgs Mtp2 OsiState (State) GROUP Nsta Vgs Mtp2 Mtp2Oper

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway Mtp2

Scope	Device
Description	*Nsta/n Vgs Mtp2/n* This component represents the Message Transfer Part Layer 2 (MTP2) transport layer between the Media Gateway and either the Public Switched Telephone Network (PSTN) or the 2G Radio Access Network (RAN).
Mib	Vgs
Dyn. Subcomp.	COMPONENT Nsta Vgs Mtp2 MonitoredCommunicationProtocol (MCP)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Mtp2 Mtp2Prov

Properties	Provisioned

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Description	This group contains the provisionable attributes for the *Mtp2* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Mtp2 interfaceName (ifName)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the link to the *DS1Chan* or *E1Chan* component that in turn specifies the timeslot for the Message Transfer Part Layer 2 (MTP2) transport. The *DS1Chan* or *E1Chan* component must reside on the same card as this component. The *DS1Chan* or *E1Chan* component used by the *Mtp2* component must contain only one timeslot in their *timeslots* attribute. Changing this attribute will cause the *Mtp2* link to be restarted.
Mib	Vgs
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 linkToLayer3 (lToL3)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to the Message Transfer Part Layer 2 (MTP2) user. It must specify an *Nsta/n Vgs M2ua As/n Iid/n* component. The *Iid/n* component must reside on the same card as this component. Changing this attribute will cause the *Mtp2* link to be restarted.
Mib	Vgs
Values	Link (Service, linkToLayer2)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 profile

Access	Read: All Write: All
Description	This attribute specifies a link to the *Nsta/n Vgs Mtp2Profile/n* component, which in turn specifies the configurable parameters for this Message Transfer Part Layer 2 (MTP2) transport.

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Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

GROUP Nsta Vgs Mtp2 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Mtp2 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Mtp2 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs Mtp2 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values: idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs Mtp2 Mtp2Oper

Properties: Operational

Description: This group contains the operational attributes for the *Mtp2* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Mtp2 alignmentReadyTimeouts (t1Touts)

Access: Read: All
Write: Illegal

Description: This attribute counts the number of timeouts of the “Alignment Ready” timer (T1) represented by the attribute *alignmentReadyTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component).

The counter wraps to zero when it exceeds its maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Vgs Mtp2 notAlignedTimeouts (t2Touts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of timeouts of the “Not Aligned” timer (T2) represented by the attribute *notAlignedTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 alignedTimeouts (t3Touts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of timeouts of the “Aligned” timer (T3) represented by the attribute *alignedTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 congestionDetects (congDet)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times congestion was detected by the *MonitoredCommunicationsProtocol* dynamic subcomponent at the local end of the signalling link. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 congestionIndicationsSent (congIndTx)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of congestion indications transmitted to the remote end of the signalling link. The congestion is detected locally by the *MonitoredCommunicationsProtocol* dynamic subcomponent and is transmitted to the remote end if it does not abate within the time interval specified by the *sendingSibTimer* (T5) attribute of the linked *Nsta/n Vgs Mtp2Profile/n* component. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 congestionIndicationsReceived (congIndRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications received from the remote end of the signalling link. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 ackTimeouts (t7Touts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of timeouts of the T7 Timer represented by the attribute *ackTimer (*defined in the *Nsta/n Vgs Mtp2Profile/*n component). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 inServiceFailures (insvFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of failures the *Mtp2* link has experienced while it was “In Service”. It does not include failures which occur during the alignment process.

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The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Mtp2 msuSent

Access Read: All
Write: Illegal

Description This attribute counts the number of Message Signal Units (MSU) transmitted. This includes the number of MSUs retransmitted, indicated by the attribute *msuRetransmits*.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Mtp2 msuRetransmits (msuReTx)

Access Read: All
Write: Illegal

Description This attribute counts the number of Message Signal Units (MSU) retransmitted because of negative acknowledgments.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs Mtp2 msuReceived (msuRx)

Access Read: All
Write: Illegal

Description This attribute counts the number of Message Signal Units (MSU) received. This includes the MSUs with errors, indicated by the attribute *msuErrors.*

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

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ATTRIBUTE Nsta Vgs Mtp2 msuErrors (msuErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of ingress signal units discarded because of sequence number, length or Cyclic Redundancy Check (CRC) errors. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 msuOctetsSent (octetTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets transmitted within the Message Signal Units (MSU). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 msuOctetsReceived (octetRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets received within the Message Signal Units (MSU). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway Mtp2

Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway Mtp2 component.

ATTRIBUTE Nsta Vgs Mtp2 alignmentReadyTimeouts

Description	This attribute counts the number of timeouts of the “Alignment Ready” timer (T1) represented by the attribute *alignmentReadyTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component).

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 notAlignedTimeouts

Description This attribute counts the number of timeouts of the “Not Aligned” timer (T2) represented by the attribute *notAlignedTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 alignedTimeouts

Description This attribute counts the number of timeouts of the “Aligned” timer (T3) represented by the attribute *alignedTimer* (defined in the *Nsta/n Vgs Mtp2Profile* component).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 congestionDetects

Description This attribute counts the number of times congestion was detected by the *MonitoredCommunicationsProtocol* dynamic subcomponent at the local end of the signalling link.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 congestionIndicationsSent

Description This attribute counts the number of congestion indications transmitted to the remote end of the signalling link. The congestion is detected locally by the *MonitoredCommunicationsProtocol* dynamic subcomponent and is transmitted to the remote end if it does not abate within the time interval specified by the *sendingSibTimer* (T5) attribute of the linked *Nsta/n Vgs Mtp2Profile/n* component.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 congestionIndicationsReceived

Description This attribute counts the number of congestion indications received from the remote end of the signalling link.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs Mtp2 ackTimeouts

Description — This attribute counts the number of timeouts of the T7 Timer represented by the attribute *ackTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component).

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 inServiceFailures

Description — This attribute counts the number of failures the *Mtp2* link has experienced while it was “In service”.

It does not include failures which occur during the alignment process.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuSent

Description — This attribute counts the number of Message Signal Units (MSU) transmitted. This includes the number of MSUs retransmitted, indicated by the attribute *msuRetransmits*.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuRetransmits

Description — This attribute counts the number of Message Signal Units (MSU) retransmitted because of negative acknowledgments.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuReceived

Description — This attribute counts the number of Message Signal Units (MSU) received. This includes the MSUs with errors, indicated by the attribute *msuErrors.*

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuErrors

Description — This attribute counts the number of ingress signal units discarded because of sequence number, length or Cyclic Redundancy Check (CRC) errors.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuOctetsSent

Description This attribute counts the number of layer 3 payload octets transmitted within the Message Signal Units (MSU).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuOctetsReceived

Description This attribute counts the number of layer 3 payload octets received within the Message Signal Units (MSU).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT Nsta Vgs Mtp2 MonitoredCommunicationProtocol (MCP)

Groups GROUP Nsta Vgs Mtp2 MCP OsiState (State)
GROUP Nsta Vgs Mtp2 MCP Operational (Oper)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway Mtp2 MonitoredCommunicationProtocol

Scope Application

Description ... *MonitoredCommunicationProtocol*

This component represents the functionality that monitors the status of communication between the parent component and the neighboring component with which the parent component is communicating. This component does the following:
- detects the loss of communication between the neighbors being monitored.
- counts messages lost between the monitored neighbors.
- ensures that the neighbor does not overflow with messages from this component.

Mib Vgs

Common Verbs Help
List
Display

GROUP Nsta Vgs Mtp2 MCP OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Vgs

ATTRIBUTE Nsta Vgs Mtp2 MCP **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Vgs

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta Vgs Mtp2 MCP **operationalState (osiOper)**

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib Vgs

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Nsta Vgs Mtp2 MCP **usageState (osiUsage)**

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Mtp2 MCP **Operational (Oper)**

Properties	Operational
Description	This group contains the operational data for the *MonitoredCommunicationProtocol* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Mtp2 MCP **communicationFailures (commFailures)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of communication failures between the neighbors being monitored. The communication failure is detected in two ways: - if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively. - if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented. The counter wraps to zero when it exceeds the maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP messageTxFailures (msgTxFailures)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP messageRxFailures (msgRxFailures)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the neighbor. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP enableRequestsTx (enableReqsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor. The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP enableRequestsRx (enableReqsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Request messages received by this component. The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP enableResponsesTx (enableRspsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Response messages sent by this component. The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor Enable Request message. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP enableResponsesRx (enableRspsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **heartbeatsTx (hbsTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat messages sent by this component to the neighbor. If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **heartbeatRx (hbsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat messages received by this component. The value of this attribute is incremented when the Heartbeat message is received. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **messagesTx (msgsTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages sent by this component to the neighbor. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs Mtp2 MCP **messagesRx (msgsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages received by this component. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **sequenceGapsTx (seqGapsTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Sequencing Gap messages sent by this component. When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **sequenceGapsRx (seqGapsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Sequencing Gap messages received by this component. When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **unknownMessagesRx (unknownMsgsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP). The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **messagesDiscarded (msgsDiscarded)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor. The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor. If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is incremented. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **heartbeatTimer (hbTimer)**

Access	Read: All Write: Illegal
Description	This attribute indicates the duration of the Heartbeat timer. The value of the Heartbeat timer is negotiated between the monitored parent components.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	msec

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Default	No default

ATTRIBUTE Nsta Vgs Mtp2 MCP **heartbeatRetries**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of expiries of the Heartbeat timer allowed before marking the communication with the neighbor as down. The value of the Heartbeat retries is negotiated between the monitored parent components.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway Mtp2 MonitoredCommunicationProtocol
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway Mtp2 MonitoredCommunicationProtocol component.

ATTRIBUTE Nsta Vgs Mtp2 MCP **communicationFailures (commFailures)**

Description	This attribute counts the number of communication failures between the neighbors being monitored. The communication failure is detected in two ways: - if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively. - if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **messageTxFailures (msgTxFailures)**

Description	This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **messageRxFailures (msgRxFailures)**

Description This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the neighbor.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **enableRequestsTx (enableReqsTx)**

Description This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor.

The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **enableRequestsRx (enableReqsRx)**

Description This attribute counts the number of Monitor Enable Request messages received by this component.

The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **enableResponsesTx (enableRspsTx)**

Description This attribute counts the number of Monitor Enable Response messages sent by this component.

The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **enableResponsesRx (enableRspsRx)**

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Description	This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **heartbeatsTx (hbsTx)**

Description	This attribute counts the number of Heartbeat messages sent by this component to the neighbor. If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **heartbeatRx (hbsRx)**

Description	This attribute counts the number of Heartbeat messages received by this component. The value of this attribute is incremented when the Heartbeat message is received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **messagesTx (msgsTx)**

Description	This attribute counts the number of payload messages sent by this component to the neighbor. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **messagesRx (msgsRx)**

Description	This attribute counts the number of payload messages received by this component. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **sequenceGapsTx (seqGapsTx)**

Description	This attribute counts the number of Sequencing Gap messages sent by this component.

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When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **sequenceGapsRx (seqGapsRx)**

Description: This attribute counts the number of Sequencing Gap messages received by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **unknownMessagesRx (unknownMsgsRx)**

Description: This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP).

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **messagesDiscarded (msgsDiscarded)**

Description: This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor.

The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor.

If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is incremented.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

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COMPONENT Nsta Vgs M2ua

Groups
GROUP Nsta Vgs M2ua M2uaProv
GROUP Nsta Vgs M2ua OsiState (State)
GROUP Nsta Vgs M2ua M2uaOper

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua

Scope: Device

Description: *Nsta/n Vgs M2ua*

This component represents the Message Transfer Part Layer 2 User Adaptation (M2UA) layer.

Mib: Vgs

Opt. Subcomp.: COMPONENT Nsta Vgs M2ua ApplicationServer (As)

Common Verbs:
Help
List
Display
Add
DELete

GROUP Nsta Vgs M2ua M2uaProv

Properties: Provisioned

Description: This group contains the provisioning data for the *M2ua* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs M2ua sctpPortConnection (sctpPort)

Access:
Read: All
Write: All

Criticality: Process

Description: This attribute specifies a link to the local Stream Control Transmission Protocol (SCTP) port used by the Message Transfer Part Layer 2 User Adaptation (M2UA) application.

Changing the value of this link will cause this process to restart.

Mib: Vgs

Values: Link (Hardware, linkToApplication)

Default: No default

ATTRIBUTE Nsta Vgs M2ua heartbeatInterval (hbIntvl)

Access:
Read: All
Write: All

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Description	This attribute specifies the frequency for sending Message Transfer Part Layer 2 User Adaptation (M2UA) heartbeat messages to peer nodes. The heartbeat timer, T(beat), has two purposes. It is used to determine how often to send out heartbeat messages. It is also used to determine how long to wait for heartbeat acknowledgement (2 *T(beat)) before considering the peer to be unavailable. A value of ***0*** disables sending of heartbeat messages.
Mib	Vgs
Values	Decimal (0..60)
Units	seconds
Default	0

GROUP Nsta Vgs M2ua **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Vgs

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs M2ua **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs M2ua **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

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ATTRIBUTE Nsta Vgs M2ua **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	Vgs
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Nsta Vgs M2ua proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Vgs
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Nsta Vgs M2ua controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Vgs
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Nsta Vgs M2ua alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Vgs
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Nsta Vgs M2ua **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Vgs
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Nsta Vgs M2ua unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Vgs
Values	false true
Default	false

GROUP Nsta Vgs M2ua M2uaOper

Properties	Operational
Description	This group contains the operational data for the *M2ua* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua connectionsRefused (connRef)

Access	Read: All Write: Illegal
Description	This attribute counts the number of connection requests refused by the Message Transfer Part Layer 2 User Adaptation (M2UA) layer. The most likely cause for the connection to be refused is that the requestor's IP address or port information is not configured under the *Nsta/n Vgs M2ua* hierarchy. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua

Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua component.

ATTRIBUTE Nsta Vgs M2ua connectionsRefused

Description	This attribute counts the number of connection requests refused by the Message Transfer Part Layer 2 User Adaptation (M2UA) layer. The most likely cause for the connection to be refused is that the requestor's IP address or port information is not configured under the *Nsta/n Vgs M2ua* hierarchy. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Nsta Vgs M2ua ApplicationServer (As)

Instance	Decimal (0..255)
Groups	GROUP Nsta Vgs M2ua As AsProv GROUP Nsta Vgs M2ua As OsiState (State) GROUP Nsta Vgs M2ua As AsOper
Scope	Device
Description	*Nsta/n Vgs M2ua ApplicationServer/n* *Nsta/n Vgs* Mg *V5ua* ApplicationServer*/n* This component represents the peer Application Server (AS) that establishes a Stream Control Transmission Protocol (SCTP) association with the User Adaptation application.
Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs M2ua As InterfaceIdentifier (Iid) COMPONENT Nsta Vgs M2ua As ApplicationServerProcess (Asp) COMPONENT Nsta Vgs M2ua As V5uaInterfaceIdentifier (V5ualid)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs M2ua As AsProv

Properties	Provisioned
Description	This group contains the provisionable data for the *ApplicationServer* component.
Mib	Vgs

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ATTRIBUTE Nsta Vgs M2ua As recoveryTimer (recoveryT)

Access	Read: All Write: All
Description	This attribute specifies the amount of time to buffer outgoing messages when the Application Server Process (ASP) becomes inaccessible. If this timer expires before the ASP returns to service, the messages are dropped and the Application Server (AS) transitions into the ***down*** state. A value of ***0*** indicates that buffering should not occur, and the AS should immediately transition into the ***down*** state when the ASP becomes inaccessible. Note that higher values for this attribute will require more memory to be reserved for message buffering.
Mib	Vgs
Values	Decimal (0..5)
Units	seconds
Default	2

GROUP Nsta Vgs M2ua As OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Vgs

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs M2ua As operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs M2ua As usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values:
idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs M2ua As AsOper

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Properties	Operational
Description	This group contains the operational data for the *ApplicationServer* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As state

Access	Read: All Write: Illegal
Description	This attribute indicates the peer Application Server (AS) state as determined by the local User Adaptation application. The state is defined in RFC 3331 and is one of the following: ***down*** - The AS is unavailable. This state implies that all related Application Server Processes (ASPs) are in the ASP-DOWN state for this AS. This is the initial AS state. ***active*** - The AS is available and application traffic is active. This state implies that at least one ASP is in the ASP-ACTIVE state. ***inactive*** - The AS is available but no application traffic is active (that is, one or more related ASPs are in the ASP-INACTIVE state, but none are in the ASP-ACTIVE state). ***pending*** - An active ASP has transitioned to ASP-INACTIVE or ASP-DOWN state and it was the last remaining active ASP.
Mib	Vgs
Values	inactive active pending down
Default	No default

ATTRIBUTE Nsta Vgs M2ua As interfacesActive (ifActive)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Interface Identifiers (IID) currently in an active state. This value is initially zero and increases up to a maximum of the number of *lid* components provisioned under this component.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs M2ua As InterfaceIdentifier (lid)

Instance	Decimal (0..4294967295)

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Groups	GROUP Nsta Vgs M2ua As Iid IidProv GROUP Nsta Vgs M2ua As Iid IidOper GROUP Nsta Vgs M2ua As Iid IidMaupOper
	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier
Scope	Device
Description	*Nsta/n Vgs M2ua As/n InterfaceIdentifier/n* This component represents the Interface Identifier (IID), the identifier of the physical Layer 2 SS7 link. The instance value is an integer used as the IID in MTP2 User Adaptation Layer (M2UA) communication with the Application Server (AS). The instance number must match the IID provisioned on the AS. Each IID can support only one SS7 link to a given interface.
Mib	Vgs
Dyn. Subcomp.	COMPONENT Nsta Vgs M2ua As Iid MonitoredCommunicationProtocol (MCP)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs M2ua As Iid IidProv

Properties	Provisioned
Description	This group contains the provisioning data for the *InterfaceIdentifier* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Iid linkToLayer2 (IToL2)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to the link layer entity that this Message Transfer Part Layer 2 User Adaptation (M2UA) application is backhauling over IP. This attribute specifies an *Nsta/n Vgs Mtp2/n* component. Changing this attribute will cause this component to be deleted and re-added.

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Mib	Vgs
Values	Link (Service, linkToLayer3)
Default	No default

GROUP Nsta Vgs M2ua As lid **lidOper**

Properties	Operational
Description	This group contains the operational data for the *InterfaceIdentifier* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As lid **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the local interface. The state may be one of the following: ***idle*** - Communication has not been established for this link. This is the initial state ***normalProving*** - The link is starting in normal proving mode ***emerProving*** - The link is starting in emergency proving mode ***active*** - The link has been started and is communicating normally ***lpo*** - Communication on this link has been disrupted due to a Local Processor Outage (LPO) condition ***rpo*** - Communication on this link has been disrupted due to a Remote Processor Outage (RPO) condition ***congested*** - The link has reported a congestion condition ***error*** - Communication has not been established on this link due to an error. This is the state used to indicate failure to establish communication with the remote Application Server Process (ASP).
Mib	Vgs
Values	idle normalProving emerProving active lpo rpo congested error
Default	No default

GROUP Nsta Vgs M2ua As lid **lidMaupOper**

Properties	Operational
Description	This group contains the operational data for the *InterfaceIdentifier* component pertaining to MTP2 User Adaptation (MAUP) messages.

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Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Iid dataMessagesReceived (dataRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid dataMessagesSent (dataTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid dataAcknowledgementsReceived (dataAcksRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Acknowledgement messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid dataAcknowledgementsSent (dataAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Acknowledgement messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As lid establishRequestsReceived (estReqsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Establish Request messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As lid establishRequestsSent (estReqsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Establish Request messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As lid establishConfirmsReceived (estConfsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Establish Confirm messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As lid establishConfirmsSent (estConfsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Establish Confirm messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid **releaseRequestsReceived (relReqsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Release Request messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid **releaseConfirmsSent (relConfsTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Release Confirm messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid **releaseIndicationsSent (relIndTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Release Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid **stateRequestsReceived (stateReqRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of State Request messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As lid stateConfirmsSent (stateConfsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of State Confirm messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As lid stateIndicationsSent (stateIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of State Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As lid dataRetrievalRequestsReceived (dataRtvlReqRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Retrieval Request messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As lid dataRetrievalConfirmsSent (dataRtvlConfTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Retrieval Confirm messages sent. The counter wraps to zero when it exceeds its maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid dataRetrievalIndicationsSent (dataRtvlIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Retrieval Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid dataRetrievalCmplIndicationsSent (dataRtvlCmplIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Retrieval Complete Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid congestionIndicationsSent (congIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Congestion Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier component.

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ATTRIBUTE Nsta Vgs M2ua As Iid **dataMessagesReceived**

Description — This attribute counts the number of Data messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataMessagesSent**

Description — This attribute counts the number of Data messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataAcknowledgementsReceived**

Description — This attribute counts the number of Data Acknowledgement messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataAcknowledgementsSent**

Description — This attribute counts the number of Data Acknowledgement messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **establishRequestsReceived**

Description — This attribute counts the number of Establish Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **establishRequestsSent**

Description — This attribute counts the number of Establish Request messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **establishConfirmsReceived**

Description — This attribute counts the number of Establish Confirm messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **establishConfirmsSent**

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Description This attribute counts the number of Establish Confirm messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **releaseRequestsReceived**

Description This attribute counts the number of Release Request messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **releaseConfirmsSent**

Description This attribute counts the number of Release Confirm messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **releaseIndicationsSent**

Description This attribute counts the number of Release Indication messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **stateRequestsReceived**

Description This attribute counts the number of State Request messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **stateConfirmsSent**

Description This attribute counts the number of State Confirm messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **stateIndicationsSent**

Description This attribute counts the number of State Indication messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataRetrievalRequestsReceived**

Description This attribute counts the number of Data Retrieval Request messages received.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid dataRetrievalConfirmsSent

Description This attribute counts the number of Data Retrieval Confirm messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid dataRetrievalIndicationsSent

Description This attribute counts the number of Data Retrieval Indication messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid dataRetrievalCmplIndicationsSent

Description This attribute counts the number of Data Retrieval Complete Indication messages.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid congestionIndicationsSent

Description This attribute counts the number of Congestion Indication messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT Nsta Vgs M2ua As Iid MonitoredCommunicationProtocol (MCP)

Groups GROUP Nsta Vgs M2ua As Iid MCP OsiState (State)
GROUP Nsta Vgs M2ua As Iid MCP Operational (Oper)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol

Scope Application

Description ... *MonitoredCommunicationProtocol*

This component represents the functionality that monitors the status of communication between the parent component and the neighboring component with which the parent component is communicating. This component does the following:
- detects the loss of communication between the neighbors being monitored.
- counts messages lost between the monitored neighbors.

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- ensures that the neighbor does not overflow with messages from this component.

Mib Vgs

Common Verbs
Help
List
Display

GROUP Nsta Vgs M2ua As Iid MCP OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Vgs

ATTRIBUTE Nsta Vgs M2ua As Iid MCP adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Vgs

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta Vgs M2ua As Iid MCP operationalState (osiOper)

Access Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs M2ua As Iid MCP usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs M2ua As Iid MCP Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *MonitoredCommunicationProtocol* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Iid MCP communicationFailures (commFailures)

Access	Read: All Write: Illegal
Description	This attribute counts the number of communication failures between the neighbors being monitored. The communication failure is detected in two ways:

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- if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively.
- if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented.

The counter wraps to zero when it exceeds the maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP messageTxFailures (msgTxFailures)

Access: Read: All
Write: Illegal

Description: This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor.

The counter wraps to zero when it exceeds the maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP messageRxFailures (msgRxFailures)

Access: Read: All
Write: Illegal

Description: This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the neighbor.

The counter wraps to zero when it exceeds the maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableRequestsTx (enableReqsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor. The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableRequestsRx (enableReqsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Request messages received by this component. The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableResponsesTx (enableRspsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Response messages sent by this component. The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor Enable Request message. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableResponsesRx (enableRspsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP heartbeatsTx (hbsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat messages sent by this component to the neighbor. If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP heartbeatRx (hbsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat messages received by this component. The value of this attribute is incremented when the Heartbeat message is received. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP messagesTx (msgsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages sent by this component to the neighbor. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP messagesRx (msgsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages received by this component. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP sequenceGapsTx (seqGapsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Sequencing Gap messages sent by this component. When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs M2ua As Iid MCP **sequenceGapsRx (seqGapsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Sequencing Gap messages received by this component. When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **unknownMessagesRx (unknownMsgsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP). The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **messagesDiscarded (msgsDiscarded)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor. The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor. If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is incremented. The counter wraps to zero when it exceeds the maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP heartbeatTimer (hbTimer)

Access	Read: All Write: Illegal
Description	This attribute indicates the duration of the Heartbeat timer. The value of the Heartbeat timer is negotiated between the monitored parent components.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Iid MCP heartbeatRetries

Access	Read: All Write: Illegal
Description	This attribute indicates the number of expiries of the Heartbeat timer allowed before marking the communication with the neighbor as down. The value of the Heartbeat retries is negotiated between the monitored parent components.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol component.

ATTRIBUTE Nsta Vgs M2ua As Iid MCP communicationFailures (commFailures)

Description	This attribute counts the number of communication failures between the neighbors being monitored. The communication failure is detected in two ways: - if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute

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is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively.
- if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP messageTxFailures (msgTxFailures)

Description — This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP messageRxFailures (msgRxFailures)

Description — This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the neighbor.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableRequestsTx (enableReqsTx)

Description — This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor.

The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableRequestsRx (enableReqsRx)

Description — This attribute counts the number of Monitor Enable Request messages received by this component.

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The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableResponsesTx (enableRspsTx)

Description This attribute counts the number of Monitor Enable Response messages sent by this component.

The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableResponsesRx (enableRspsRx)

Description This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP heartbeatsTx (hbsTx)

Description This attribute counts the number of Heartbeat messages sent by this component to the neighbor.

If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP heartbeatRx (hbsRx)

Description This attribute counts the number of Heartbeat messages received by this component.

The value of this attribute is incremented when the Heartbeat message is received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Iid MCP **messagesTx (msgsTx)**

Description — This attribute counts the number of payload messages sent by this component to the neighbor.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **messagesRx (msgsRx)**

Description — This attribute counts the number of payload messages received by this component.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **sequenceGapsTx (seqGapsTx)**

Description — This attribute counts the number of Sequencing Gap messages sent by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **sequenceGapsRx (seqGapsRx)**

Description — This attribute counts the number of Sequencing Gap messages received by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **unknownMessagesRx (unknownMsgsRx)**

Description — This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP).

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Iid MCP messagesDiscarded (msgsDiscarded)

Description

This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor.

The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor.

If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is incremented.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

COMPONENT Nsta Vgs M2ua As ApplicationServerProcess (Asp)

Instance

Decimal (0..2)

Groups

GROUP Nsta Vgs M2ua As Asp AspProv
GROUP Nsta Vgs M2ua As Asp OsiState (State)
GROUP Nsta Vgs M2ua As Asp AspSctpOper
GROUP Nsta Vgs M2ua As Asp AspSmTmOper
GROUP Nsta Vgs M2ua As Asp AspErrorsOper

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess

Scope

Device

Description

Nsta/n Vgs M2ua As/n ApplicationServerProcess/n
Nsta/n Vgs SgV5 As/n ApplicationServerProcess/n

This component represents the peer Application Server Process (ASP) that establishes a Stream Control Transmission Protocol (SCTP) association with this User Adaptation application.

Mib

Vgs

Subcomponents

COMPONENT Nsta Vgs M2ua As Asp SctpAssociation (SctpAssoc)

Common Verbs

Help
List
Display
Add
DELete

GROUP Nsta Vgs M2ua As Asp AspProv

Properties

Provisioned

Description

This group contains the provisionable data for the *ApplicationServerProcess* component.

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Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Asp ipAddress (ip)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Internet Protocol (IP) address of the remote Application Server Process (ASP). If the value of the *localRole* attribute is set to ***client***, this is the destination towards which a Stream Control Transmission Protocol (SCTP) association is established. If the value of the *localRole* attribute is ***server***, this is the address from which a connection is expected.
Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp port

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Stream Control Transmission Protocol (SCTP) port of the remote Application Server Process (ASP).
Mib	Vgs
Values	Decimal (1..65535)
Default	2904

ATTRIBUTE Nsta Vgs M2ua As Asp localRole (role)

Access	Read: All Write: All
Description	This attribute specifies whether this node should behave as a ***server***, receiving connections from the remote Application Server Process (ASP), or as a ***client***, initiating connections towards the remote ASP.
Mib	Vgs
Values	server client
Default	server

ATTRIBUTE Nsta Vgs M2ua As Asp sctpAckDelay (ackDelay)

Access	Read: All Write: All

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Description	This attribute specifies the delayed acknowledgement timer for the Stream Control Transmission Protocol (SCTP) association used by this Application Server Process (ASP). This controls the maximum interval between the sending of SCTP Selective Acknowledgement (SACK) chunks during idle communication periods.
Mib	Vgs
Values	Decimal (50..500)
Units	msec
Default	200

GROUP Nsta Vgs M2ua As Asp **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Asp **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Nsta Vgs M2ua As Asp **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs M2ua As Asp **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs M2ua As Asp **AspSctpOper**

Properties	Operational
Description	This group contains the operational data for the *ApplicationServerProcess* component pertaining to Stream Control Transmission Protocol (SCTP) messages.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpEstablishIndications (sctpEstInds)**

Access	Read: All Write: Illegal

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Description	This attribute counts the number of M-SCTP Establish Indications received for this Application Server Process (ASP). This counter is incremented only when the value of the *localRole* attribute is set to ***server***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp sctpEstablishRequests (sctpEstReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of M-SCTP Establish Requests sent for this Application Server Process (ASP). This attribute counts the number of the attempts to establish a Stream Control Transmission Protocol (SCTP) association with the remote ASP. This counter is incremented only when the value of the *localRole* attribute is set to ***client***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp sctpEstablishFailures (sctpEstFails)

Access	Read: All Write: Illegal
Description	This attribute counts the number of M-SCTP Establish Requests that failed to successfully establish a Stream Control Transmission Protocol (SCTP) association with the remote Application Server Process (ASP). This counter is incremented only when the value of the *localRole* attribute is set to ***client***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp sctpReleaseIndications (sctpRelInds)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of M-SCTP Release Indications received for this Application Server Process (ASP). This counter is incremented only when the value of the *localRole* attribute is set to ***server***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp sctpRestartIndications (sctpRestartInds)

Access	Read: All Write: Illegal
Description	This attribute counts the number of M-SCTP Restart Indications received for this Application Server Process (ASP). This counter is incremented only when the value of the *localRole* attribute is set to ***server***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs M2ua As Asp AspSmTmOper

Properties	Operational
Description	This group contains the operational data for the *ApplicationServerProcess* component that pertains to the Application Server Process (ASP) state machine and traffic management.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Asp aspUpMsgsReceived (aspUpRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Up (UP) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp aspDownMsgsReceived (aspDnRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Down (DOWN) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp aspUpAcksSent (aspUpAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Up Acknowledgement (UP ACK) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp aspDownAcksSent (aspDnAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Down Acknowledgement (DOWN ACK) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp aspActiveMsgsReceived (aspActRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Active (ACTIVE) messages received.

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	The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp aspInactiveMsgsReceived (aspInactRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Inactive (INACTIVE) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp aspActiveAcksSent (aspActAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Active Acknowledgement (ACTIVE ACK) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp aspInactiveAcksSent (aspInactAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Inactive Acknowledgement (INACTIVE ACK) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp heartbeatsSent (hbTx)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat (BEAT) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp heartbeatsReceived (hbRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat (BEAT) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp heartbeatAcksSent (hbAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp heartbeatAcksReceived (hbAcksRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs M2ua As Asp **notifyMsgsSent (notifyTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Notify (NTFY) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs M2ua As Asp **AspErrorsOper**

Properties	Operational
Description	This group contains the operational data for the *ApplicationServerProcess* component pertaining to errors during traffic management.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Asp **errorsSent (errTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Error (ERR) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp **errorsReceived (errRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Error (ERR) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp **invalidVersionErrorsSent (invVerErrTx)**

Access	Read: All Write: Illegal

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Description	This attribute counts the number of "Invalid Version" errors sent. This corresponds to error code 0x1 defined in RFC 3331. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp invalidVersionErrorsReceived (invVerErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Version" errors received. This corresponds to error code 0x1 defined in RFC 3331. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp invalidIidErrorsSent (invIidErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Interface Identifier" errors sent. This corresponds to error code 0x2 defined in RFC 3331. This error occurs when the Application Server Process (ASP) references an Interface Identifier (IID) that is not locally configured. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp invalidIidErrorsReceived (invIidErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Interface Identifier" errors received. This corresponds to error code 0x2 defined in RFC 3331. This error occurs when the remote Application Server Process (ASP) does not recognize the Interface Identifier (IID) that it has received. The counter wraps to zero when it exceeds its maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp unsupportedTypeErrorsSent (unsupErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of following errors sent that are defined in RFC 3331: - "Unsupported Message Class" (error code 0x3) - "Unsupported Message Type" (error code 0x4) - "Unsupported Traffic Handling Mode" (error code 0x5). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp unsupportedTypeErrorsReceived (unsupErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of following errors received that are defined in RFC 3331: - "Unsupported Message Class" (error code 0x3) - "Unsupported Message Type" (error code 0x4) - "Unsupported Traffic Handling Mode" (error code 0x5). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp protocolErrorsSent (protErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of protocol errors detected locally. This corresponds to the following errors defined in RFC 3331: - "Unexpected Message" (error code 0x6) - "Protocol Error" (error code 0x7) - "Invalid Parameter Value" (error code 0x11) - "Parameter Field Error" (error code 0x12) - "Unexpected Parameter" (error code 0x13)

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- "Missing Parameter" (error code 0x16).

The counter wraps to zero when it exceeds its maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp protocolErrorsReceived (protErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of protocol errors detected by the remote Application Server Process (ASP). This corresponds to the following errors defined in RFC 3331: - "Unexpected Message" (error code 0x6) - "Protocol Error" (error code 0x7) - "Invalid Parameter Value" (error code 0x11) - "Parameter Field Error" (error code 0x12) - "Unexpected Parameter" (error code 0x13) - "Missing Parameter" (error code 0x16). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp invalidStreamIdErrorsSent (invStrmIdErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Stream Identifier" errors sent. This corresponds to error code 0x9 defined in RFC 3331. This error is sent if a management message is received on a stream other than "0". The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp invalidStreamIdErrorsReceived (invStrmIdErrRx)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of "Invalid Stream Identifier" errors received This corresponds to error code 0x9 defined in RFC 3331. Receipt of this error indicates that the remote node received a message on an unexpected Stream Control Transmission Protocol (SCTP) stream. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp sendFailures (sndFails)

Access	Read: All Write: Illegal
Description	This attribute counts the times the User Adaptation application was unable to send a Stream Control Transmission Protocol (SCTP) message to the remote Application Server Process (ASP). The most likely cause of a send failure is congestion on the remote node. Messages that the SCTP layer is unable to send are discarded. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess component.

ATTRIBUTE Nsta Vgs M2ua As Asp aspUpMsgsReceived

Description	This attribute counts the number of Application Server Process (ASP) Up (UP) messages received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp aspDownMsgsReceived

Description	This attribute counts the number of Application Server Process (ASP) Down (DOWN) messages received. The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp aspUpAcksSent

Description This attribute counts the number of Application Server Process (ASP) Up Acknowledgement (UP ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp aspDownAcksSent

Description This attribute counts the number of Application Server Process (ASP) Down Acknowledgement (DOWN ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp aspActiveMsgsReceived

Description This attribute counts the number of Application Server Process (ASP) Active (ACTIVE) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp aspInactiveMsgsReceived

Description This attribute counts the number of Application Server Process (ASP) Inactive (INACTIVE) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp aspActiveAcksSent

Description This attribute counts the number of Application Server Process (ASP) Active Acknowledgement (ACTIVE ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp aspInactiveAcksSent

Description This attribute counts the number of Application Server Process (ASP) Inactive Acknowledgement (INACTIVE ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp heartbeatsSent

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Description This attribute counts the number of Heartbeat (BEAT) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp heartbeatsReceived

Description This attribute counts the number of Heartbeat (BEAT) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp heartbeatAcksSent

Description This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp heartbeatAcksReceived

Description This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp notifyMsgsSent

Description This attribute counts the number of Notify (NTFY) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp errorsSent

Description This attribute counts the number of Error (ERR) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp errorsReceived

Description This attribute counts the number of Error (ERR) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidVersionErrorsSent

Description This attribute counts the number of "Invalid Version" errors sent. This corresponds to error code 0x1 defined in RFC 3331.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidVersionErrorsReceived

Description This attribute counts the number of "Invalid Version" errors received. This corresponds to error code 0x1 defined in RFC 3331.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidIidErrorsSent

Description This attribute counts the number of "Invalid Interface Identifier" errors sent. This corresponds to error code 0x2 defined in RFC 3331.

This error occurs when the Application Server Process (ASP) references an Interface Identifier (IID) that is not locally configured.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidIidErrorsReceived

Description This attribute counts the number of "Invalid Interface Identifier" errors received. This corresponds to error code 0x2 defined in RFC 3331.

This error occurs when the remote Application Server Process (ASP) does not recognize the Interface Identifier (IID) that it has received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp unsupportedTypeErrorsSent

Description This attribute counts the number of following errors sent that are defined in RFC 3331:
- "Unsupported Message Class" (error code 0x3)
- "Unsupported Message Type" (error code 0x4)
- "Unsupported Traffic Handling Mode" (error code 0x5).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp unsupportedTypeErrorsReceived

Description This attribute counts the number of following errors received that are defined in RFC 3331:
- "Unsupported Message Class" (error code 0x3)
- "Unsupported Message Type" (error code 0x4)
- "Unsupported Traffic Handling Mode" (error code 0x5).

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp protocolErrorsSent

Description This attribute counts the number of protocol errors detected locally.

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp protocolErrorsReceived

Description This attribute counts the number of protocol errors detected by the remote Application Server Process (ASP).

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidStreamIdErrorsSent

Description This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to error code 0x9 defined in RFC 3331. This error is sent if a management message is received on a stream other than "0".

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidStreamIdErrorsReceived

Description This attribute counts the number of "Invalid Stream Identifier" errors received

This corresponds to error code 0x9 defined in RFC 3331. Receipt of this error indicates that the remote node received a message on an

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unexpected Stream Control Transmission Protocol (SCTP) stream.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sendFailures**

Description This attribute counts the times the User Adaptation application was unable to send a Stream Control Transmission Protocol (SCTP) message to the remote Application Server Process (ASP).

The most likely cause of a send failure is congestion on the remote node. Messages that the SCTP layer is unable to send are discarded.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpEstablishIndications**

Description This attribute counts the number of M-SCTP Establish Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpEstablishRequests**

Description This attribute counts the number of M-SCTP Establish Requests sent for this Application Server Process (ASP).

This attribute counts the number of the attempts to establish a Stream Control Transmission Protocol (SCTP) association with the remote ASP.

This counter is incremented only when the value of the *localRole* attribute is set to ***client***.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpEstablishFailures**

Description This attribute counts the number of M-SCTP Establish Requests that failed to successfully establish a Stream Control Transmission Protocol (SCTP) association with the remote Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***client***.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpReleaseIndications**

Description This attribute counts the number of M-SCTP Release Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpRestartIndications**

Description This attribute counts the number of M-SCTP Restart Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT Nsta Vgs M2ua As Asp **SctpAssociation (SctpAssoc)**

Groups GROUP Nsta Vgs M2ua As Asp SctpAssoc SctpAssocOper
GROUP Nsta Vgs M2ua As Asp SctpAssoc SctpAssocErrorsOper

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess SctpAssociation

Scope Device

Description *Nsta/n Vgs M2ua As/n Asp/n SctpAssociation*
Nsta/n Vgs SgV5 As/n Asp/n SctpAssociation

This component represents a Stream Control Transmission Protocol (SCTP) association between this User Adaptation application and the peer Application Server Process (ASP).

The component provides per-association statistics that are not cleared when the association is released, but maintained over time.

Mib Vgs

Common Verbs Help
List
Display

GROUP Nsta Vgs M2ua As Asp SctpAssoc **SctpAssocOper**

Properties Operational

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Description	This group contains the operational data for the *SctpAssoc* component pertaining to the Stream Control Transmission Protocol (SCTP) communication.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc packetsSent (pktsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IP packets sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc packetsReceived (pktsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IP packets received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc bytesSent (bytesTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of bytes sent. This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc bytesReceived (bytesRx)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of bytes received. This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **dataChunksSent (dataChTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Payload Data (DATA) chunks sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **dataChunksReceived (dataChRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Payload Data (DATA) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **sackChunksSent (sackChTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Selective Acknowledgement (SACK) chunks sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc sackChunksReceived (sackChRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Selective Acknowledgement (SACK) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc heartbeatChunksSent (hbChTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc heartbeatChunksReceived (hbChRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc heartbeatAckChunksSent (hbAckChTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks sent. The counter wraps to zero when it exceeds its maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc heartbeatAckChunksReceived (hbAckChRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc outboundStreams (outStrms)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of outbound streams for this Stream Control Transmission Protocol (SCTP) association.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc inboundStreams (inStrms)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of inbound streams for this Stream Control Transmission Protocol (SCTP) association.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc lastFailureReason (failRsn)

Access	Read: All Write: Illegal
Description	This attribute indicates the reason for the most recent Stream Control Transmission Protocol (SCTP) association failure. The reason may be one of the following:

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none - Connection has never failed
farEndAbort - Abort request received from the peer
farEndShutdown - Shutdown request received from the peer
communicationTimeout - Maximum number of retransmissions was exceeded
maxUnackedMsgsLimit - Number of unacknowledged messages reached the internal limit.

Mib — Vgs

Values — none
farEndAbort
farEndShutdown
communicationTimeout
maxUnackedMsgsLimit

Default — No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **lastFailureTime (failTime)**

Access — Read: All
Write: Illegal

Description — This attribute indicates the date and Universal Time Coordinated (UTC) time at which the last Stream Control Transmission Protocol (SCTP) association failure occurred. The timestamp corresponds with the value of the *lastFailureReason* attribute.

Mib — Vgs

Values — Time (DHMS)

Default — No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **srtt**

Access — Read: All
Write: Illegal

Description — This attribute indicates the Smoothed Round-Trip Time (SRTT) as defined in RFC 2960.

Mib — Vgs

Values — Decimal (0..4294967295)

Units — msec

Default — No default

GROUP Nsta Vgs M2ua As Asp SctpAssoc **SctpAssocErrorsOper**

Properties — Operational

Description — This group contains the operational data for the *SctpAssoc* component pertaining to errors and diagnostics in the Stream Control Transmission Protocol (SCTP) communication.

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Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc errorChunksSent (errorChTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Operation Error (ERROR) chunks sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc errorChunksReceived (errorChRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Operation Error (ERROR) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc invalidStreamIdErrorsSent (invStrmIdErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Stream Identifier" errors sent. This corresponds to cause code 1 defined in RFC 2960. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc invalidStreamIdErrorsReceived (invStrmIdErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Stream Identifier" errors received.

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This corresponds to cause code 1 defined in RFC 2960.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc protocolErrorsSent (protErrTx)

Access Read: All
Write: Illegal

Description This attribute counts the number of protocol errors sent.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc protocolErrorsReceived (protErrRx)

Access Read: All
Write: Illegal

Description This attribute counts the number of protocol errors received.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter wraps to zero when it exceeds its maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc outOfResourceErrorsSent (outRsrcErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Out of Resource" errors sent. This corresponds to error code 4 defined in RFC 2960. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc outOfResourceErrorsReceived (outRsrcErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Out of Resource" errors received. This corresponds to error code 4 defined in RFC 2960. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc invalidAssocRestartErrorsSent (invAssnRstErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Restart of an association with new addresses" errors sent. This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc invalidAssocRestartErrorsReceived (invAssnRstErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Restart of an association with new addresses" errors received. This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc userInitiatedAbortsSent (userAbortErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "User Initiated Abort" indications sent by the local Stream Control Transmission Protocol (SCTP) user. This corresponds to error code 12 defined in the SCTP Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc userInitiatedAbortsReceived (userAbortErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "User Initiated Abort" indications received from the peer Stream Control Transmission Protocol (SCTP) user. This corresponds to error code 12 defined in the SCTP Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **checksumErrors (csumErr)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of incoming packets that were discarded due to checksum verification failure. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **retransmittedChunks (reTxChunks)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Payload Data (DATA) chunks retransmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **gapAcknowledgementsSent (gapAcksTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of chunks reported to the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were locally received out of order. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **gapAcknowledgementsReceived (gapAcksRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of chunks reported by the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were received out of order by the far end.

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The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc duplicateChunkReportsSent (dupChRepTx)

Access Read: All
Write: Illegal

Description This attribute counts the number of chunks reported to the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were locally received.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc duplicateChunkReportsReceived (dupChRepRx)

Access Read: All
Write: Illegal

Description This attribute counts the number of chunks reported by the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were received by the far end.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

Default COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess SctpAssociation

Description The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess SctpAssociation component.

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc packetsSent

Description This attribute counts the number of IP packets sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **packetsReceived**

Description — This attribute counts the number of IP packets received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **bytesSent**

Description — This attribute counts the number of bytes sent.

This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **bytesReceived**

Description — This attribute counts the number of bytes received.

This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **dataChunksSent**

Description — This attribute counts the number of Payload Data (DATA) chunks sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **dataChunksReceived**

Description — This attribute counts the number of Payload Data (DATA) chunks received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **sackChunksSent**

Description — This attribute counts the number of Selective Acknowledgement (SACK) chunks sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **sackChunksReceived**

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Description	This attribute counts the number of Selective Acknowledgement (SACK) chunks received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **heartbeatChunksSent**

Description	This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks sent. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **heartbeatChunksReceived**

Description	This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **heartbeatAckChunksSent**

Description	This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks sent. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **heartbeatAckChunksReceived**

Description	This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **errorChunksSent**

Description	This attribute counts the number of Operation Error (ERROR) chunks sent. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **errorChunksReceived**

Description	This attribute counts the number of Operation Error (ERROR) chunks received. The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **invalidStreamIdErrorsSent**

Description This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to cause code 1 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **invalidStreamIdErrorsReceived**

Description This attribute counts the number of "Invalid Stream Identifier" errors received.

This corresponds to cause code 1 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **protocolErrorsSent**

Description This attribute counts the number of protocol errors sent.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **protocolErrorsReceived**

Description This attribute counts the number of protocol errors received.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **outOfResourceErrorsSent**

Description This attribute counts the number of "Out of Resource" errors sent.

This corresponds to error code 4 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **outOfResourceErrorsReceived**

Description This attribute counts the number of "Out of Resource" errors received.

This corresponds to error code 4 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **invalidAssocRestartErrorsSent**

Description This attribute counts the number of "Restart of an association with new addresses" errors sent.

This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **invalidAssocRestartErrorsReceived**

Description This attribute counts the number of "Restart of an association with new addresses" errors received.

This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **userInitiatedAbortsSent**

Description This attribute counts the number of "User Initiated Abort" indications sent by the local Stream Control Transmission Protocol (SCTP) user.

This corresponds to error code 12 defined in the SCTP Implementer's Guide.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **userInitiatedAbortsReceived**

Description This attribute counts the number of "User Initiated Abort" indications received from the peer Stream Control Transmission Protocol (SCTP) user.

This corresponds to error code 12 defined in the SCTP Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **checksumErrors**

Description This attribute counts the number of incoming packets that were discarded due to checksum verification failure.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **retransmittedChunks**

Description This attribute counts the number of Payload Data (DATA) chunks retransmitted.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **gapAcknowledgementsSent**

Description This attribute counts the number of chunks reported to the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were locally received out of order.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **gapAcknowledgementsReceived**

Description This attribute counts the number of chunks reported by the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were received out of order by the far end.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **duplicateChunkReportsSent**

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Description	This attribute counts the number of chunks reported to the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were locally received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **duplicateChunkReportsReceived**

Description	This attribute counts the number of chunks reported by the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were received by the far end. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Nsta Vgs M2ua As **V5uaInterfaceIdentifier (V5ualid)**

Instance	Decimal (0..255)
Groups	GROUP Nsta Vgs M2ua As V5ualid V5ualidProv GROUP Nsta Vgs M2ua As V5ualid V5ualidOp
Scope	Device
Description	*Nsta/n Vgs SgV5 As/n InterfaceIdentifier/n* This component represents the Interface Identifier (IID), an instance of a V5.2 link under an AS.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs M2ua As V5ualid **V5ualidProv**

Properties	Provisioned
Description	This group contains the provisioning data for the *InterfaceIdentifier* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As V5ualid **linkToLayer2 (linkToL2)**

Access	Read: All Write: All
Criticality	Component

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Description	This attribute specifies an *Nsta/n Vgs V5Link/n* component. This attribute specifies the physical endpoint of the IID. This can point to a V5Link component.
Mib	Vgs
Values	Link (Service, linkToIid)
Default	No default

GROUP Nsta Vgs M2ua As V5ualid **V5ualidOp**

Properties	Operational
Description	This group contains the operational data for the *InterfaceIdentifier* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs M2ua As V5ualid **interfaceId**

Access	Read only
Description	This attribute indicates the V5UA protocol link identifier for this V5Link. The value displayed here is the expected value of the V5UA interface identifier. Any V5UA messages received by the SgV5 with this specific interface identifier are processed by this V5Link. If the interface identifier received in a V5UA message does not match the interface identifier of any V5Link associated with this Vgs, the message is discarded.
Mib	Vgs
Values	Hex (H.0..H.ffffffff)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As V5ualid **linkStatusStopMsgRx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of LinkStatus Stop reporting messages SG received.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As V5ualid **linkStatusIndicationMsgTx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Link Status Indication messages SG sent.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As V5ualid **saBitSetValueMsgRx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Sa-Bit Set Value messages SG received.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As V5ualid **saBitSetAckMsgTx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Sa-Bit Set Ack messages SG sent.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As V5ualid **saBitStatusRequestMsgRx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Sa-Bit Status Request messages SG received.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs M2ua As V5ualid **saBitStatusIndicationMsgTx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Sa-Bit Status Indication messages SG sent.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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COMPONENT Nsta Vgs V5Link (V5Link)

Instance	Decimal (0..166777215)
Groups	GROUP Nsta Vgs V5Link Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs MgV5Link/n* The V5 signalling Gateway (SG) Application communicates with the Media Gateway Controller (MGC) by SgV5 over SCTP. The component provides the signalling linkage between the SG and the MGC.
Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs V5Link LapV5 (LapV5)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs V5Link Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *Nsta/n Vgs V5Link* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5Link interfaceName

Access	Read and write
Criticality	Process
Description	This is the value for the link identifier for SgV5 signalling. The link identifier provides the capability to use a specific identifier provisioned at both the MGC and the SG. This attribute specifies the link to the E1 Chan component that in turn specifies the timeslot for the Message V5Link transports.
Mib	Vgs
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs V5Link linkTolid

Access	Read and write
Criticality	Process

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Description	This attribute specifies the instance of the V5UAIID component to which the instance of the V5Link is linked. This is used only if integer format interfaceId is supported.
Mib	Vgs
Values	Link (Service, linkToLayer2)
Default	No default

ATTRIBUTE Nsta Vgs V5Link profile

Access	Read and write
Description	This attribute specifies a link to the Nsta/n Vgs V5Profile/n component, which in turn specifies the configurable parameters for this V5Link.
Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

COMPONENT Nsta Vgs V5Link LapV5 (LapV5)

Instance	Decimal (15; 16; 31)
Groups	GROUP Nsta Vgs V5Link LapV5 OsiState (State) GROUP Nsta Vgs V5Link LapV5 Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs Brag/n V5Link LapV5/<timeslot number>* *Nsta/n Vgs MgV5Link/n LapV5/n* This component represents a Link Access Protocol (LAP) entity for the V5.2 C-channel. The instance value is the specific timeslot used by the C-channel on the associated E1. The *LapV5* is provisioned whenever the indicated timeslot is to be used either for carrying V5.2 messaging (as an active C-channel) or when it is to be in a “stand-by” mode to provide an alternate C-channel, used if the active C-channel fails. A *V5Link* does not need to have any C-channels, so it is legitimate to have a *V5Link* component with no *LapV5* subcomponents. However, there can be no more that three *LapV5* subcomponents, since the standards explicitly state that only timeslots 15, 16, and 31 may be used for C-channels.
Mib	Vgs
Common Verbs	Help List Display Add DELete

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GROUP Nsta Vgs V5Link LapV5 **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5Link LapV5 **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs V5Link LapV5 **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs V5Link LapV5 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs V5Link LapV5 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Nsta/n Vgs Brag/n V5Link LapV5/<timeslot>* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5Link LapV5 interfaceId

Access	Read only
Criticality	Component
Description	This attribute indicates the V5UA protocol link identifier for this *LapV5*. The value displayed here is the expected value of the V5UA interface identifier for this particular C-channel. Any V5UA messages received by the *V5ua* with this specific interface identifier are processed by this *LapV5*. If the interface identifier received in a V5UA message does not match the interface identifier of any *LapV5* associated with this *Vgs*, the message is discarded. The format of the *LapV5* interface identifier and that of the *V5Link* interface identifier are closely related. The *LapV5* interface identifier is equal to the interface identifier of its parent *V5Link*, plus the timeslot number.

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	Therefore, the lowest 5 bits of the interface identifier are either 0 (for the *V5Link*), 15, 16, or 31 (for the C-channels).
Mib	Vgs
Values	Hex (H.0..H.ffffffff)
Default	No default

ATTRIBUTE Nsta Vgs V5Link LapV5 **txFrames**

Access	Read only
Description	This attribute counts the frames transmitted towards the TDM interface since the component was activated. This includes retransmitted frames. The counter wraps to 0 when its maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs V5Link LapV5 **rxFrames**

Access	Read only
Description	This attribute counts the frames received from the TDM interface since the component was activated. This includes errored frames. The counter wraps to 0 when its maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs V5Link LapV5 **erroredFrames**

Access	Read only
Description	This attribute counts the frames received from the TDM interface with errors since the component was activated. Note that the errored frames counted here do not include all errors. According to V5.2 standards, short frames (under the minimum required length) and some other errors are discarded without reporting them to upper levels of the V5.2 stack. The counter wraps to 0 when its maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs V5Link LapV5 **retransmittedFrames**

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Access	Read only
Description	This attribute counts retransmission attempts. The peer layer 2 must respond to an I frame within the protocol timer interval provisioned as *t200* seconds. If the peer layer 2 fails to acknowledge a frame prior to the expiry of the timer and there have not been *n200* retransmissions yet, the *LapV5* retransmits the unacknowledged frame and increments *retransmittedFrames*. If there have been sufficient retransmission attempts to reach the provisioned *n200* limit, the C-channel attempts to re-establish, and the *n200Exhausted* increments. The counter wraps to 0 when its maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs V5Link LapV5 **n200Exhausted**

Access	Read only
Description	This attribute counts the number of times that the retransmission limit specified by the *n200* attribute was exceeded on this C-channel (*LapV5*). Each time the limit is reached, the counter is incremented and the *LapV5* re-establishes the C-channel. The counter wraps to 0 when its maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs V5Link LapV5 **activeDataLinkProtocols**

Access	Read only
Description	This attribute indicates the set of V5.2 protocols currently established on C-channel. The following protocols ate supported: ***protection*** (***prot***) - This protocol provides the capability to enable stand-by C-channels when the active C-channels fail ***link*** - This protocol provides the capability to enable and disable E1 links, as well as provide Link Identification procedure messaging. ***control*** (***ctrl***) - This protocol provides the capability to enable and disable user terminals (sets). ***bcc*** - This protocol provides the capability to allocate specific B channels on indicated E1 links t a call.

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pstn - This protocol provides the capability to signla user terminal events from the terminal to the network and responses back to the terminal.

Mib	Vgs
Set of	protection (prot) link (link) control (ctrl) bcc (bcc) pstn (pstn)
Default	No default

COMPONENT Nsta Vgs V5Profile (V5Prof)

Instance	Decimal (0..9)
Groups	GROUP Nsta Vgs V5Prof Provisioned (Prov) GROUP Nsta Vgs V5Prof Provisioned (Prov)
Scope	Device
Description	*Nsta/n Vgs V5Profile/n* This component represents the configurable parameters for the MgV5Link component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs V5Prof Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the Nsta/n Vgs V5Profile/n component.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5Prof applicationList (appList)

Access	Read only
Description	This attribute contains a list of the client V5Link components linked to this profile.
Mib	Vgs
List of	Link (Service, profile)
Default	No default

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GROUP Nsta Vgs V5Prof **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioning attributes for the *Nsta/n Vgs Brag/n V5Link* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5Prof **t200**

Access	Read and write
Description	This attribute specifies the maximum time allowed between the transmission of a layer 2 frame and the receipt of an acknowledgement from the user. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second.
Mib	Vgs
Values	Decimal (0.5..5.0)
Units	seconds
Default	1.0

ATTRIBUTE Nsta Vgs V5Prof **t203**

Access	Read and write
Description	This attribute specifies the maximum time without frame exchange during multiple frame operations. Expiry of this timer leads to a "keep-alive" polling RR or RNR frame being transmitted to ensure that the remote layer 2 entity is still active.
Mib	Vgs
Values	Decimal (10..300)
Units	seconds
Default	10

ATTRIBUTE Nsta Vgs V5Prof **n200**

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of a layer 2 frame.
Mib	Vgs
Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs V5Prof **n201**

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Access	Read and write
Description	This attribute specifies the maximum length of an information field.
Mib	Vgs
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs V5Prof maxOutstandingFrames

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)
Default	7

COMPONENT Nsta Vgs SgV5UserAdaptation (SgV5)

Groups	GROUP Nsta Vgs SgV5 Provisioned (Prov) GROUP Nsta Vgs SgV5 OsiState (State) GROUP Nsta Vgs SgV5 Operational (Oper)
Scope	Device
Description	*Nsta/n Vgs SgV5* The V5 signalling gateway communicates with the MGC by SgV5 (V5.2 User Adaptation Layer) over SCTP. This component provides the signalling linkage between the SG and the MGC.
Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs SgV5 ApplicationServer (As)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs SgV5 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *Nsta/n Vgs SgV5* component.
Mib	Vgs

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ATTRIBUTE Nsta Vgs SgV5 sctpPortConnection

Access	Read and write
Description	This is the component nmae of the Nsta/x Vgs Control/SG SctpPort/n linked to the SgV5 component.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

GROUP Nsta Vgs SgV5 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs SgV5 operationalState (osiOper)

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Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs SgV5 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs SgV5 Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the *Vgs SgV5* component. *Nsta/n*
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 connectionRefused

Access	Read only

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Description	The attribute counts the number of SCTP connection requests refused by SgV5. The most likely cause for a connection to be refused is that the requestors IP address and /or port is not configured on this voice gateway.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs SgV5 ApplicationServer (As)

Instance	Decimal (0)
Groups	GROUP Nsta Vgs SgV5 As AsProv GROUP Nsta Vgs SgV5 As OsiState (State) GROUP Nsta Vgs SgV5 As AsOper
Scope	Device
Description	*Nsta/n Vgs M2ua ApplicationServer/n* *Nsta/n Vgs* Mg*V5ua* ApplicationServer*/n* This component represents the peer Application Server (AS) that establishes a Stream Control Transmission Protocol (SCTP) association with the User Adaptation application.
Mib	Vgs
Opt. Subcomp.	COMPONENT Nsta Vgs SgV5 As InterfaceIdentifier (Iid) COMPONENT Nsta Vgs SgV5 As ApplicationServerProcess (Asp) COMPONENT Nsta Vgs SgV5 As V5uaInterfaceIdentifier (V5uaIid)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs SgV5 As AsProv

Properties	Provisioned
Description	This group contains the provisionable data for the *ApplicationServer* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As recoveryTimer (recoveryT)

Access	Read: All Write: All
Description	This attribute specifies the amount of time to buffer outgoing messages when the Application Server Process (ASP) becomes inaccessible.

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If this timer expires before the ASP returns to service, the messages are dropped and the Application Server (AS) transitions into the ***down*** state.

A value of ***0*** indicates that buffering should not occur, and the AS should immediately transition into the ***down*** state when the ASP becomes inaccessible.

Note that higher values for this attribute will require more memory to be reserved for message buffering.

Mib	Vgs
Values	Decimal (0..5)
Units	seconds
Default	2

GROUP Nsta Vgs SgV5 As OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs SgV5 As operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs SgV5 As usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs SgV5 As AsOper

Properties	Operational
Description	This group contains the operational data for the *ApplicationServer* component.
Mib	Vgs

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ATTRIBUTE Nsta Vgs SgV5 As **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the peer Application Server (AS) state as determined by the local User Adaptation application. The state is defined in RFC 3331 and is one of the following: ***down*** - The AS is unavailable. This state implies that all related Application Server Processes (ASPs) are in the ASP-DOWN state for this AS. This is the initial AS state. ***active*** - The AS is available and application traffic is active. This state implies that at least one ASP is in the ASP-ACTIVE state. ***inactive*** - The AS is available but no application traffic is active (that is, one or more related ASPs are in the ASP-INACTIVE state, but none are in the ASP-ACTIVE state). ***pending*** - An active ASP has transitioned to ASP-INACTIVE or ASP-DOWN state and it was the last remaining active ASP.
Mib	Vgs
Values	inactive active pending down
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As **interfacesActive (ifActive)**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Interface Identifiers (IID) currently in an active state. This value is initially zero and increases up to a maximum of the number of *Iid* components provisioned under this component.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs SgV5 As **InterfaceIdentifier (Iid)**

Instance	Decimal (0..4294967295)
Groups	GROUP Nsta Vgs SgV5 As Iid IidProv GROUP Nsta Vgs SgV5 As Iid IidOper GROUP Nsta Vgs SgV5 As Iid IidMaupOper

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier

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Scope	Device
Description	*Nsta/n Vgs M2ua As/n InterfaceIdentifier/n* This component represents the Interface Identifier (IID), the identifier of the physical Layer 2 SS7 link. The instance value is an integer used as the IID in MTP2 User Adaptation Layer (M2UA) communication with the Application Server (AS). The instance number must match the IID provisioned on the AS. Each IID can support only one SS7 link to a given interface.
Mib	Vgs
Dyn. Subcomp.	COMPONENT Nsta Vgs SgV5 As Iid MonitoredCommunicationProtocol (MCP)
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs SgV5 As Iid IidProv

Properties	Provisioned
Description	This group contains the provisioning data for the *InterfaceIdentifier* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Iid linkToLayer2 (IToL2)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to the link layer entity that this Message Transfer Part Layer 2 User Adaptation (M2UA) application is backhauling over IP. This attribute specifies an *Nsta/n Vgs Mtp2/n* component. Changing this attribute will cause this component to be deleted and re-added.
Mib	Vgs
Values	Link (Service, linkToLayer3)
Default	No default

GROUP Nsta Vgs SgV5 As Iid IidOper

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Properties	Operational
Description	This group contains the operational data for the *InterfaceIdentifier* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Iid **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the local interface. The state may be one of the following: ***idle*** - Communication has not been established for this link. This is the initial state ***normalProving*** - The link is starting in normal proving mode ***emerProving*** - The link is starting in emergency proving mode ***active*** - The link has been started and is communicating normally ***lpo*** - Communication on this link has been disrupted due to a Local Processor Outage (LPO) condition ***rpo*** - Communication on this link has been disrupted due to a Remote Processor Outage (RPO) condition ***congested*** - The link has reported a congestion condition ***error*** - Communication has not been established on this link due to an error. This is the state used to indicate failure to establish communication with the remote Application Server Process (ASP).
Mib	Vgs
Values	idle normalProving emerProving active lpo rpo congested error
Default	No default

GROUP Nsta Vgs SgV5 As Iid **IidMaupOper**

Properties	Operational
Description	This group contains the operational data for the *InterfaceIdentifier* component pertaining to MTP2 User Adaptation (MAUP) messages.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Iid **dataMessagesReceived (dataRx)**

Access	Read: All Write: Illegal

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Description	This attribute counts the number of Data messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **dataMessagesSent (dataTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **dataAcknowledgementsReceived (dataAcksRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Acknowledgement messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **dataAcknowledgementsSent (dataAcksTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Acknowledgement messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **establishRequestsReceived (estReqsRx)**

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Access	Read: All Write: Illegal
Description	This attribute counts the number of Establish Request messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid establishRequestsSent (estReqsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Establish Request messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid establishConfirmsReceived (estConfsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Establish Confirm messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid establishConfirmsSent (estConfsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Establish Confirm messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid releaseRequestsReceived (relReqsRx)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of Release Request messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **releaseConfirmsSent (relConfsTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Release Confirm messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **releaseIndicationsSent (relIndTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Release Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **stateRequestsReceived (stateReqRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of State Request messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **stateConfirmsSent (stateConfsTx)**

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Access	Read: All Write: Illegal
Description	This attribute counts the number of State Confirm messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid stateIndicationsSent (stateIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of State Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid dataRetrievalRequestsReceived (dataRtvlReqRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Retrieval Request messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid dataRetrievalConfirmsSent (dataRtvlConfTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Retrieval Confirm messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs SgV5 As lid **dataRetrievalIndicationsSent (dataRtvlIndTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Retrieval Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **dataRetrievalCmplIndicationsSent (dataRtvlCmplIndTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Data Retrieval Complete Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid **congestionIndicationsSent (congIndTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Congestion Indication messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier component.

ATTRIBUTE Nsta Vgs SgV5 As lid **dataMessagesReceived**

Description	This attribute counts the number of Data messages received. The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataMessagesSent**

Description This attribute counts the number of Data messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataAcknowledgementsReceived**

Description This attribute counts the number of Data Acknowledgement messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataAcknowledgementsSent**

Description This attribute counts the number of Data Acknowledgement messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **establishRequestsReceived**

Description This attribute counts the number of Establish Request messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **establishRequestsSent**

Description This attribute counts the number of Establish Request messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **establishConfirmsReceived**

Description This attribute counts the number of Establish Confirm messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **establishConfirmsSent**

Description This attribute counts the number of Establish Confirm messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As lid **releaseRequestsReceived**

Description: This attribute counts the number of Release Request messages received.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **releaseConfirmsSent**

Description: This attribute counts the number of Release Confirm messages sent.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **releaseIndicationsSent**

Description: This attribute counts the number of Release Indication messages sent.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **stateRequestsReceived**

Description: This attribute counts the number of State Request messages received.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **stateConfirmsSent**

Description: This attribute counts the number of State Confirm messages sent.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **stateIndicationsSent**

Description: This attribute counts the number of State Indication messages sent.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataRetrievalRequestsReceived**

Description: This attribute counts the number of Data Retrieval Request messages received.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataRetrievalConfirmsSent**

Description: This attribute counts the number of Data Retrieval Confirm messages sent.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid **dataRetrievalIndicationsSent**

Description This attribute counts the number of Data Retrieval Indication messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid **dataRetrievalCmplIndicationsSent**

Description This attribute counts the number of Data Retrieval Complete Indication messages.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid **congestionIndicationsSent**

Description This attribute counts the number of Congestion Indication messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT Nsta Vgs SgV5 As Iid **MonitoredCommunicationProtocol (MCP)**

Groups GROUP Nsta Vgs SgV5 As Iid MCP OsiState (State)
GROUP Nsta Vgs SgV5 As Iid MCP Operational (Oper)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol

Scope Application

Description ... *MonitoredCommunicationProtocol*

This component represents the functionality that monitors the status of communication between the parent component and the neighboring component with which the parent component is communicating. This component does the following:
- detects the loss of communication between the neighbors being monitored.
- counts messages lost between the monitored neighbors.

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- ensures that the neighbor does not overflow with messages from this component.

Mib Vgs

Common Verbs
Help
List
Display

GROUP Nsta Vgs SgV5 As Iid MCP OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Vgs

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Vgs

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP operationalState (osiOper)

Access Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs SgV5 As Iid MCP **Operational (Oper)**

Properties	Operational
Description	This group contains the operational data for the *MonitoredCommunicationProtocol* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP **communicationFailures (commFailures)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of communication failures between the neighbors being monitored. The communication failure is detected in two ways:

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- if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively.
- if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented.

The counter wraps to zero when it exceeds the maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs SgV5 As lid MCP messageTxFailures (msgTxFailures)

Access: Read: All
Write: Illegal

Description: This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor.

The counter wraps to zero when it exceeds the maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs SgV5 As lid MCP messageRxFailures (msgRxFailures)

Access: Read: All
Write: Illegal

Description: This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the neighbor.

The counter wraps to zero when it exceeds the maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableRequestsTx (enableReqsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor. The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableRequestsRx (enableReqsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Request messages received by this component. The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableResponsesTx (enableRspsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Response messages sent by this component. The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor Enable Request message. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP enableResponsesRx (enableRspsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP heartbeatsTx (hbsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat messages sent by this component to the neighbor. If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP heartbeatRx (hbsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat messages received by this component. The value of this attribute is incremented when the Heartbeat message is received. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP **messagesTx (msgsTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages sent by this component to the neighbor. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP **messagesRx (msgsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages received by this component. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP **sequenceGapsTx (seqGapsTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Sequencing Gap messages sent by this component. When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs SgV5 As lid MCP **sequenceGapsRx (seqGapsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Sequencing Gap messages received by this component. When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers. The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **unknownMessagesRx (unknownMsgsRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP). The counter wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **messagesDiscarded (msgsDiscarded)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor. The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor. If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is incremented. The counter wraps to zero when it exceeds the maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP heartbeatTimer (hbTimer)

Access	Read: All Write: Illegal
Description	This attribute indicates the duration of the Heartbeat timer. The value of the Heartbeat timer is negotiated between the monitored parent components.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP heartbeatRetries

Access	Read: All Write: Illegal
Description	This attribute indicates the number of expiries of the Heartbeat timer allowed before marking the communication with the neighbor as down. The value of the Heartbeat retries is negotiated between the monitored parent components.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol component.

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP communicationFailures (commFailures)

Description	This attribute counts the number of communication failures between the neighbors being monitored. The communication failure is detected in two ways: - if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute

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is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively.
- if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP messageTxFailures (msgTxFailures)

Description — This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP messageRxFailures (msgRxFailures)

Description — This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the neighbor.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableRequestsTx (enableReqsTx)

Description — This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor.

The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableRequestsRx (enableReqsRx)

Description — This attribute counts the number of Monitor Enable Request messages received by this component.

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The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableResponsesTx (enableRspsTx)

Description: This attribute counts the number of Monitor Enable Response messages sent by this component.

The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableResponsesRx (enableRspsRx)

Description: This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP heartbeatsTx (hbsTx)

Description: This attribute counts the number of Heartbeat messages sent by this component to the neighbor.

If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP heartbeatRx (hbsRx)

Description: This attribute counts the number of Heartbeat messages received by this component.

The value of this attribute is incremented when the Heartbeat message is received.

The counter counts the number of events in the collection interval.

Values: Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As lid MCP **messagesTx (msgsTx)**

Description — This attribute counts the number of payload messages sent by this component to the neighbor.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **messagesRx (msgsRx)**

Description — This attribute counts the number of payload messages received by this component.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **sequenceGapsTx (seqGapsTx)**

Description — This attribute counts the number of Sequencing Gap messages sent by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **sequenceGapsRx (seqGapsRx)**

Description — This attribute counts the number of Sequencing Gap messages received by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **unknownMessagesRx (unknownMsgsRx)**

Description — This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP).

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As lid MCP messagesDiscarded (msgsDiscarded)

Description

This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor.

The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor.

If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is incremented.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

COMPONENT Nsta Vgs SgV5 As ApplicationServerProcess (Asp)

Instance

Decimal (0..2)

Groups

GROUP Nsta Vgs SgV5 As Asp AspProv
GROUP Nsta Vgs SgV5 As Asp OsiState (State)
GROUP Nsta Vgs SgV5 As Asp AspSctpOper
GROUP Nsta Vgs SgV5 As Asp AspSmTmOper
GROUP Nsta Vgs SgV5 As Asp AspErrorsOper

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess

Scope

Device

Description

Nsta/n Vgs M2ua As/n ApplicationServerProcess/n
Nsta/n Vgs SgV5 As/n ApplicationServerProcess/n

This component represents the peer Application Server Process (ASP) that establishes a Stream Control Transmission Protocol (SCTP) association with this User Adaptation application.

Mib

Vgs

Subcomponents

COMPONENT Nsta Vgs SgV5 As Asp SctpAssociation (SctpAssoc)

Common Verbs

Help
List
Display
Add
DELete

GROUP Nsta Vgs SgV5 As Asp AspProv

Properties

Provisioned

Description

This group contains the provisionable data for the *ApplicationServerProcess* component.

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Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Asp ipAddress (ip)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Internet Protocol (IP) address of the remote Application Server Process (ASP). If the value of the *localRole* attribute is set to ***client***, this is the destination towards which a Stream Control Transmission Protocol (SCTP) association is established. If the value of the *localRole* attribute is ***server***, this is the address from which a connection is expected.
Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp port

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Stream Control Transmission Protocol (SCTP) port of the remote Application Server Process (ASP).
Mib	Vgs
Values	Decimal (1..65535)
Default	2904

ATTRIBUTE Nsta Vgs SgV5 As Asp localRole (role)

Access	Read: All Write: All
Description	This attribute specifies whether this node should behave as a ***server***, receiving connections from the remote Application Server Process (ASP), or as a ***client***, initiating connections towards the remote ASP.
Mib	Vgs
Values	server client
Default	server

ATTRIBUTE Nsta Vgs SgV5 As Asp sctpAckDelay (ackDelay)

Access	Read: All Write: All

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Description	This attribute specifies the delayed acknowledgement timer for the Stream Control Transmission Protocol (SCTP) association used by this Application Server Process (ASP). This controls the maximum interval between the sending of SCTP Selective Acknowledgement (SACK) chunks during idle communication periods.
Mib	Vgs
Values	Decimal (50..500)
Units	msec
Default	200

GROUP Nsta Vgs SgV5 As Asp **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Asp **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Nsta Vgs SgV5 As Asp **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs SgV5 As Asp **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs SgV5 As Asp **AspSctpOper**

Properties	Operational
Description	This group contains the operational data for the *ApplicationServerProcess* component pertaining to Stream Control Transmission Protocol (SCTP) messages.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpEstablishIndications (sctpEstInds)**

Access	Read: All Write: Illegal

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Description	This attribute counts the number of M-SCTP Establish Indications received for this Application Server Process (ASP). This counter is incremented only when the value of the *localRole* attribute is set to ***server***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp sctpEstablishRequests (sctpEstReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of M-SCTP Establish Requests sent for this Application Server Process (ASP). This attribute counts the number of the attempts to establish a Stream Control Transmission Protocol (SCTP) association with the remote ASP. This counter is incremented only when the value of the *localRole* attribute is set to ***client***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp sctpEstablishFailures (sctpEstFails)

Access	Read: All Write: Illegal
Description	This attribute counts the number of M-SCTP Establish Requests that failed to successfully establish a Stream Control Transmission Protocol (SCTP) association with the remote Application Server Process (ASP). This counter is incremented only when the value of the *localRole* attribute is set to ***client***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp sctpReleaseIndications (sctpRelInds)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of M-SCTP Release Indications received for this Application Server Process (ASP). This counter is incremented only when the value of the *localRole* attribute is set to ***server***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpRestartIndications (sctpRestartInds)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of M-SCTP Restart Indications received for this Application Server Process (ASP). This counter is incremented only when the value of the *localRole* attribute is set to ***server***. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs SgV5 As Asp **AspSmTmOper**

Properties	Operational
Description	This group contains the operational data for the *ApplicationServerProcess* component that pertains to the Application Server Process (ASP) state machine and traffic management.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspUpMsgsReceived (aspUpRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Up (UP) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp aspDownMsgsReceived (aspDnRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Down (DOWN) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp aspUpAcksSent (aspUpAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Up Acknowledgement (UP ACK) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp aspDownAcksSent (aspDnAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Down Acknowledgement (DOWN ACK) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp aspActiveMsgsReceived (aspActRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Application Server Process (ASP) Active (ACTIVE) messages received.

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The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp aspInactiveMsgsReceived (aspInactRx)

Access Read: All
Write: Illegal

Description This attribute counts the number of Application Server Process (ASP) Inactive (INACTIVE) messages received.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp aspActiveAcksSent (aspActAcksTx)

Access Read: All
Write: Illegal

Description This attribute counts the number of Application Server Process (ASP) Active Acknowledgement (ACTIVE ACK) messages sent.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp aspInactiveAcksSent (aspInactAcksTx)

Access Read: All
Write: Illegal

Description This attribute counts the number of Application Server Process (ASP) Inactive Acknowledgement (INACTIVE ACK) messages sent.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp heartbeatsSent (hbTx)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat (BEAT) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp heartbeatsReceived (hbRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat (BEAT) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp heartbeatAcksSent (hbAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp heartbeatAcksReceived (hbAcksRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs SgV5 As Asp **notifyMsgsSent (notifyTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Notify (NTFY) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs SgV5 As Asp **AspErrorsOper**

Properties	Operational
Description	This group contains the operational data for the *ApplicationServerProcess* component pertaining to errors during traffic management.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Asp **errorsSent (errTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Error (ERR) messages sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp **errorsReceived (errRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Error (ERR) messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp **invalidVersionErrorsSent (invVerErrTx)**

Access	Read: All Write: Illegal

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Description	This attribute counts the number of "Invalid Version" errors sent. This corresponds to error code 0x1 defined in RFC 3331. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidVersionErrorsReceived (invVerErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Version" errors received. This corresponds to error code 0x1 defined in RFC 3331. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidIidErrorsSent (invIidErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Interface Identifier" errors sent. This corresponds to error code 0x2 defined in RFC 3331. This error occurs when the Application Server Process (ASP) references an Interface Identifier (IID) that is not locally configured. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidIidErrorsReceived (invIidErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Interface Identifier" errors received. This corresponds to error code 0x2 defined in RFC 3331. This error occurs when the remote Application Server Process (ASP) does not recognize the Interface Identifier (IID) that it has received. The counter wraps to zero when it exceeds its maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp unsupportedTypeErrorsSent (unsupErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of following errors sent that are defined in RFC 3331: - "Unsupported Message Class" (error code 0x3) - "Unsupported Message Type" (error code 0x4) - "Unsupported Traffic Handling Mode" (error code 0x5). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp unsupportedTypeErrorsReceived (unsupErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of following errors received that are defined in RFC 3331: - "Unsupported Message Class" (error code 0x3) - "Unsupported Message Type" (error code 0x4) - "Unsupported Traffic Handling Mode" (error code 0x5). The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp protocolErrorsSent (protErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of protocol errors detected locally. This corresponds to the following errors defined in RFC 3331: - "Unexpected Message" (error code 0x6) - "Protocol Error" (error code 0x7) - "Invalid Parameter Value" (error code 0x11) - "Parameter Field Error" (error code 0x12) - "Unexpected Parameter" (error code 0x13)

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- "Missing Parameter" (error code 0x16).

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp protocolErrorsReceived (protErrRx)

Access Read: All
Write: Illegal

Description This attribute counts the number of protocol errors detected by the remote Application Server Process (ASP).

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidStreamIdErrorsSent (invStrmIdErrTx)

Access Read: All
Write: Illegal

Description This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to error code 0x9 defined in RFC 3331. This error is sent if a management message is received on a stream other than "0".

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidStreamIdErrorsReceived (invStrmIdErrRx)

Access Read: All
Write: Illegal

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Description	This attribute counts the number of "Invalid Stream Identifier" errors received This corresponds to error code 0x9 defined in RFC 3331. Receipt of this error indicates that the remote node received a message on an unexpected Stream Control Transmission Protocol (SCTP) stream. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp **sendFailures (sndFails)**

Access	Read: All Write: Illegal
Description	This attribute counts the times the User Adaptation application was unable to send a Stream Control Transmission Protocol (SCTP) message to the remote Application Server Process (ASP). The most likely cause of a send failure is congestion on the remote node. Messages that the SCTP layer is unable to send are discarded. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess component.

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspUpMsgsReceived**

Description	This attribute counts the number of Application Server Process (ASP) Up (UP) messages received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspDownMsgsReceived**

Description	This attribute counts the number of Application Server Process (ASP) Down (DOWN) messages received. The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp aspUpAcksSent

Description This attribute counts the number of Application Server Process (ASP) Up Acknowledgement (UP ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp aspDownAcksSent

Description This attribute counts the number of Application Server Process (ASP) Down Acknowledgement (DOWN ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp aspActiveMsgsReceived

Description This attribute counts the number of Application Server Process (ASP) Active (ACTIVE) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp aspInactiveMsgsReceived

Description This attribute counts the number of Application Server Process (ASP) Inactive (INACTIVE) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp aspActiveAcksSent

Description This attribute counts the number of Application Server Process (ASP) Active Acknowledgement (ACTIVE ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp aspInactiveAcksSent

Description This attribute counts the number of Application Server Process (ASP) Inactive Acknowledgement (INACTIVE ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp heartbeatsSent

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Description This attribute counts the number of Heartbeat (BEAT) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **heartbeatsReceived**

Description This attribute counts the number of Heartbeat (BEAT) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **heartbeatAcksSent**

Description This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **heartbeatAcksReceived**

Description This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **notifyMsgsSent**

Description This attribute counts the number of Notify (NTFY) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **errorsSent**

Description This attribute counts the number of Error (ERR) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **errorsReceived**

Description This attribute counts the number of Error (ERR) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **invalidVersionErrorsSent**

Description This attribute counts the number of "Invalid Version" errors sent. This corresponds to error code 0x1 defined in RFC 3331.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidVersionErrorsReceived

Description This attribute counts the number of "Invalid Version" errors received. This corresponds to error code 0x1 defined in RFC 3331.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidIidErrorsSent

Description This attribute counts the number of "Invalid Interface Identifier" errors sent. This corresponds to error code 0x2 defined in RFC 3331.

This error occurs when the Application Server Process (ASP) references an Interface Identifier (IID) that is not locally configured.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidIidErrorsReceived

Description This attribute counts the number of "Invalid Interface Identifier" errors received. This corresponds to error code 0x2 defined in RFC 3331.

This error occurs when the remote Application Server Process (ASP) does not recognize the Interface Identifier (IID) that it has received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp unsupportedTypeErrorsSent

Description This attribute counts the number of following errors sent that are defined in RFC 3331:
- "Unsupported Message Class" (error code 0x3)
- "Unsupported Message Type" (error code 0x4)
- "Unsupported Traffic Handling Mode" (error code 0x5).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp unsupportedTypeErrorsReceived

Description This attribute counts the number of following errors received that are defined in RFC 3331:
- "Unsupported Message Class" (error code 0x3)
- "Unsupported Message Type" (error code 0x4)
- "Unsupported Traffic Handling Mode" (error code 0x5).

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp protocolErrorsSent

Description This attribute counts the number of protocol errors detected locally.

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp protocolErrorsReceived

Description This attribute counts the number of protocol errors detected by the remote Application Server Process (ASP).

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidStreamIdErrorsSent

Description This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to error code 0x9 defined in RFC 3331. This error is sent if a management message is received on a stream other than "0".

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp invalidStreamIdErrorsReceived

Description This attribute counts the number of "Invalid Stream Identifier" errors received

This corresponds to error code 0x9 defined in RFC 3331. Receipt of this error indicates that the remote node received a message on an

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unexpected Stream Control Transmission Protocol (SCTP) stream.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sendFailures**

Description This attribute counts the times the User Adaptation application was unable to send a Stream Control Transmission Protocol (SCTP) message to the remote Application Server Process (ASP).

The most likely cause of a send failure is congestion on the remote node. Messages that the SCTP layer is unable to send are discarded.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpEstablishIndications**

Description This attribute counts the number of M-SCTP Establish Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpEstablishRequests**

Description This attribute counts the number of M-SCTP Establish Requests sent for this Application Server Process (ASP).

This attribute counts the number of the attempts to establish a Stream Control Transmission Protocol (SCTP) association with the remote ASP.

This counter is incremented only when the value of the *localRole* attribute is set to ***client***.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpEstablishFailures**

Description This attribute counts the number of M-SCTP Establish Requests that failed to successfully establish a Stream Control Transmission Protocol (SCTP) association with the remote Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***client***.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpReleaseIndications**

Description This attribute counts the number of M-SCTP Release Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpRestartIndications**

Description This attribute counts the number of M-SCTP Restart Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT Nsta Vgs SgV5 As Asp **SctpAssociation (SctpAssoc)**

Groups GROUP Nsta Vgs SgV5 As Asp SctpAssoc SctpAssocOper
GROUP Nsta Vgs SgV5 As Asp SctpAssoc SctpAssocErrorsOper

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess SctpAssociation

Scope Device

Description *Nsta/n Vgs M2ua As/n Asp/n SctpAssociation*
Nsta/n Vgs SgV5 As/n Asp/n SctpAssociation

This component represents a Stream Control Transmission Protocol (SCTP) association between this User Adaptation application and the peer Application Server Process (ASP).

The component provides per-association statistics that are not cleared when the association is released, but maintained over time.

Mib Vgs

Common Verbs Help
List
Display

GROUP Nsta Vgs SgV5 As Asp SctpAssoc **SctpAssocOper**

Properties Operational

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Description	This group contains the operational data for the *SctpAssoc* component pertaining to the Stream Control Transmission Protocol (SCTP) communication.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc packetsSent (pktsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IP packets sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc packetsReceived (pktsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IP packets received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc bytesSent (bytesTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of bytes sent. This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc bytesReceived (bytesRx)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of bytes received. This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **dataChunksSent (dataChTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Payload Data (DATA) chunks sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **dataChunksReceived (dataChRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Payload Data (DATA) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **sackChunksSent (sackChTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Selective Acknowledgement (SACK) chunks sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **sackChunksReceived (sackChRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Selective Acknowledgement (SACK) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatChunksSent (hbChTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatChunksReceived (hbChRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatAckChunksSent (hbAckChTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks sent. The counter wraps to zero when it exceeds its maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc heartbeatAckChunksReceived (hbAckChRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc outboundStreams (outStrms)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of outbound streams for this Stream Control Transmission Protocol (SCTP) association.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc inboundStreams (inStrms)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of inbound streams for this Stream Control Transmission Protocol (SCTP) association.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc lastFailureReason (failRsn)

Access	Read: All Write: Illegal
Description	This attribute indicates the reason for the most recent Stream Control Transmission Protocol (SCTP) association failure. The reason may be one of the following:

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none - Connection has never failed
farEndAbort - Abort request received from the peer
farEndShutdown - Shutdown request received from the peer
communicationTimeout - Maximum number of retransmissions was exceeded
maxUnackedMsgsLimit - Number of unacknowledged messages reached the internal limit.

Mib	Vgs
Values	none farEndAbort farEndShutdown communicationTimeout maxUnackedMsgsLimit
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc lastFailureTime (failTime)

Access	Read: All Write: Illegal
Description	This attribute indicates the date and Universal Time Coordinated (UTC) time at which the last Stream Control Transmission Protocol (SCTP) association failure occurred. The timestamp corresponds with the value of the *lastFailureReason* attribute.
Mib	Vgs
Values	Time (DHMS)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc srtt

Access	Read: All Write: Illegal
Description	This attribute indicates the Smoothed Round-Trip Time (SRTT) as defined in RFC 2960.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP Nsta Vgs SgV5 As Asp SctpAssoc SctpAssocErrorsOper

Properties	Operational
Description	This group contains the operational data for the *SctpAssoc* component pertaining to errors and diagnostics in the Stream Control Transmission Protocol (SCTP) communication.

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Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc errorChunksSent (errorChTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Operation Error (ERROR) chunks sent. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc errorChunksReceived (errorChRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Operation Error (ERROR) chunks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc invalidStreamIdErrorsSent (invStrmIdErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Stream Identifier" errors sent. This corresponds to cause code 1 defined in RFC 2960. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc invalidStreamIdErrorsReceived (invStrmIdErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Invalid Stream Identifier" errors received.

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This corresponds to cause code 1 defined in RFC 2960.

The counter wraps to zero when it exceeds its maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **protocolErrorsSent (protErrTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of protocol errors sent. This corresponds to the cause codes defined in RFC 2960: 2 - "Missing Mandatory Parameter" 6 - "Unrecognized Chunk Type" 7 - "Invalid Mandatory Parameter" 8 - "Unrecognized Parameters" 9 - "No User Data" It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **protocolErrorsReceived (protErrRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of protocol errors received. This corresponds to the cause codes defined in RFC 2960: 2 - "Missing Mandatory Parameter" 6 - "Unrecognized Chunk Type" 7 - "Invalid Mandatory Parameter" 8 - "Unrecognized Parameters" 9 - "No User Data" It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.

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Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc outOfResourceErrorsSent (outRsrcErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Out of Resource" errors sent. This corresponds to error code 4 defined in RFC 2960. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc outOfResourceErrorsReceived (outRsrcErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Out of Resource" errors received. This corresponds to error code 4 defined in RFC 2960. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc invalidAssocRestartErrorsSent (invAssnRstErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Restart of an association with new addresses" errors sent. This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc invalidAssocRestartErrorsReceived (invAssnRstErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "Restart of an association with new addresses" errors received. This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc userInitiatedAbortsSent (userAbortErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "User Initiated Abort" indications sent by the local Stream Control Transmission Protocol (SCTP) user. This corresponds to error code 12 defined in the SCTP Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc userInitiatedAbortsReceived (userAbortErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of "User Initiated Abort" indications received from the peer Stream Control Transmission Protocol (SCTP) user. This corresponds to error code 12 defined in the SCTP Implementer's Guide. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **checksumErrors (csumErr)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of incoming packets that were discarded due to checksum verification failure. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **retransmittedChunks (reTxChunks)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of Payload Data (DATA) chunks retransmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **gapAcknowledgementsSent (gapAcksTx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of chunks reported to the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were locally received out of order. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **gapAcknowledgementsReceived (gapAcksRx)**

Access	Read: All Write: Illegal
Description	This attribute counts the number of chunks reported by the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were received out of order by the far end.

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The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc duplicateChunkReportsSent (dupChRepTx)

Access Read: All
Write: Illegal

Description This attribute counts the number of chunks reported to the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were locally received.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc duplicateChunkReportsReceived (dupChRepRx)

Access Read: All
Write: Illegal

Description This attribute counts the number of chunks reported by the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were received by the far end.

The counter wraps to zero when it exceeds its maximum value.

Mib Vgs

Values Decimal (0..4294967295)

Default No default

Default COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess SctpAssociation

Description The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess SctpAssociation component.

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc packetsSent

Description This attribute counts the number of IP packets sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **packetsReceived**

Description — This attribute counts the number of IP packets received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **bytesSent**

Description — This attribute counts the number of bytes sent.

This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **bytesReceived**

Description — This attribute counts the number of bytes received.

This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **dataChunksSent**

Description — This attribute counts the number of Payload Data (DATA) chunks sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **dataChunksReceived**

Description — This attribute counts the number of Payload Data (DATA) chunks received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **sackChunksSent**

Description — This attribute counts the number of Selective Acknowledgement (SACK) chunks sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **sackChunksReceived**

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Description	This attribute counts the number of Selective Acknowledgement (SACK) chunks received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatChunksSent**

Description	This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks sent. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatChunksReceived**

Description	This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatAckChunksSent**

Description	This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks sent. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatAckChunksReceived**

Description	This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **errorChunksSent**

Description	This attribute counts the number of Operation Error (ERROR) chunks sent. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **errorChunksReceived**

Description	This attribute counts the number of Operation Error (ERROR) chunks received. The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **invalidStreamIdErrorsSent**

Description This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to cause code 1 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **invalidStreamIdErrorsReceived**

Description This attribute counts the number of "Invalid Stream Identifier" errors received.

This corresponds to cause code 1 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **protocolErrorsSent**

Description This attribute counts the number of protocol errors sent.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **protocolErrorsReceived**

Description This attribute counts the number of protocol errors received.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **outOfResourceErrorsSent**

Description This attribute counts the number of "Out of Resource" errors sent.

This corresponds to error code 4 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **outOfResourceErrorsReceived**

Description This attribute counts the number of "Out of Resource" errors received.

This corresponds to error code 4 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **invalidAssocRestartErrorsSent**

Description This attribute counts the number of "Restart of an association with new addresses" errors sent.

This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **invalidAssocRestartErrorsReceived**

Description This attribute counts the number of "Restart of an association with new addresses" errors received.

This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **userInitiatedAbortsSent**

Description This attribute counts the number of "User Initiated Abort" indications sent by the local Stream Control Transmission Protocol (SCTP) user.

This corresponds to error code 12 defined in the SCTP Implementer's Guide.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **userInitiatedAbortsReceived**

Description This attribute counts the number of "User Initiated Abort" indications received from the peer Stream Control Transmission Protocol (SCTP) user.

This corresponds to error code 12 defined in the SCTP Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **checksumErrors**

Description This attribute counts the number of incoming packets that were discarded due to checksum verification failure.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **retransmittedChunks**

Description This attribute counts the number of Payload Data (DATA) chunks retransmitted.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **gapAcknowledgementsSent**

Description This attribute counts the number of chunks reported to the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were locally received out of order.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **gapAcknowledgementsReceived**

Description This attribute counts the number of chunks reported by the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were received out of order by the far end.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **duplicateChunkReportsSent**

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Description	This attribute counts the number of chunks reported to the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were locally received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **duplicateChunkReportsReceived**

Description	This attribute counts the number of chunks reported by the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were received by the far end. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Nsta Vgs SgV5 As **V5uaInterfaceIdentifier (V5ualid)**

Instance	Decimal (0..255)
Groups	GROUP Nsta Vgs SgV5 As V5ualid V5ualidProv GROUP Nsta Vgs SgV5 As V5ualid V5ualidOp
Scope	Device
Description	*Nsta/n Vgs SgV5 As/n InterfaceIdentifier/n* This component represents the Interface Identifier (IID), an instance of a V5.2 link under an AS.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs SgV5 As V5ualid **V5ualidProv**

Properties	Provisioned
Description	This group contains the provisioning data for the *InterfaceIdentifier* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As V5ualid **linkToLayer2 (linkToL2)**

Access	Read: All Write: All
Criticality	Component

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Description	This attribute specifies an *Nsta/n Vgs V5Link/n* component. This attribute specifies the physical endpoint of the IID. This can point to a V5Link component.
Mib	Vgs
Values	Link (Service, linkToIid)
Default	No default

GROUP Nsta Vgs SgV5 As V5ualid **V5ualidOp**

Properties	Operational
Description	This group contains the operational data for the *InterfaceIdentifier* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs SgV5 As V5ualid **interfaceId**

Access	Read only
Description	This attribute indicates the V5UA protocol link identifier for this V5Link. The value displayed here is the expected value of the V5UA interface identifier. Any V5UA messages received by the SgV5 with this specific interface identifier are processed by this V5Link. If the interface identifier received in a V5UA message does not match the interface identifier of any V5Link associated with this Vgs, the message is discarded.
Mib	Vgs
Values	Hex (H.0..H.ffffffff)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As V5ualid **linkStatusStopMsgRx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of LinkStatus Stop reporting messages SG received.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As V5ualid **linkStatusIndicationMsgTx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Link Status Indication messages SG sent.
Mib	Vgs

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As V5ualid **saBitSetValueMsgRx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Sa-Bit Set Value messages SG received.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As V5ualid **saBitSetAckMsgTx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Sa-Bit Set Ack messages SG sent.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As V5ualid **saBitStatusRequestMsgRx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Sa-Bit Status Request messages SG received.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs SgV5 As V5ualid **saBitStatusIndicationMsgTx**

Access	Read: All Write: Illegal
Description	This attribute represents the number of Sa-Bit Status Indication messages SG sent.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Nsta

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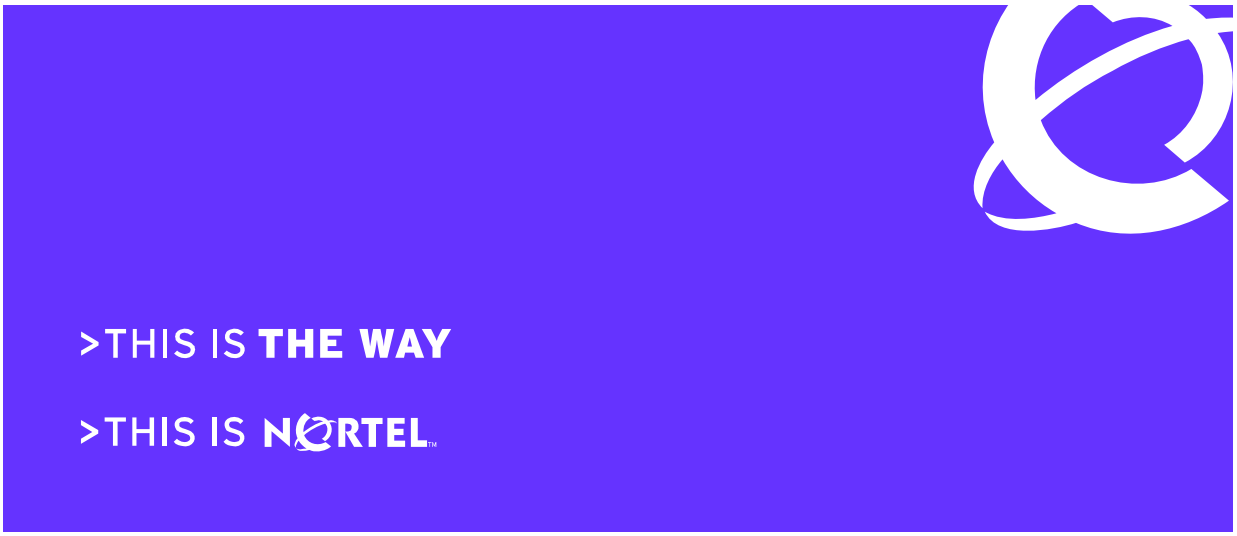

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - NS

NN10600-060

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COMPONENT NetworkSynchronization (NS)

Groups	GROUP NS Provisioned (Prov) GROUP NS OsiState (State) GROUP NS Operational (Oper)
Scope	Network
Description	The *NetworkSynchronization* component administers the network clock synchronization.
Mib	Time
Common Verbs	Help List Display Add DELete

VERB Revert NS

Impact	Service
Description	This command moves all clock sources in the reversion delay list to the current clock source list, if the reversion condition applies, to be available for clock synchronization. When entered with no option, this command is applicable only when reversionDelay is manual.

GROUP NS Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for the *NetworkSynchronization* component.
Mib	Time

ATTRIBUTE NS primaryReference (priRef)

Access	Read and write

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Description	This attribute specifies the port that is the preferred choice as the reference for the network clock.
Mib	Time
Values	The name of the component
Default	No default

ATTRIBUTE NS secondaryReference (secRef)

Access	Read and write
Description	This attribute specifies the port that is the second choice for the reference for the network clock.
Mib	Time
Values	The name of the component
Default	No default

ATTRIBUTE NS tertiaryReference (tertRef)

Access	Read and write
Description	This attribute specifies the port that is the third choice for the reference for the network clock.
Mib	Time
Values	The name of the component
Default	No default

ATTRIBUTE NS useableReferences (useRef)

Access	Read and write
Description	This attribute specifies the criteria that a reference must meet for the *NetworkSynchronization* component to consider it a usable clocking source. A value of ***enabled*** indicates that all enabled clocking sources are usable. A value of ***notDegraded*** indicates that clocking sources must be enabled and not degraded to be usable.
Mib	Time
Values	enabled notDegraded
Default	enabled

ATTRIBUTE NS reversionDelay (revDel)

Access	Read and write
Description	This attribute specifies how long the *NetworkSynchronization* component waits before using a port as a reference after it has been cleared of its degraded/disabled status.

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Note:
In non-revertive (manual) mode, if all provisioned references have failed, the NS stays in holdover mode (NS *clockSyncState* = *freeRun*). When one of the provisioned references becomes available, the NS remains in holdover mode and will not automatically switch to the available reference (exiting holdover requires that an operator issue the command "revert ns"). In revertive mode, the NS automatically exits holdover mode and switches to the available reference, either immediately or with a delay if provisioned.

Mib	Time
Values	Decimal (0..120) manual (man)
Units	minutes
Default	0

ATTRIBUTE NS ssmProtocol (ssm)

Access	Read and write
Description	This attribute specifies if the clock reference selection based on Synchronization Status Message (SSM) is enabled on the node. If this attribute has a value of ***enabledRevertive***, then the activeReference and standbyReference are revertive to the provisioned priority of primary, secondary or tertiary provided the reference has the same quality level. If the attribute value is ***enabledNonRevertive***, then the activeReference clock reference selection is not dependent on the provisioned priority of primary, secondary or tertiary (the standbyReference clock will always be revertive). If the attribute value is ***enabledMigration***, then the SSM messages are stored and broadcasted as in other enabled states but no switching decisions are made based on the SSM messages (this is a useful state during network migration when not all node in the network are distributing the proper SSM values). If the attribute value is ***disabled***, then the SSM messages are only stored but no broadcasting or switching decision is made.
Mib	Time
Values	disabled enabledRevertive enabledNonRevertive enabledMigration
Default	disabled

ATTRIBUTE NS termPanel (termPanel)

Access	Read and write
Description	This attribute specifies whether a termination panel is used in the external timing configuration. A value of ***yes*** indicates the termination panel is used. A value of ***no*** indicates the termination panel is not used.

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Mib	Time
Values	no yes
Default	No default

ATTRIBUTE NS setsPrimaryReference (setsPriRef)

Access	Read and write
Description	This attribute specifies the source that is the preferred choice as the reference for the SETS port.
Mib	Time
Values	nsSelect bitsA bitsB nsProcessed none
Default	none

ATTRIBUTE NS setsSecondaryReference (setsSecRef)

Access	Read and write
Description	This attribute specifies the source that is the second choice for the reference for the SETS port.
Mib	Time
Values	nsSelect bitsA bitsB nsProcessed none
Default	none

ATTRIBUTE NS setsTertiaryReference (setsTertRef)

Access	Read and write
Description	This attribute specifies the source that is the third choice for the reference for the SETS port.
Mib	Time
Values	nsSelect bitsA bitsB nsProcessed none
Default	none

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ATTRIBUTE NS setsSSMProtocol (setsSSM)

Access	Read and write
Description	This attribute specifies if the SETS clock reference selection based on Synchronization Status Message (SSM) is enabled. If this attribute has a value of ***enabledRevertive***, then the setsActiveReference and setsStandbyReference are revertive to the provisioned priority of SETS primary, secondary or tertiary provided the reference has the same quality level. If the attribute value is ***enabledNonRevertive***, then the setsActiveReference clock reference selection is not dependent on the provisioned priority of SETS primary, secondary or tertiary (the setsStandbyReference clock will always be revertive). If the attribute value is ***disabled***, then the SSM messages are only stored but no broadcasting or switching decision is made.
Mib	Time
Values	disabled enabledRevertive enabledNonRevertive
Default	disabled

ATTRIBUTE NS setsSquelchTimer (setsSquelch)

Access	Read and write
Description	This attribute specifies how long the *NetworkSynchronization* component waits before starting the SETS clock source selection. This is to allow the stability of the reference sources. This timer is applicable after a node reset or CP switchover.
Mib	Time
Values	Decimal (0..12)
Units	minutes
Default	0

GROUP NS OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Time

ATTRIBUTE NS adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Time
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE NS operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Time
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE NS usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Time

Values
idle
active (activ)
busy

Default — idle

GROUP NS Operational (Oper)

Properties — Operational

Description

This group contains the operational attributes for the *NetworkSynchronization* component.

Mib — Time

ATTRIBUTE NS clockSyncState (clkSyncState)

Access — Read only

Description

When the *clockSyncState* attribute has a value of ***freeRun***, either no reference have been provisioned or none of the provisioned references have been found to be valid. The Stratum-3 clock is allowed to run freely at its last adjusted frequency. When the *clockSyncState* attribute has a value of ***synchronizing***, the Stratum-3 is trying to synchronize in frequency to a valid provisioned reference. This state should last approximately 1-2 minutes, provided the reference is stable. Once frequency synchronization is achieved, a null phase is acquired and the value of the *clockSyncState* attribute becomes ***synchronized***. In this state, both phase and frequency are tracked and compensated for. This node is now ready to support transparent data services.

Mib — Time

Values
freeRun
synchronizing
synchronized

Default — No default

ATTRIBUTE NS activeReference (actRef)

Access — Read only

Description

This attribute indicates the active 8Khz clock reference source

Mib — Time

Values — The name of the component

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Default	No default

ATTRIBUTE NS standbyReference (standyRef)

Access	Read only
Description	This attribute indicates the standby 8Khz clock reference source that will be selected if a failure is detected on the active source.
Mib	Time
Values	The name of the component
Default	No default

ATTRIBUTE NS activeRefSSMValue (actSsm)

Access	Read only
Description	This attribute indicates the Synchronization Status Messages (SSM) value received from the active reference port. This attribute is filtered out when no active reference port is available or ssmProtocol is disabled.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE NS standbyRefSSMValue (stdSsm)

Access	Read only
Description	This attribute indicates the Synchronization Status Message (SSM) value received from the standby reference port. This attribute is filtered out when no standby reference port is available or ssmProtocol is disabled.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE NS setsActiveReference (setsActRef)

Access	Read only
Description	This attribute indicates the active 8Khz clock reference source for the SETS port.
Mib	Time
Values	nsSelect bitsA bitsB

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	nsProcessed none
Default	none

ATTRIBUTE NS setsStandbyReference (setsStandyRef)

Access	Read only
Description	This attribute indicates the standby 8Khz clock reference source for the SETS port that will be selected if a failure is detected on the active source.
Mib	Time
Values	nsSelect bitsA bitsB nsProcessed none
Default	none

ATTRIBUTE NS setsActiveRefSSMValue (setsActSsm)

Access	Read only
Description	This attribute indicates the Synchronization Status Messages (SSM) value received from the active reference source for the SETS port. This attribute is filtered out when no active reference port is available or ssmProtocol is disabled.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE NS setsStandbyRefSSMValue (setsStdSsm)

Access	Read only
Description	This attribute indicates the Synchronization Status Message (SSM) value received from the standby reference source for the SETS port. This attribute is filtered out when no standby reference port is available or ssmProtocol is disabled.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE NS setsSquelchTimerStatus (setsSquelchStat)

Access	Read only

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Description	This attribute indicates the time remaining (in minutes) before the setsSquelchTimer expires.
Mib	Time
Values	Decimal (0..12)
Units	minutes
Default	0

ATTRIBUTE NS setsPllAlarm (setsPllAlarm)

Access	Read only
Description	This attribute indicates whether the Pll Alarm has been raised, indicating the SETS PLL cannot detect the active 8 Khz clock reference source.
Mib	Time
Values	on off
Default	off

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - NS

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About this document

The guide contains detailed reference material pertaining to Multiservice Switch components.

Who should read this guide

This is a detailed reference guide intended to be used for installing, configuring, provisioning or operating a Multiservice Switch node.

How this guide is organized

The introductory chapters:

- give a detailed description of components and attributes
- help you to find your way through this document. Field descriptions and examples ensure a complete understanding of the reference chapters that follow

The remaining chapters contain all component and attribute information for all subsystems. They explain the fields and information required to provision, monitor, operate, and maintain a Multiservice Switch node.

What you need to know

You should understand Multiservice Switch network architecture.

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Component and attribute overview

After reading this chapter, you will have a good understanding of what components are and how they work to provide Nortel Multiservice Switch functionality. You will understand that components are defined by their elements, and that a hierarchy tree dictates their functionality.

An analogy that relates components to an automobile has been included as an aid to help you appreciate relationships between components.

For Multiservice Switch-specific examples of components and how they are presented in this document, see Interpreting information in this document (page 21).

What are components?

A large part of Nortel Multiservice Switch system flexibility resides in the extensive use of components in both its design and deployment. A component represents some part of the system which could be a service, a piece of software or a physical hardware component. Virtually every Multiservice Switch subsystem has components. Components are manageable entities, which control Multiservice Switch software, hardware capabilities and access services.

Components provide the infrastructure through which network operators and administrators interact with network elements. Standardized and organized in a highly structured environment, components provide the model for operator interaction with Multiservice Switch.

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All operator commands are addressed to components for:

- provisioning
- monitoring
- maintenance

Provisioning
Provisioning defines, or re-defines, the operating parameters and performance characteristics of Nortel Multiservice Switch nodes. To initialize a Multiservice Switch service or capability, components specific to that service or capability must be provisioned. Components can also be added automatically when a parent component is added. Frequently, when a component is added, default values are added automatically.

Monitoring
Monitoring components means to observe the operating parameters and performance characteristics of Nortel Multiservice Switch nodes.

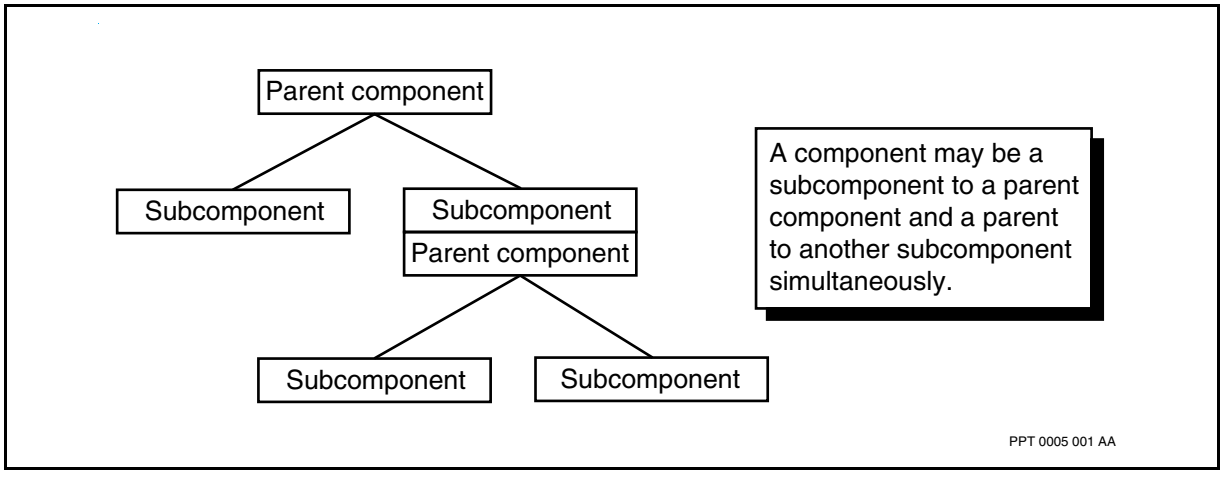
Maintenance
Maintenance means taking components out of service or re-defining their operating characteristics to perform troubleshooting or corrective procedures.

Component hierarchy tree

Components are arranged into hierarchies. A hierarchy is a tree-like structure that defines relationships between the individual components. Through this structure, a functional relationship is developed between each of the components that combine to form Nortel Multiservice Switch systems.

By their relative positions in the hierarchy, components have their parent components and subcomponents defined. A component can have another component below it in the hierarchy. They are called subcomponents. Subcomponents have all the normal characteristics of components and they have a parent component.

How components form into parent and subcomponents by their relative positions



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Components form the building blocks of network functionality. Everything that makes up a component has a responsibility to perform a task. Components combine to form components.

Component terms and concepts

Before continuing, you should be familiar with the following terms and concepts:

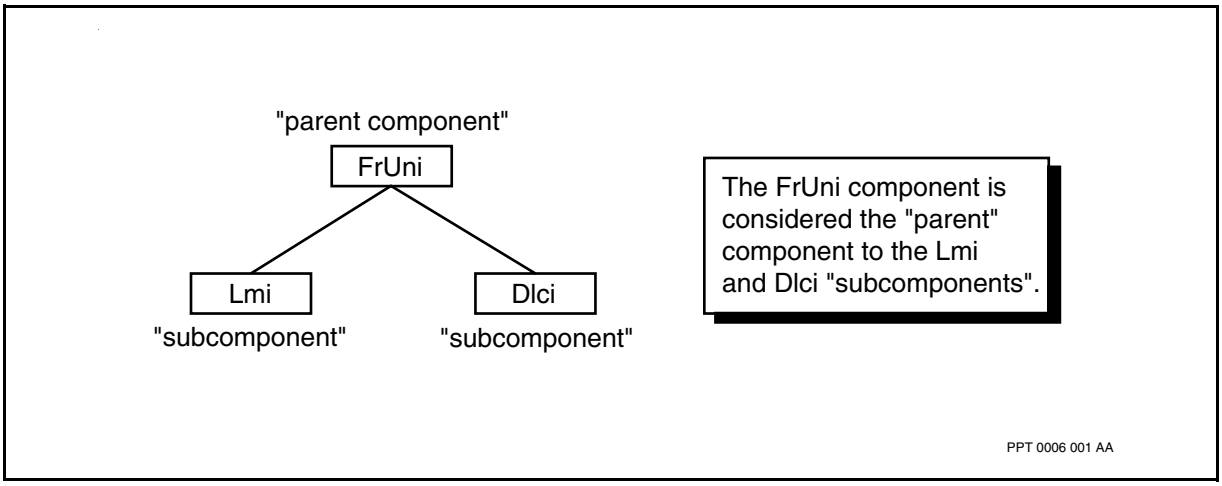
- components and subcomponents
- type
- instance
- name
- verbs
- attributes
- group

Components and subcomponents

Throughout this documentation set, you may have noticed the terms components and subcomponents. Subcomponents and components have the same properties, “sub” indicates the component’s relative position within the hierarchy. In some cases, components may have operational influence over their respective parent and subcomponents. They are the method for indicating the behavior of some functionality in Nortel Multiservice Switch systems.

An example is the Frame Relay User to network interface (FrUni) component, the LocalManagementInterface (LMI) component and the DataLinkConnectionIdentifier (Dlci) component. All three are components but the LMI component and the DLCI component are considered subcomponents of the FrUni component.

The FrUni is the “parent component” to the Lmi and Dlci “subcomponents”



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Type

A component type refers to a specific type of component such as the Frame Relay user-to-network interface (FrUni) component.

An example of a component type is simply, FrameRelayUni. Note the component type does not specify a value or instance of a particular instance of FrameRelayUni running on the node.

Instance

When more than one of a component type exists, they are differentiated by an instance value. The instance value is information (such as a decimal or a string) appended to the component type. The component instance is separated from the type by a slash. When only one instance of a component exists on the node, the component is identified by its type, that is, without a slash (/) and instance value.

Example 1
The component FrUni/4 Dlci/7 refers to Dlci instance 7 under FrUni instance 4.

Example 2
There can be only one instance of the Lmi subcomponent for each instance of the FrUni component and as such, Lmi instance values are not required (for example FrUni/3 Lmi).

Name

The component name combines the component type with the instance. Every component has a name. A component name is constructed by the concatenation of several component/instance pairs.

Example 1
By adding the component instance 4 to the component type FrameRelayUni (FrUni), we get:

FrUni/4

Example 2
A sequence of more than one component type and instance pairs is also a component name, such as:

FrUni/4 Dlci/7

Each type-instance part in the sequence is a subcomponent of its predecessor. In the above example, the Dlci component is a subcomponent of FrUni parent component.

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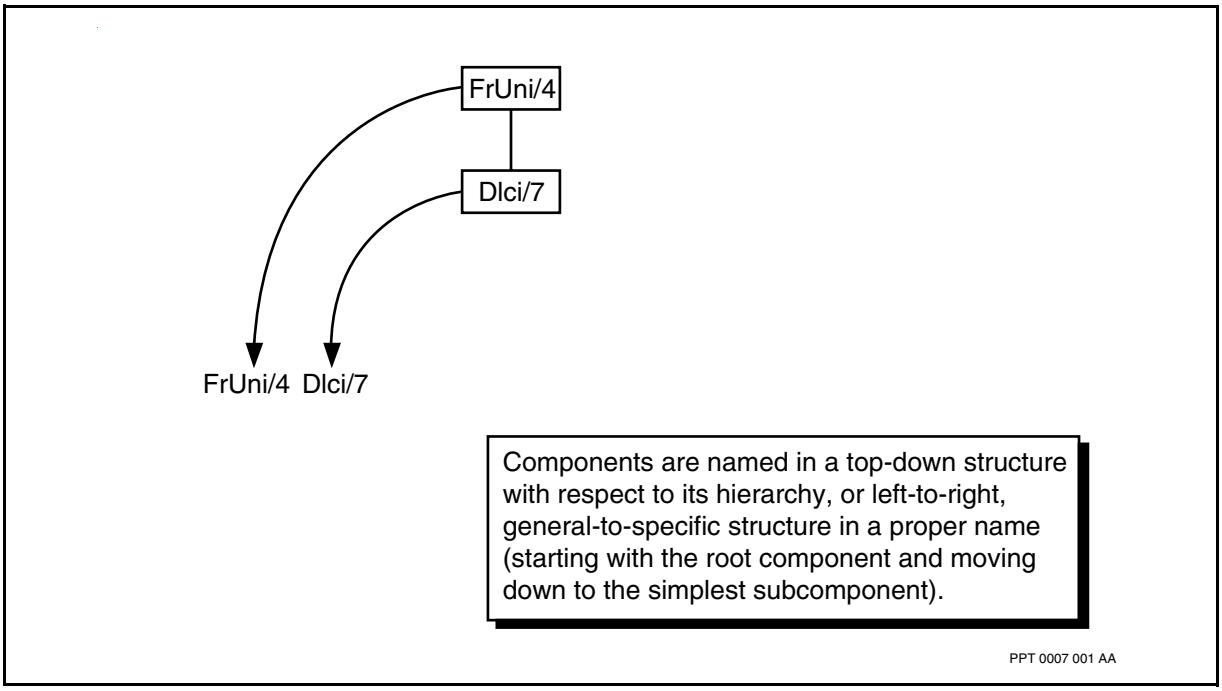
How the naming methodology mirrors the component hierarchy tree



Note that in some cases where there can be only one instance of a component (for example, Shelf), the component appears without an instance value.

Verbs

Verbs are commands issued to Nortel Multiservice Switch components. Commands carry out tasks necessary to provision, maintain and operate your node. Verbs are the action portion of the command.

Within Multiservice Switch systems are a number of verbs that can be issued to all components. These are called common verbs and are described in NN10600-050 *Nortel Multiservice Switch 7400/15000/20000 Command Reference*.

In addition to common commands, there exist a number of commands which are specific to particular subsystems and their components.

Attributes

Components have attributes that define the behavior or informational aspects associated with a specific component. Attributes are either:

- operational
- provisionable

  Note: Components with operational attributes may also have provisionable attributes.

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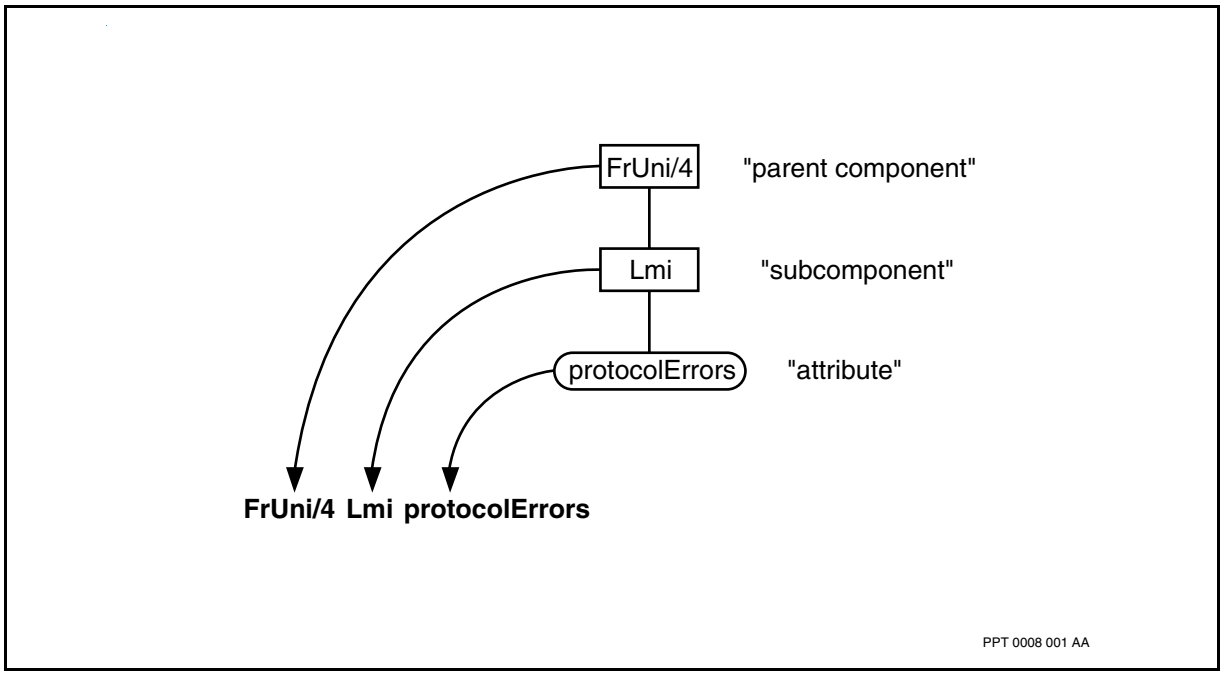
Operational
Operational attributes provide information or data used for monitoring the operation of Nortel Multiservice Switch networks and services. The values of operational attributes are not retained across system restarts. These values can not be provisioned, but some of them can be set. These attributes include information such as:

- component OSI management state
- statistical data

For example, the Frame Relay LocalManagementInterface (Lmi) component with protocolErrors attribute is used to determine if, and how many, Lmi protocol errors have taken place within a given time frame. The Lmi component with this attribute is shown in the figure,The Lmi component with protocolErrors attribute (page 11).

The Lmi component with protocolErrors attribute



Provisionable
Provisionable attribute values can be configured by the network operator or administrator so that Multiservice Switch subsystems or services perform or behave in a certain manner. All components which are provisioned are saved across system restarts. Some components with provisionable attributes are mandatory and are created automatically by their parent. Components with provisionable attributes can also have operational attributes.

For example, the Frame Relay DataLinkConnectionIdentifier (Dlci) component with committedInformationRate (cir) attribute is used by the operator to specify the committed information rate (the rate at which the system will perform data transfer under normal conditions) in bits per second.

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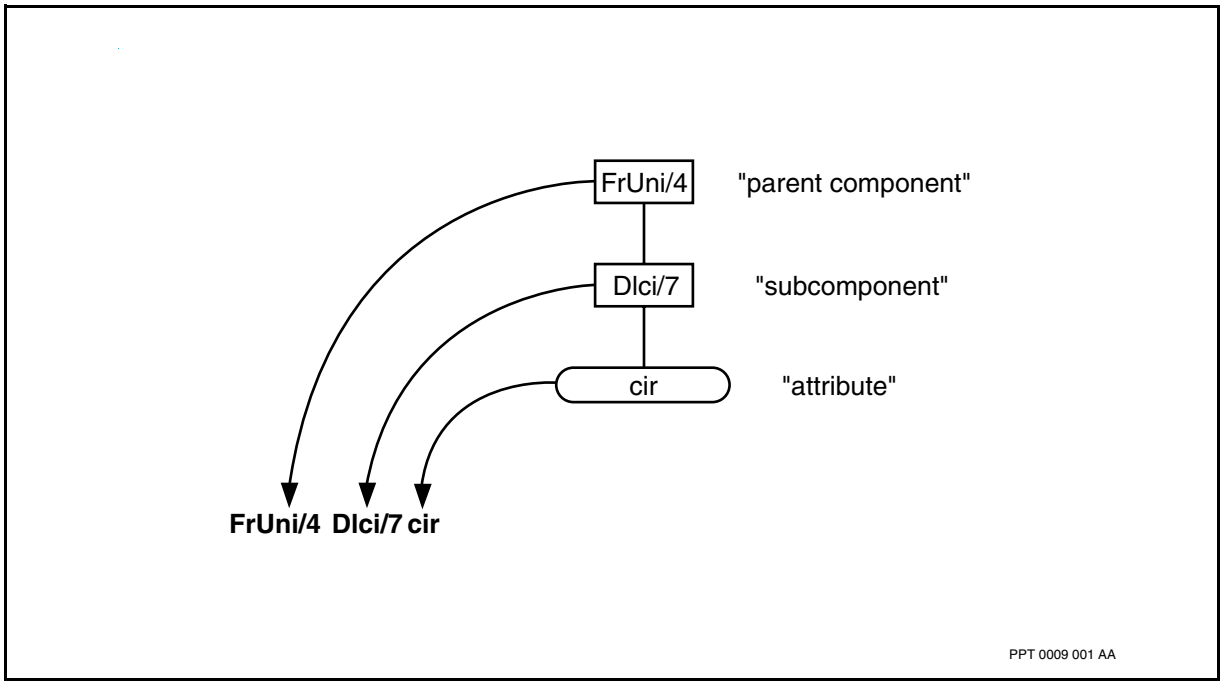
The Dlci component with the cir attribute set



Groups

The attributes of a component are divided into one or more groups whose members share similar characteristics. The characteristics that may be shared could include operating characteristics, or will define whether the attribute was operational or provisionable.

An example of a group is all the provisionable attributes of the Frame Relay DataLinkConnectionIdentifier (Dlci) component. The name of this group is FrsDataLinkConnectionIdentifierProv.

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The attributes in this group include:

- maximumFrameSize
- committedInformationRate
- committedBurstSize
- excessBurstSize
- measurementInterval
- rateEnforcementAdaptation

Each of the above attributes relates specifically to the configuring of the DataLinkConnectionIdentifier. You set these attributes when you provision the Frame Relay service.

Component hierarchy - An everyday analogy

To help define components in everyday terms, think of the parts, or components if you will, that make up your automobile. For the sake of explanation, think of your car as being made up of the following main pieces, or components:

- interior
- body
- engine
- chassis

These four components are the subcomponents that make up the parent component, that being your car as a whole. This two level hierarchy can be represented by the hierarchy diagram. The car, like every car on the road, was assigned a license plate (or in component terms, an instance value) of 0Z1840. The license plate sets your car apart from all of the other cars which are virtually identical to it.

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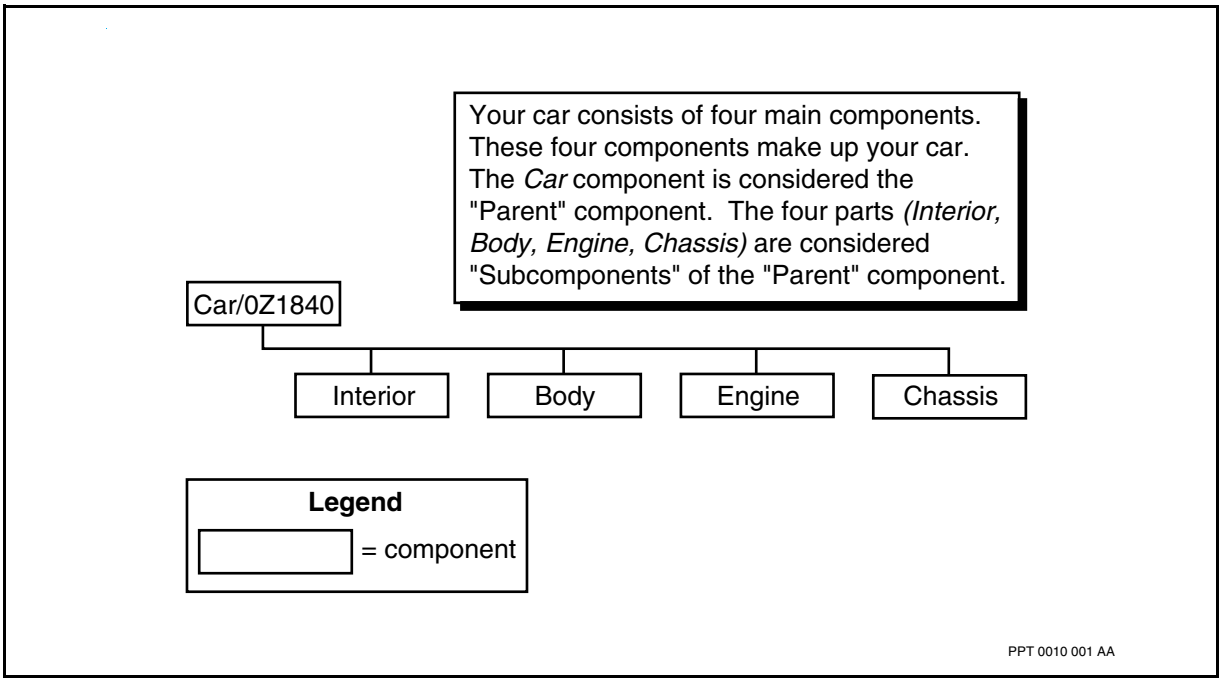
The first level breakdown of the component hierarchy that is your car



Note that the use of the terms parent component and subcomponent will alternate as each level of the hierarchy is described. This is because these terms describe the relative position of the components as they relate to the hierarchy. What was considered a subcomponent at a higher level in the hierarchy would now be considered a parent component of the subcomponent.

At this point the car's components can be properly named. The names are:

- Car/0Z1840
- Car/0Z1840 Interior
- Car/0Z1840 Body
- Car/0Z1840 Engine
- Car/0Z1840 Chassis

Now let's examine the subcomponents that make up the "Interior" parent component. What was the subcomponent "Interior" is now the parent to these subcomponents:

- dashboard
- steeringwheel
- seat/driver
- seat/passenger

Notice that the Seat components were assigned instance values. This is because both seats are identical and the instance value differentiates them.

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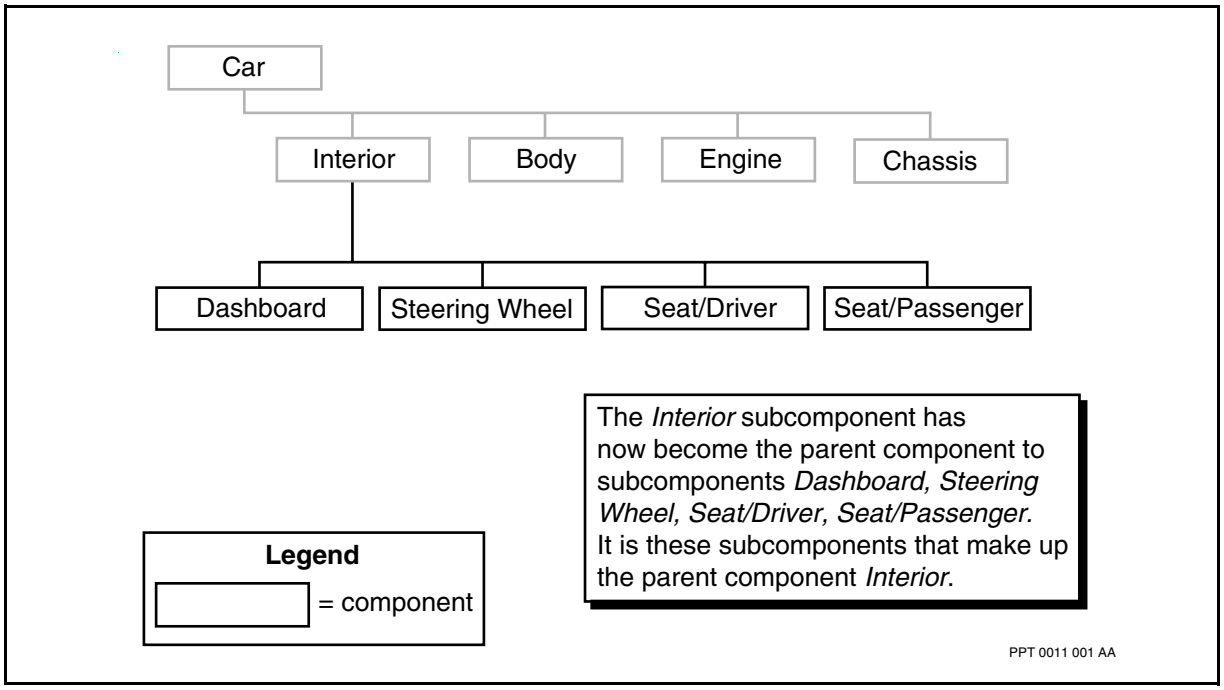
The second level breakdown of the Interior component



The components that make up the car's interior (as properly named) include:

- Car/0Z1840
- Car/0Z1840 Interior
- Car/0Z1840 Interior Dashboard
- Car/0Z1840 Interior SteeringWheel
- Car/0Z1840 Interior Seat/driver
- Car/0Z1840 Interior Seat/passenger

If we examine the subcomponent dashboard, we notice that it has two subcomponents. These subcomponents include:

- radio
- speedometer

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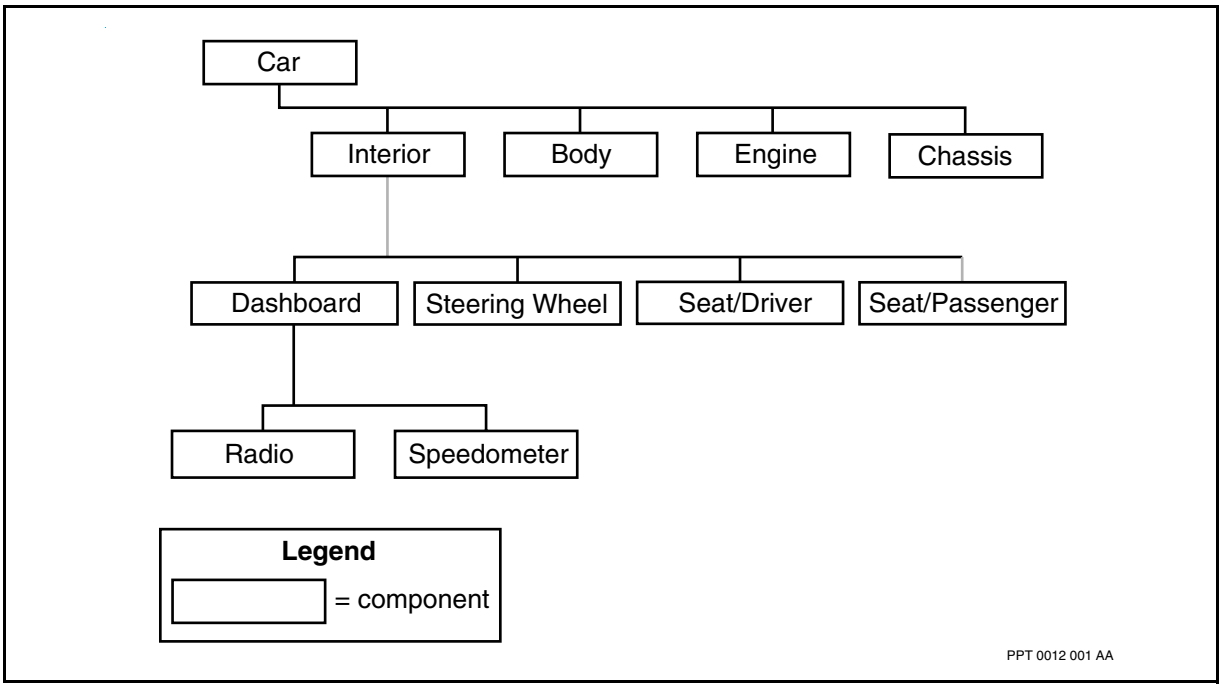
The third level breakdown of the dashboard component



Assigning attributes

At this stage of our analogy we will assign attributes to those subcomponents that make up the Dashboard parent component.

Radio

To change the station on a car radio you must manually adjust it to obtain the preferred frequency. Many car radios have radio station presettings so you do not have to adjust the receiver's settings to a different frequency when you would like to listen to a different station, you just push a button. These preset stations must be previously provisioned. In our example, we have provisioned three preset receiver frequencies on our radio. These presettings are subcomponents of the Radio parent component. The frequencies are the provisionable attributes of the subcomponents. The three settings are given instance values which define what kind of music each station plays.

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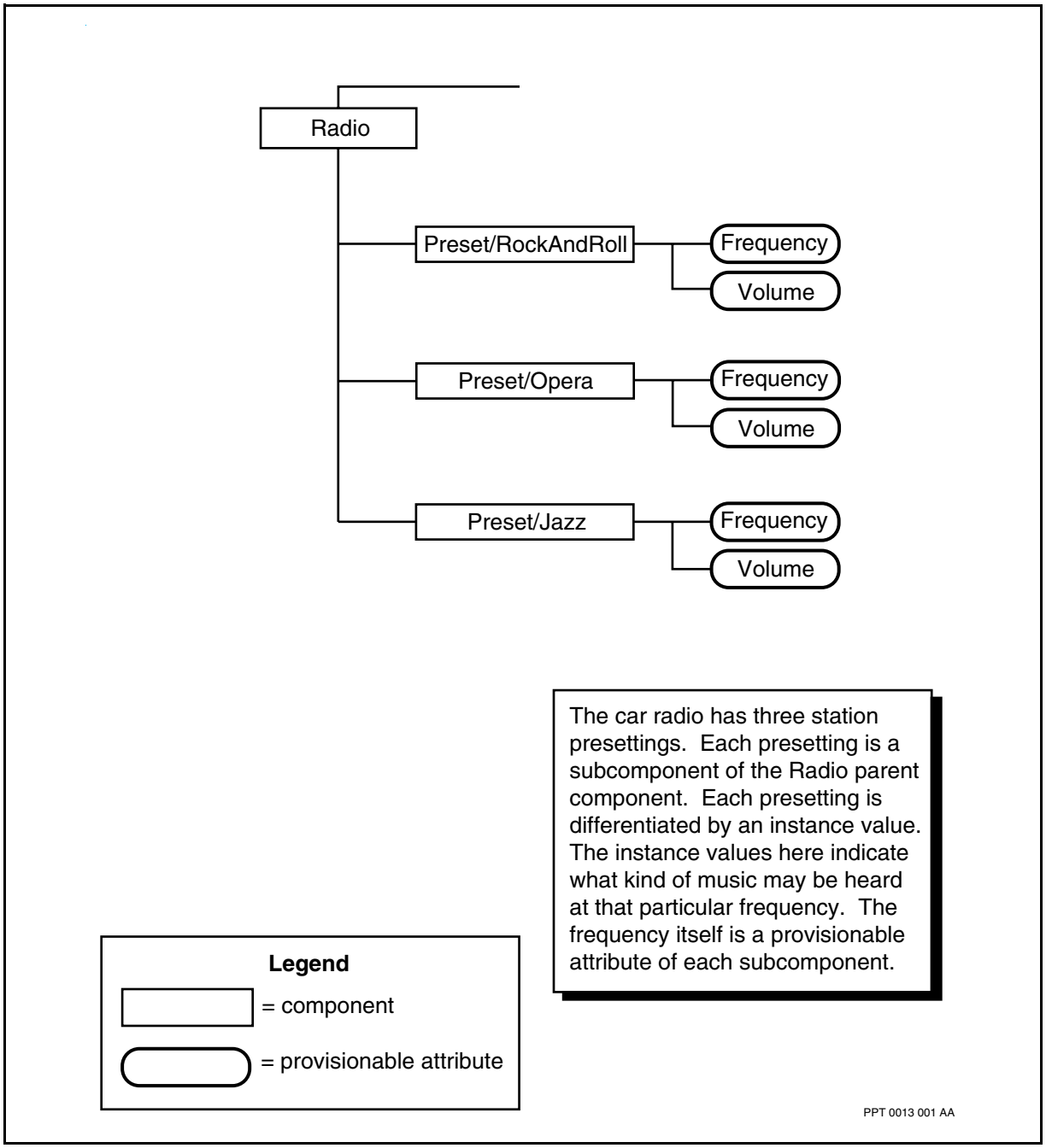
The radio has three station presettings whose frequency must be provisioned



Speedometer

The speedometer tells you how fast the car is travelling. The speed can not be set using the speedometer. When the car is not operating the speed is reset to zero. You may only utilize the speedometer when the car is operating and you can not influence

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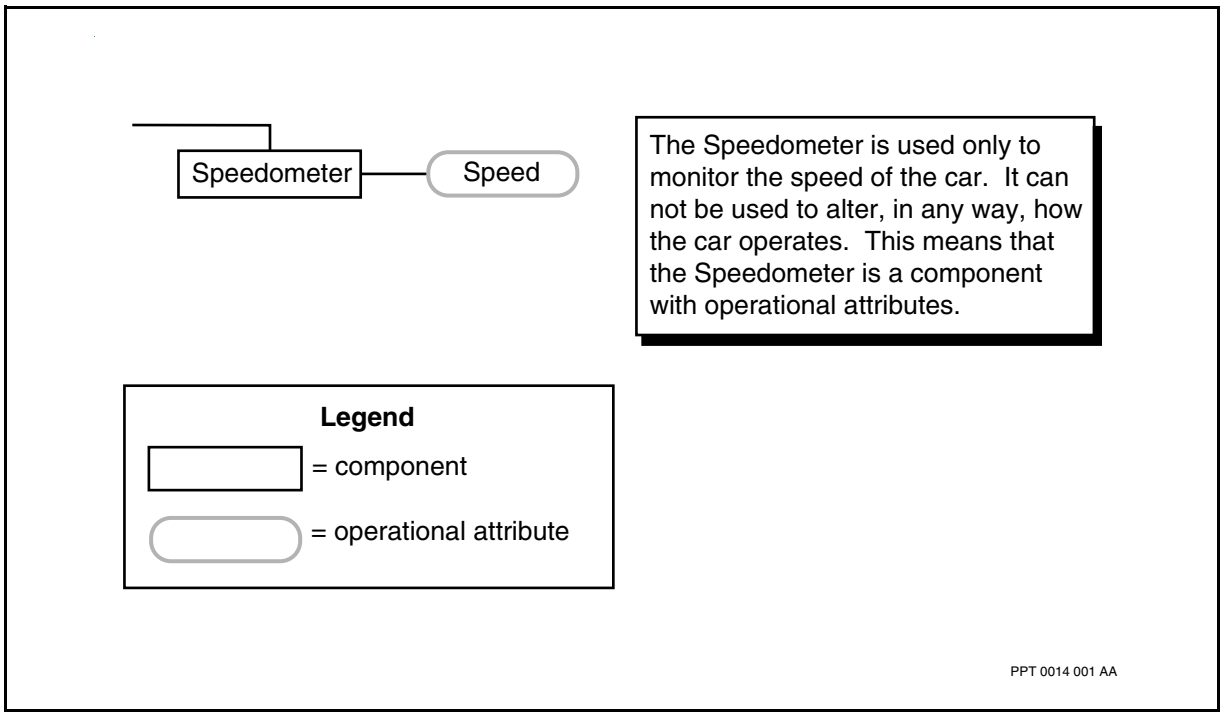
the car's speed through the speedometer component. It is because of these points, that makes the speedometer a component with *operational* attributes. The attribute tells you the car's speed only and nothing else.

As you can only use the Speedometer to monitor your car's speed, it is a component with operational attributes



Applying naming conventions to the analogy

Component names consist of all components and subcomponents, each with an instance value. To apply this rule see the examples.

Example 1

The Radio parent component's station setting can be described visually.

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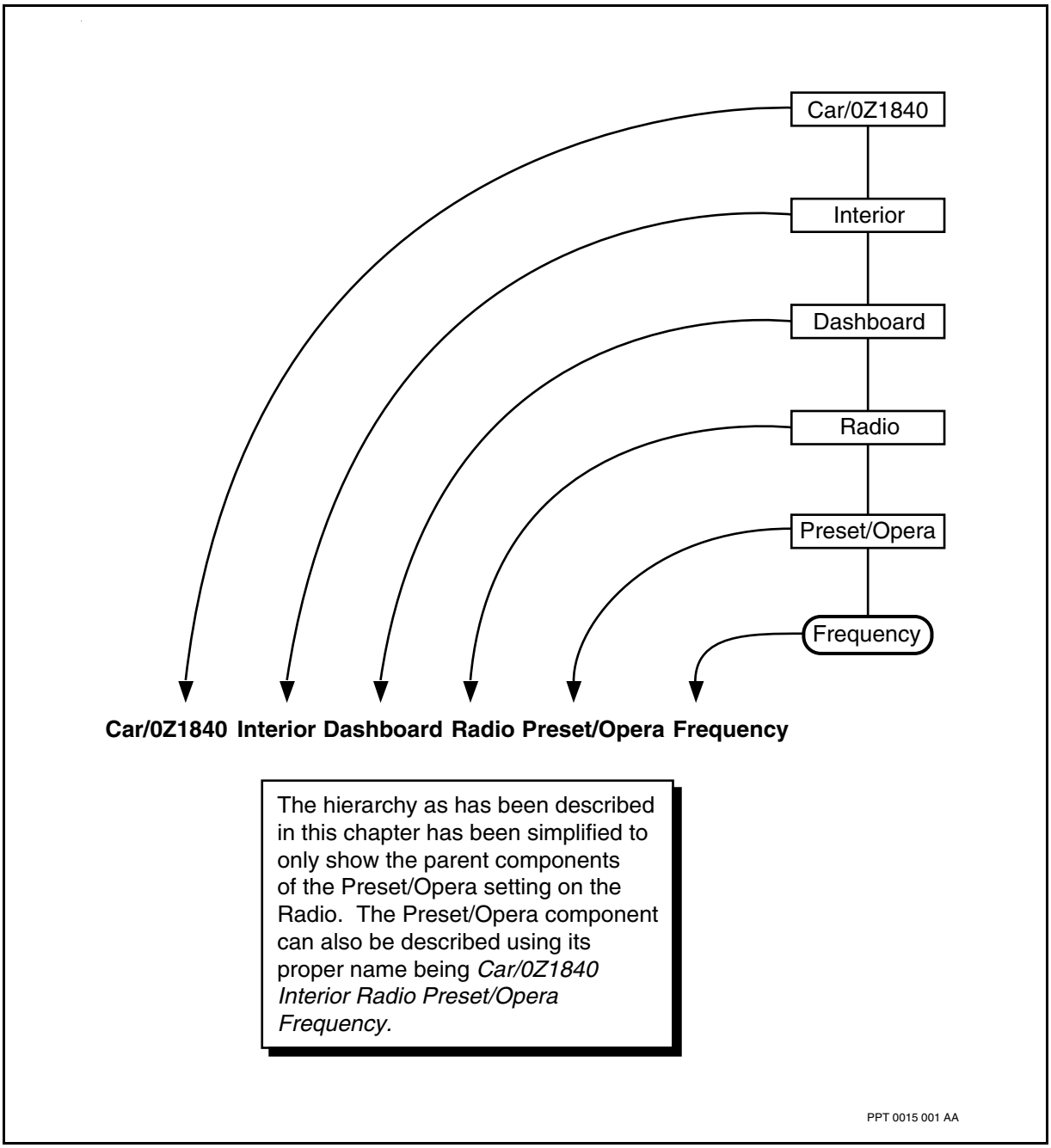
How the frequency attribute for the Opera radio station is named



Example 2
The proper name for the Jazz radio station frequency component would be:

Car/0Z1840 Interior Dashboard Radio Preset/ jazz

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The point to understand here is that there can be many variations of a similar theme. The instance values distinguish one variation from the next, even though they may appear to be virtually identical.

Example 3
The name of the Speedometer component would be:

Car/0Z1840 Interior Dashboard Speedometer

As this component is operational, the component shows the speed our car is travelling at.

Chapter summary

This chapter described components and the hierarchical nature that structures their existence. The way in which Nortel Multiservice Switch systems are made up of component building blocks, and the way that each component block contributes to the system functionality, was also described. An analogy relating Multiservice Switch hierarchy to that of an automobile was included to help you better understand the component hierarchy. This chapter forms the basis of component understanding so that you may use the remaining chapters of this document confidently.

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Interpreting information in this document

How this document is organized

Each Nortel Multiservice Switch product subsystem has its own chapter in this document and each is described by means of:

- a hierarchical table of contents which provides an abbreviated component description
- a formal component description

This chapter contains a description of both.

Abbreviated component description

The abbreviated component description lists components, groups, verbs (including options and responses) and attributes. These are designed to make it easy to locate the operational and provisionable parameters of the component you require.

The abbreviated component description levels which reflect the hierarchical structure of the components. This list explains each type of level and provides an example.

- root component

  This is the top level element in the component hierarchy, for example, the enterprise module (EM).

- component

  A component, for example, Collector (Col), can be subcomponent of the root component or of another component. Nortel Multiservice Switch systems accepted abbreviation is displayed in brackets.

- group

  This level divides the attributes into groups that share similar characteristics. An example, Provisioned (Prov) is a group containing all the provisionable attributes of the Collector component.The abbreviation for the group name is displayed in the brackets.

- attribute

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This level names the attribute, for example, agentQueueSize (agentQ). The abbreviation of the attribute's name is shown in brackets.

- verb

  In addition to the common verbs that may be applied to a component, there may component specific commands that only apply to certain components, for example, newfile. The abbreviation of the verb is found in brackets.

Formal component description

The formal component description is similar to the abbreviated component description but contains more information. The formal component description defines components in terms of:

- a description of the specific component
- the specific component's attributes
- the specific component's verbs

This document covers all of these aspects for component as a section before describing another component. This description can be visualized using the diagram.

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The detailed information is contained in information modules. These modules include:

- components
- attributes
- verbs

The component section presents the component from a high level similar to the abbreviated component description. The attribute section describes the attributes that apply to the component. The verb section describes each verb that may be used on the component.

It should be noted that not every component includes all the fields of information as described in this chapter. If the component you are researching is missing one or more fields, then those missing fields do not apply to that particular component.

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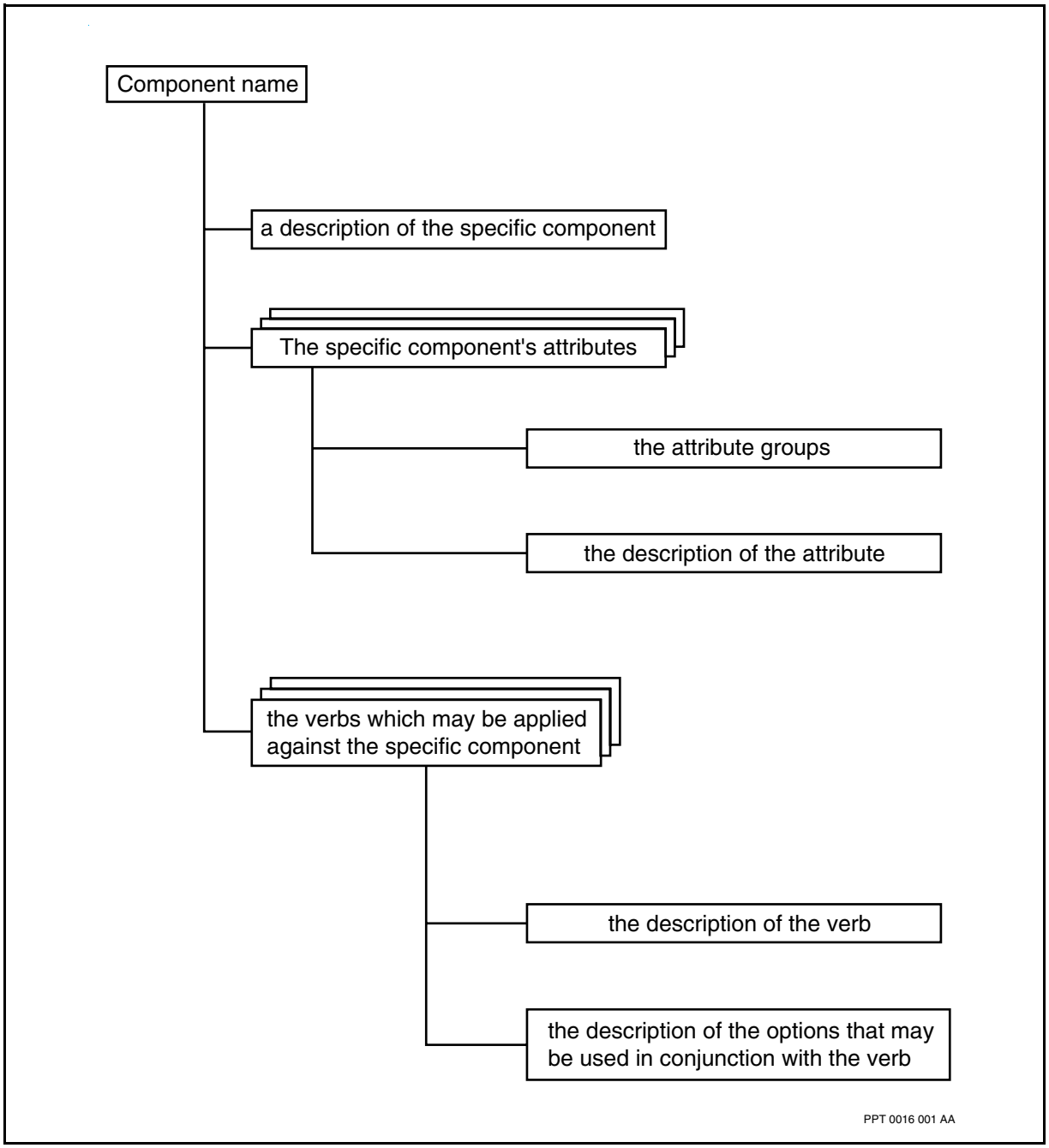
How this document modularizes the details of each Multiservice Switch component



Components

The component description section provides a high-level description of the component.

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This field...	Contains...
COMPONENT	This names the component being detailed
Groups	This lists the attribute groups defining the data for a component type.
Scope	This states the level of operator capability required to access or change components of this type.
Opt. Subcomp.	This states the optional components which must be added or provisioned by the user.
Subcomponents	This states the subcomponents that are created automatically when the parent component is created.
Dyn. Subcomp.	These are the non-provisionable (operational) subcomponents.
Dyn. Opt. Subcomp.	These are the subcomponents which may have optional or dynamic instances.

Attributes

Attributes in this document are covered in terms of two levels:

- attribute groups
- attribute descriptions

Attribute groups

Attributes are organized into attribute groups. Attributes in a particular attribute group share similar characteristics.

This field...	Contains...
GROUP	Identifies the group to which the following attributes belong.
Properties	This specifies whether the attribute is provisionable or operational.

Attribute descriptions

At this level the attributes are described in detail.

This field...	Contains...
ATTRIBUTE	This is the attribute being described.

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This field...	Contains...
Criticality	This defines the disruption to the service that will occur if the attribute's value is changed. NONE - The attribute's value can be changed without causing any disruption to the service. PROCESS - One of the attribute's parent components, and all of that component's subcomponents will be taken out of service. To determine the specific component you must run checkprov. COMPONENT - The attribute's parent component and all of the component's subcomponents will be taken out of service. MODULE - The module will reload once a change is made.
Access	This states whether the component is write only, read only, read and write, or none.
Default	This states the attributes assigned default value.
Values	This specifies the attribute's data type, that is, the set of values it can assume.

Verbs

Many of Nortel Multiservice Switch components include unique verbs which may be applied against the component. In this document, these component-specific verbs are detailed in their own series of subsections that follow the description of the component's attributes. The verbs are detailed in the following sections:

- verb description
- options
- responses

Each verb is defined. Verb options define operational parameters that may be applied to that verb. Every system response (a message from the system displayed on the network management tool) from the use of that verb follows.

Verb description

The verb description states the verb and the impact.

This field...	Contains...
VERB	This is the verb being described.
Impact	This states the level of operator capability required to use this command.

Options

Verb options are conditions applied to verbs to limit their scope of influence.

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This field...	Contains...
OPTION	This is the verb option being described.

Responses

Responses are messages from Nortel Multiservice Switch indicating that there is a process under execution, or an error was made during provisioning. Responses will also warn you if you attempt something before completing any prerequisites.

This field...	Contains...
RESPONSE	This states the system response resulting from the use of a verb.

Chapter summary

This chapter described how this document presents all the information about Nortel Multiservice Switch components. Described is how each chapter details a specific component using a hierarchy diagram, an abbreviated component description, and a formal component description. How each of these mechanisms is used is included with appropriate examples and diagrams. This chapter instructs you how to use the remainder of this document with confidence.

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Common Verbs

VERB Add (A) **Common**

Impact	Configuration
Description	*Add [-superiors] <component name>* This verb creates a new component (with default attribute values) in the edit view. The operator's session must be in provisioning mode to use this command. Components which are created automatically (for example, when their parent component is added) cannot be "manually" created with the *Add* command. **Options:** *-superiors* If this option is specified and one or more ancestors of the component to be added do not exist, the *Add* command will automatically add the missing ancestor component(s), with default attribute values. If this option is not specified, the *Add* command fails when any of the ancestors of the component to be added do not exist.

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VERB DELete **Common**

Impact	Configuration
Description	*Delete <component name>* This verb removes a component (and all its subcomponents) from the edit view. The operator's session must be in provisioning mode to use this command. When asked to delete any component which is a "required" subcomponent of its parent, either *Delete* will refuse if only a single such subcomponent is possible, or semantic checks will fail if all such subcomponents have been deleted. Components which are created automatically (for example, when their parent component is added) cannot be removed with the *Delete* command. To remove all components (including required ones) whose associated feature has already been removed, use command *Clear -rf Prov* To undo the effect of *Delete*, the *Copy Prov* command may be used.

VERB Display (D) **Common**

Impact	Passive
Description	*Display [-current] [-provisionedData] [-operationalData] [-noTabular] <component name> [<attribute specification>]* This verb obtains the values of (a subset of) the attributes of one or more components. The attribute specification is a list of one or more attribute or group names, separated by commas. If this specification is present, *Display* will show only the requested attributes and/or groups of attributes. If there is no attribute specification, the default behavior of *Display* depends on whether the operator session is in provisioning mode or not. A session in provisioning mode will see the values (in the edit view) of all provisionable attributes. A session not in provisioning mode will see the values (in the current view) of all operational attributes. See below for options to override this behavior. The component name may be "wild-carded" by entering it in the form <component name> <component type>/<pattern> in which case the *Display* command shows attribute values for all subcomponents of the given component name that are of the specified type and that match the pattern. A pattern may contain one or more wildcard (*) characters. An example: display prov view/*.full.* Similarly, the form <component name> * may be used to display attribute values for all subcomponents of the given

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component name. If this form is used, no attribute specification is allowed.

The wild-carded form will produce tabular output (unless the *-noTabular* option was specified). However, if the component has too many attributes, not all will fit in the table. An indication of the attributes not shown will be made. Two possible solutions are to specify fewer attributes explicitly, or to indicate that your screen width is larger than the default of 79. This can be done as shown in this example:

```
1> me
Nmis Telnet Session/5; userid = x
Impact = service; Scope = device;    CustomerId = 0

2> set nmis tel ses/5 screenWidth 131
Nmis Telnet Session/5
ok 1995-09-11 12:40:22.35
```

Options:

-current

If this option is specified, the attribute values displayed are those for the current view, even if the operator's session is in provisioning mode. Without this option, the information is retrieved from the edit view if the session is in provisioning mode and the data is provisioned. If the session is in provisioning mode but the data is not provisioned, or the session is not in provisioning mode, the information is retrieved from the current view.

-provisionedData

This option is significant only if no specific attributes or groups have been requested in the *Display* command. If this option is present, all provisioned data of the component will be displayed. Without this option, the provisioned data will be displayed only if the operator session is in provisioning mode.

-operationalData

This option is significant only if no specific attributes or groups have been requested in the *Display* command. If this option is present, all operational data of the component will be displayed. Without this option, the operational data will be displayed only if the operator session is not in provisioning mode.

-noTabular

A wild-carded display (for example, d lp/*) will format information in a tabular style. Long rows may wrap onto several lines and some information may be truncated. In these cases, this option will format information one attribute per line, without loss of information.

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VERB Help (H) **Common**

Impact	Passive
Description	*Help [-verb(<verb>)] [-subcomponents] [<component class> [<attribute specification>]]* This verb provides information about components, attributes, and verbs. A component class is a sequence of component type names. If no component class is entered, *Help* displays the syntax of the *Help* command, a list of top-level component types, and a list of verbs which can be entered without specifying any component name. If a component class is entered, *Help* displays information about the class, including allowed subcomponent types and verbs. The component class may be followed by an attribute specification, which is either an attribute name or an attribute group name. In this case *Help* displays information about the requested attribute or attribute group. **Options:** *-verb(<verb>)* This option specifies the name of a verb for which the user wants to have a detailed description. This verb must be valid for the specified component class. *-subcomponents* This option requests a display of the hierarchy of all subcomponent types under the specified component class.

VERB List (L) **Common**

Impact	Passive
Description	*List [-current] [-provisionedComponents] [-operationalComponents] [<component specification>]* This verb lists the subcomponents of a specified component instance. The component specification can either be a component name, in which case the subcomponents of the named component are listed, or it can have the form <component name> <component type>/<pattern> in which case only the subcomponents of the named component that are of the specified type and whose instances match the pattern are listed. A pattern can consist of one or more wildcard (*) characters. An example: list prov view/*.full.* If the operator session is in provisioning mode, the component instances displayed are those in the edit view, and only provisioned subcomponents are displayed. If the operator session is not in provisioning mode, the component instances displayed are those in the current view, and both provisioned and operational subcomponents are displayed.

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Options:
-current
If this option is specified, the subcomponents listed will be those in the current view. Without this option, the subcomponents listed will be those in the edit view if the operator's session is in provisioning mode and the specified component is provisioned. If the operator is in provisioning mode and the specified component is operational, or the operator is not in provisioning mode, the subcomponents listed will be those in the current view.

-provisionedComponents
If this option is specified, provisioned subcomponents will be listed. Otherwise, provisioned subcomponents will be listed only if the operator session is in provisioning mode and the *-operationalComponents* option has not been specified.

-operationalComponents
If this option is specified, operational subcomponents will be listed. Otherwise, operational subcomponents will be listed only if the operator session is not in provisioning mode and the *-provisionedComponents* option has not been specified.

VERB LOCK **Common**

Impact: Service

Description:

Lock [-force] <component name>
This verb will cause the specified component to enter the OSI ***shuttingDown*** administrative state. While shutting down, the component continues to provide service to existing clients but rejects any new requests for service. In some cases, locking a component also causes all its subcomponents to shut down.

When the component is no longer providing service, it enters the OSI ***locked*** administrative state.

Options:
-force
If this option is present, service to current clients is terminated and the ***locked*** state is entered immediately (that is, without first going through the ***shuttingDown*** state). Without this option, *Lock* behaves as described above.

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VERB Set (S) **Common**

Impact	Service
Description	*Set <component name> <attribute name> <value> [, <attribute name> <value> ...]* This verb changes one or more of a component's attribute values. The syntax for the values depends on the data type of the attribute being set. For multi-valued attributes, such as lists, several values may follow the attribute name. Provisionable attributes can be changed only in the edit view, and only by an operator whose session is in provisioning mode.

VERB Unlock **Common**

Impact	Service
Description	*Unlock <component name>* This verb causes the specified component to enter the OSI ***unlocked*** state.

VERB Find (F) **Common**

Impact	Passive
Description	Find -freelinks(<component class>) [-attribute(<attribute>) [-nonrecursive] [-c] [-p] [-o] [<component name>] This verb returns all provisioned components that are available to be linked to the specified component class. The user can specify a target component name, which will limit the components that are searched. The target component name supports any wildcarding, pattern matching, and value-based filtering that are supported by the list and display commands. Example: Find -freelinks(atmif) lp/* ds3/* **Options**: -*freelinks*(<component class>) This option is mandatory. The *Find* command will return components to which this class can be linked. -*attribute*(<attribute>) This option is required when the component class specified by the -*freelinks* option has more than one settable link attribute. This option designates which attribute will be used by the find command. -*nonrecursive* By default, the find command searches the subtree(s) routed at the target component name. This option indicates that the subcomponents should not be recursively searched.

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-current
If this option is specified, the components returned will be those in the current view. Without this option, the components returned will be those in the edit view if the operator's session is in provisioning mode. If the operator is not in provisioning mode, the components returned will be those in the current view.

-provisionedComponents
If this option is specified, provisioned components will be returned. Otherwise, provisioned components will be returned only if the *-operationalComponents* option has not been specified.

-operationalComponents
If this option is specified, operational components will be returned. Otherwise, operational components will be returned only if the operator session is not in provisioning mode and the *-provisionedComponents* option has not been specified.

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Responses

RESPONSE ..... and ... should not be less than 1 hour apart.

Description

This response is issued when a semantic check is done on a Collector, indicating that this pair of times are too close together. It appears once for each invalid pair of times.

ATTRIBUTE invalidTimeFirstOfPair

Description

This is the first of a pair of times that are too close together.

Values Time (HM)

ATTRIBUTE invalidTimeSecOfPair

Description

This is the second of a pair of times that are too close together.

Values Time (HM)

RESPONSE Error:

Description

This response is issued to show the attribute which is in error on a DCS intra-component semantic error or warning.

ATTRIBUTE attribute

Description This attribute identifies the attribute containing the error.

Values Decimal (0..4294967295)

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RESPONSE Attribute Problem

Description

This response is generated when the node detects a problem with the way the MDM uses an attribute. This can occur for the get, set or help services and action. The actual problem is indicated via related alarms and responses. Some problems are ignored and so multiple such responses are possible for each attribute with a problem.

System action: the command is ignored for this attribute. The command may or may not be executed for other attributes.

Operator action: avoid using this attribute. Update the software on the MDM.

ATTRIBUTE attribute

Description

This parameter identifies, by name, the attribute for which a problem has been detected.

Values

Decimal (0..65535)

RESPONSE Component problem

Description

This error response is generated when the node detects a problem with the way the MDM uses the component name target of a command. The actual problem is indicated via related alarms and responses.

System action: the command fails.

Operator action: avoid using this component. Update the software on the MDM.

ATTRIBUTE component

Description

This parameter contains the valid portion of the component name.

Values

The name of the component

RESPONSE Group problem

Description

This response is generated when the node detects a problem with the way the MDM uses a group. This can occur for the get or help service and action. The actual problem is indicated via related alarms and responses. Some problems are ignored and so multiple such responses are possible for each group with a problem.

System action: the command is ignored for this group. The command may or may not be executed for other groups.

Operator action: avoid using this group. Update the software on the MDM.

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ATTRIBUTE group

Description — This parameter identifies the group, by name, for which a problem has been detected.

Values — Decimal (0..65535)

RESPONSE Option problem

Description — This response is generated when the node detects a problem with the way the MDM uses an option. The actual problem is indicated via related alarms and responses.

System action: the option may be ignored. The other options may be or may not be accessed. If not, the command fails.

Operator action: avoid using this option unless it is mandatory. Update the software on the MDM.

ATTRIBUTE option

Description — This parameter identifies the option, by name, for which a problem has been detected.

Values — Decimal (0..65535)

RESPONSE Fmip command identifier invalid

Description — This error response is generated when an invalid service or action is requested.

System action: the command is not executed.
Operator action: avoid using this command. Update the software on the MDM. The help command can be used to get a list of all verbs (services or actions).

ATTRIBUTE action

Description — This parameter identifies the unrecognized action type. The MDM may or may not be able to convert it to an ASCII name.

Values — Decimal (0..65535)

ATTRIBUTE service

Description — This parameter identifies the unrecognized service. The MDM may or may not be able to convert it to an ascii name.

Values — Decimal (0..65535)

RESPONSE ....

Description

This response describes the attributes specific to an Alarm Event.

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ATTRIBUTE activeListStatus

Description — This mandatory attribute is the active alarm list status. This is equivalent to the DPN-100 Alarm Type field and is used by the NMS to add (on receiving a **set**) and delete (on receiving a **clear**) alarms from the alarm displays.

Values
message (MSG)
set (SET)
clear (CLR)

ATTRIBUTE severity

Description — This mandatory attribute is the severity of the alarm which should indicate what priority that fixing this problem should be given. All values are OSI-defined; refer to CCITT X.733 for a more complete description.

Values
indeterminate
critical
major
minor
warning
cleared

ATTRIBUTE alarmType

Description — This mandatory attribute is the Alarm Type field as defined by OSI which is used to indicate a broad category of what is wrong. The first six values are OSI-defined; refer to CCITT X.733 (for the first 5) and CCITT X.736 (for the last) for a more complete description.

The value ***operator*** is used when an alarm is issued due to an operator command. The values ***debug*** and ***unknown*** are for compatibility with DPN-100 and are used for debugging alarms and for those which do not fit any of the above, respectively.

Values
communications
qualityOfService
processing
equipment
environmental
security
operator
debug
unknown

ATTRIBUTE probableCause

Description — This mandatory attribute is the probable cause for the alarm which usually qualifies the Alarm Type field. Most values are OSI-defined; refer to CCITT X.733 and X.736 for a more complete description. Some Nortel Networks-specific causes are added to be more descriptive in cases where no OSI-defined cause is appropriate.

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Values	lossOfSignal lossOfFrame framingError localTransmissionError remoteTransmissionError callEstablishmentError degradedSignal commSubsystemFailure commProtocolError lanError dteDceInterfaceError responseTimeExcessive queueSizeExceeded bandwidthReduced retransmissionRateReduced thresholdCrossed performanceDegraded congestion atOrNearCapacity storageCapacityProblem versionMismatch corruptData cpuCyclesLimitExceeded softwareError softwareProgramError softwareProgramTermination fileError outOfMemory underlyingResourceUnavailable (underlyingResourceUnavail) applicationSubsystemFailure configurationError powerProblem timingProblem processorProblem datasetModemError multiplexorProblem receiverFailure transmitterFailure outputDeviceError inputDeviceError ioDeviceError equipmentFailure adapterError duplicateInfo infoMissing infoModification infoOutOfSequence unexpectedInfo denialOfService outOfService proceduralError

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otherOperational
cableTamper
intrusionDetection
otherPhysical
authenticationFailure
breachOfConfidence
nonRepudiationFailure
unauthorizedAccess
otherSecurityService
delayedInfo
keyExpired
outOfHoursActivity
enclosureDoorOpen
excessiveVibration
fireDetected
floodDetected
heatVentCoolingProblem
humidityUnacceptable
leakDetected
materialSupplyExhausted
pressureUnacceptable
pumpFailure
temperatureUnacceptable
toxicLeakDetected
operationalCondition
debugging
unknown
inactiveVirtualCircuit
networkServerIntervention
activeVirtualCircuit

ATTRIBUTE ntpIndex

Description	This mandatory attribute is an 8-digit code that is an index into NTP NN10600-230 which provides a more detailed description of the alarm and possible actions to take. The first four digits indicate a “grouping” of alarms (a set of alarms common to a particular subsystem or component, etc.). The last four digits are a subindex arbitrarily assigned by the application which is responsible for the “group”.
Values	BCD (8)

RESPONSE

Description	This response describes the attributes specific to a Log Event.

ATTRIBUTE userId

Description	This mandatory attribute is the user id of the user who issued the command (see **command**).
Values	String (0..8, ASCII)

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ATTRIBUTE sessionSequenceNumber

Description	This mandatory attribute is a numeric session sequence number. A “login” Log and all commands issued during that particular session would have the same sequence number. The next time a user (the same one or a different one) logs in, a new sequence number is used.
Values	Decimal (0..4294967295)

ATTRIBUTE command

Description	This mandatory attribute is the command which was entered by the user.
Values	String (1..255, ASCII)

ATTRIBUTE response

Description	This mandatory attribute is the success/failure indicator of the command which was entered. Note that this is not the full textual response actually received by the user.
Values	String (1..255, ASCII)

RESPONSE

Description	This response describes the attributes specific to a Debug Event.

ATTRIBUTE debugData

Description	This mandatory attribute is the debugging information.
Values	String (0..1024, ASCII)

RESPONSE Accounting Information

Description	This response describes the attributes specific to a Vintage 4 format Accounting Event.

ATTRIBUTE vintage4Data

Description	This mandatory attribute is hexadecimal data which is in the same format as the DPN-100 Vintage 4 accounting record.
Values	String (0..255, Hex)

RESPONSE You have insufficient impact capability to access ....

Description	This error response is generated whenever an operator is prevented from accessing a group or attribute due to insufficient impact capability. **System action**: the command is not applied to the named group or attribute; it may have been applied to other groups or attributes specified in the command. **Operator action**: you must log in using a userid with a higher impact capability in order to access this group or attribute.

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ATTRIBUTE attribute

Description — This attribute contains the name of an attribute which the operator is not permitted to access with this command.

Values — Decimal (0..65535)

ATTRIBUTE group

Description — This attribute contains the name of a group which the operator is not permitted to *Display*.

Values — Decimal (0..65535)

RESPONSE Invalid Software Distribution Site or file access error on the Software Distribution Site.

Description — The *Start Sw Dld* command issues this response when an Application name version, as specified by the *avListToDownload* attribute, could not be found at the site specified by the *-h* option of the command.
This could be caused by one of the following:
- The host IP address specified in the *-h* option of the command does not correspond to a site which contains software compatible with this type of Nortel Networks Multiservice Switch.
- There is a directory or file access error on the Software Distribution Site (SDS).

ATTRIBUTE fileBeingAccessed

Description — This attribute is the name of the file or directory which is being accessed at the time of the error.

Values — String (1..128, ASCII)

RESPONSE File access error on Filesystem.

Description — This response is issued when the download is stopped due to some directory or file access error on the file system of the module attempting the download.

ATTRIBUTE fileBeingAccessed

Description — This attribute is the name of the file or directory which is being accessed at the time of the error.

Values — String (1..128, ASCII)

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RESPONSE Cannot ....

Description

This response may indicate a file system failure.

System action: If the file system error occurred during processing of an operator command, the command terminates (it may have been partly executed).
Operator action: Check that the file system is enabled. If the error occurred during a write or delete operation, check that the named file is not protected. Retry the operator command which produced the error (if applicable). If the problem persists, follow the fault clearing procedures for the file system.

ATTRIBUTE failedOperation

Description

This attribute identifies the operation which failed.

Values

open
read
write
close
delete
swap
protect
unprotect

ATTRIBUTE fileOrDirectory

Description

This attribute indicates whether the file involved was a directory or an ordinary file.

Values

directory
file

ATTRIBUTE fileName

Description

This attribute contains the file or directory name.

Values

String (0..128, ASCII)

RESPONSE Unrecognized attribute identifier: component description mismatch

Description

This warning response is generated when the MDM uses an unrecognized attribute identifier. This can only occur for the get, help or set commands. This response may be repeated for every attribute with this problem. Other attributes are still processed.

System action: the command is ignored for this attribute. Other attributes are still processed.

Operator action: Update the software on the MDM. The help command can be used to list the names of the recognized attributes. Avoid using attributes not in this list.

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ATTRIBUTE attribute

Description — This parameter identifies an attribute, by numeric id, that is not recognized by the node. The MDM may or may not be able to convert it to an ASCII name.

Values — Decimal (0..65535)

RESPONSE Attribute value/index out of range: component description mismatch

Description — This response is generated when the MDM attempts to set an attribute to contain a value or index that is out of range.

System action: the command is ignored for this attribute. Other attributes are still processed.
Operator action: Update the software on the MDM. The help command can be used to list the appropriate value/index ranges.

ATTRIBUTE attribute

Description — This parameter identifies, by name, the attribute for which a problem has been detected. This response may be repeated for every attribute with this problem. Other attributes are still processed

Values — Decimal (0..65535)

RESPONSE .....

Description

This response describes the attributes specific to an Alarm Event.

ATTRIBUTE notificationId

Description — This mandatory attribute is the notification Id of the alarm. The high-order byte is the slot number of the card from which this alarm originated. The low-order 24 bits contain a sequence number which increases each time an alarm is generated. Thus, this Id provides a simple way of uniquely identifying an alarm as well as the order in which alarms are generated on a card. For cross-card ordering, one would have to look at the time stamp (see *dateAndTime*).

Values — Hex (H.0..H.ffffff)

ATTRIBUTE commentData

Description — This optional attribute is additional textual information for the network operator to use. Other than for software alarms, if it is not self-explanatory, it should be described in NTP NN10600-230.

Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values — String (0..750, ASCII)

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ATTRIBUTE operatorData

Description	This optional attribute is additional hexadecimal information for the network operator to use. Other than for software alarms, it should be described in NTP NN10600-230. Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.
Values	String (0..750, Hex)

ATTRIBUTE pid

Description	This optional attribute is a string representation of the internal process id (Pid) of the process which generated the alarm (for internal use only).
Values	String (0..25, ASCII)

ATTRIBUTE fileName

Description	This optional attribute is an internal file name (for internal use only).
Values	String (0..255, ASCII)

ATTRIBUTE relatedComponentNames

Description	This mandatory attribute is a list of the names of any components related to the component (that is, the one in the header FIELD) against which this alarm is raised. It typically contains at least the LP and possibly the card on which the originating component resides.
List of	The name of the component

ATTRIBUTE fileLineNumber

Description	This optional attribute is an internal line number in the file (see *fileName*) referred to above (for internal use only).
Values	Decimal (0..4294967295)

ATTRIBUTE fileVersion

Description	This optional attribute is a version indicator of the file (*fileName*) referred to above (for internal use only).
Values	String (0..255, ASCII)

ATTRIBUTE correlatedNotificatns

Description	This optional attribute is additional internal hexadecimal information for internal use only. It does not have to be described in NTP NN10600-230. It is a list of *notificationId*s which would indicate other alarms which are related to this one. Note that if this is not a MSG alarm, the MDM clears any SET alarms whose *notificationId*s are listed here.
List of	Hex (H.0..H.ffffff)

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ATTRIBUTE internalData

Description — This optional attribute is additional internal hexadecimal information for internal use only. It does not have to be described in NTP NN10600-230 .

Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values — String (0..750, Hex)

RESPONSE The following components have been created:

Description — This is the normal response to an *Add* command. It lists all the components added, including the component specified in the *Add* command, any missing ancestors which were added, and any automatically added subcomponents.

ATTRIBUTE component

Description — This attribute contains the name of a component which has been added. It is repeated for every added component.

Values — The name of the component

RESPONSE Syntax Error

Description — This error response group is generated when an operator inputs a syntactically invalid command. This response is specially formatted to indicate where in the original command, the error occurred.

System action: the command is completely ignored.
Operator action: re-issue the command as appropriate.

ATTRIBUTE term

Description — This attribute contains the symbolic name of the syntactic term in error (for example, “verb”, “option”, “component”, “attribute”, “group”).

The portion of the original input corresponding to this term is indicated via braces.

Values — String (1..255, ASCII)

ATTRIBUTE termStart

Description — This attribute contains the character offset from the start of the command where the symbolic term starts. Given “ABCD”, then “BC” starts at offset of 1.

Values — Decimal (0..1023)

ATTRIBUTE termEnd

Description — This attribute contains the character offset from the start of the command where the symbolic term ends. Given “ABCD”, then “BC” ends at offset 3. This is one character beyond the ending character position.

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Values	Decimal (0..1023)

ATTRIBUTE problem

Description	This attribute contains a description of the problem associated with the term (for example, “missing”, “unrecognized”).
Values	String (1..255, ASCII)

ATTRIBUTE relatedTerm

Description	This optional attribute contains the symbolic name of another syntactic term that is related to the first one. The portion of the original input corresponding to this term is indicated via braces.
Values	String (1..255, ASCII)

ATTRIBUTE term2Start

Description	This optional attribute contains the character offset from the start of the command where the symbolic term starts. Given “ABCD”, then “BC” starts at offset of 1.
Values	Decimal (0..1023)

ATTRIBUTE term2End1

Description	This optional attribute contains the character offset from the start of the command where the symbolic term ends. Given “ABCD”, then “BC” ends at offset 3. This is one character beyond the ending character position.
Values	Decimal (0..1023)

ATTRIBUTE reason

Description	This optional attribute contains the reason the parsing problem occurred.
Values	String (1..255, ASCII)

RESPONSE Component ... already exists.

Description	This error response is generated by an *Add* or *Copy Prov* command if execution of the command would create a component that already exists in the edit view. **System action**: the command is not executed. **Operator action**: in the case of an *Add* command, no action is needed, since the desired component is already in the edit view. In the case of a *Copy Prov* command, retry the command using a different -*destination* option.

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ATTRIBUTE component

Description — This attribute is the name of the component that already exists. It is present only if the component name is different from the component name specified in the command.

Values — The name of the component

RESPONSE Component... does not exist....

Description — This error response is generated whenever the component to which a command applies does not exist.

System action: the command is not executed.
Operator action: for commands which can be applied to either current or edit views of provisioning data, ensure first that the correct view is the view being examined, then retry the command with a valid component name.

ATTRIBUTE component

Description — This attribute contains the name of the missing component. It is present only if the component name is different from the component name specified in the command.

Values — The name of the component

ATTRIBUTE view

Description — The view from which a component does not exists. This attribute is only present for commands that operate on more than one view; for example, the *Display* and *Set* command can specify both operational and provisional attributes.

Values — current
edit

RESPONSE A total of ... components have been deleted.

Description — This is the normal response to a *Delete* command. It contains a count of deleted components.

ATTRIBUTE count

Description — This attribute counts the number of deleted components.

Values — Decimal (0..65535)

RESPONSE The filename specified is invalid.The correct format for activate, apply or load is:...name[.type[.number]]The correct format for a save or commit command is only:...nameThe name...may contain only alphanumeric ...

Description — An *Activate*, *Apply, Commit*, *Load* or *Save* command produces this response when the specified file name has an invalid form.

System action: the command is ignored.
Operator action: retry the command with a valid file name.

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ATTRIBUTE reason

Description — The text describes the format of a provisioning file.

Values — Decimal (0..0)

RESPONSE The above response was generated during loading, when the following command failed:.....

Description — During loading, this response is issued whenever a command from the provisioning data file fails to execute successfully. This should only happen if the *-force* option was used on the *Load* command, or if loading a partial view.

System action: loading is terminated at the point where the error was detected, unless the *-force* option is in effect (in which case loading continues).
Operator action: this response includes the response to the failed command, which can be interpreted in the same way as if the command had been entered manually. If the *-force* option is in effect, the most probable cause of this error is that the file being loaded requires a different software configuration than what is currently running on the Control Processor. Previous output from the *Load* command will have indicated what changes should be made to the software configuration.

ATTRIBUTE command

Description — This attribute contains the command that failed during loading.

Values — String (1..2048, ASCII)

RESPONSE Too many errors loading file ....

Description — This error response is generated when the number of failed commands read from the provisioning file being loaded, exceeds a predefined limit. Note that this limit on the number of failed commands is not enforced if the *-force* option is used in the *Load* command.

System action: the edit view is updated to match the parts of the provisioning data file which were loaded without errors. Loading stops at the point where the error limit was reached.
Operator action: to attempt loading of the entire file, ignoring the error limit, re-issue the *Load* command, specifying the *-force* option.

ATTRIBUTE file

Description — This attribute identifies the provisioning file being read.

Values — String (1..40, ASCII)

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RESPONSE Session..... is in provisioning mode.

Description

This error response is generated when the operator attempts to enter a provisioning command which is allowed outside provisioning mode only when no other session is in that mode.

This includes the following commands: *Activate*, *Commit*, *Confirm*, *Restore*, *Start*, and *Stop*.

System action: the command is ignored.
Operator action: wait until the current provisioning operator is finished. To terminate the other operator's provisioning session, retry the *Start Prov* command using the *-force* option. (Note: if you terminate the other operator's session, the edit view may contain changes made by that operator which have not been saved on disk.)

ATTRIBUTE provisioningSession

Description

This attribute identifies the session which is currently in provisioning mode.

Values

The name of the component

ATTRIBUTE userId

Description

This attribute identifies the user whose session is in provisioning mode.

Values

String (0..8, ASCII)

RESPONSE .....

Description

This error response is generated when a provisioning command is entered and the provisioning system is currently executing a provisioning command.

System action: the new command is ignored.
Operator action: wait for the previous command to complete.

ATTRIBUTE reason

Description

This attribute gives the type of provisioning command that is being executed.

Values

Initial loading is in progress
Activation is in progress
Initial activation is in progress
Roll back sequence is in progress
Save prov command is in progress
Load or Apply prov command is in progress
Check prov command is in progress
You must confirm the edit view changes first, then proceed with the provisioning command
Clear prov command is in progress
Copy prov command is in progress
Commit prov command is in progress
Delete command is in progress

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Confirm prov command is in progress
Add command is in progress
Restore command is in progress

ATTRIBUTE commandPhase

Description — This attribute gives the phase of the command that is currently being executed.

Values — Decimal (0..100)

ATTRIBUTE additionReason

Description — This is an optional attribute which gives the percentage of work that has been finished.

Values — Decimal (0..100)

ATTRIBUTE file

Description — This is an optional attribute. This attribute only shows up when an *apply*, *load* or *save* command is in progress, it gives the name of the file currently being accessed.

Values — String (0..40, ASCII)

RESPONSE Component has no... subcomponents of the requested type....

Description — This message will be generated by a *List* command, or by a *Display* command using a “wild card” specification, if no subcomponents matching the component type specification were found.

ATTRIBUTE reason

Description — This attribute contains the reason explaining why no subcomponents are displayed

Values — provisioned or operational
provisioned
operational

requested

ATTRIBUTE filter

Description — This attribute indicates to the user that their userid does not have the correct scope or cid to list subcomponents.

Values — Decimal (0..0)

RESPONSE Fmip PDU problem

Description — This response is generated when a severe problem has been detected with the fmip pdu.

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ATTRIBUTE notificationId

Description — This parameter contains the notification identifier of the alarm that contains related information as to why the pdu has a problem. It is optional.

Values — Hex (H.0..H.fffffff)

RESPONSE Displaying attribute ... is not allowed.

Description — This error response is generated when the operator attempts to display an attribute for which *Display* is not permitted. Note that this message does not signify that the operator has insufficient impact capability, but rather that no operator is allowed to *Display* this attribute.

System action: none. Any other requested attributes which the operator is allowed to *Display* will have been displayed by the command that produced this message.
Operator action: none.

ATTRIBUTE attribute

Description — This attribute identifies the attribute that cannot be displayed.

Values — Decimal (0..65535)

RESPONSE Setting attribute ... is not allowed.

Description — This error response is generated when the user attempts to set an attribute for which *Set* is not permitted.

System action: the named attribute's value is unchanged. Any other attributes specified in the same command will have been set if the operator is allowed to do so. Note that this message does not signify that the operator has insufficient impact capability, but rather that no operator is allowed to *Set* this attribute.
Operator action: none.

ATTRIBUTE attribute

Description — This attribute identifies the attribute that cannot be set.

Values — Decimal (0..65535)

RESPONSE You must be in provisioning mode to set attribute ....

Description — This error response is generated when the operator attempts to set a provisioning attribute while their session is not in provisioning mode.

System action: the attribute value is unchanged; other attributes, if any, in the *Set* command may have been set.
Operator action: issue a *Start Prov* command before attempting to set any provisionable attribute.

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ATTRIBUTE attribute

Description	This attribute identifies the attribute that cannot be set.
Values	Decimal (0..65535)

RESPONSE Fed problem

Description	A Fed related problem occurred.

ATTRIBUTE problem

Description	The problem with the given fed.
Values	unrecognized missing unexpected corrupt invalid value

ATTRIBUTE type

Description	The recognized Fed Type that has a problem.
Values	fedArray fedArrayItem fedArrayItemValue fedAttribute fedAttributeValue fedBits fedBitSet fedCondition fedComplexFilter fedComponentInstance fedComponentName fedContinuedLogical fedContinuedPhysical fedField fedFieldActionType fedFieldAsciiBuffer fedFieldAsciiLog fedFieldComponentName fedFieldEventType fedFieldGetRequest fedFieldGetResponse fedFieldHeader fedFieldOptions fedFieldResponseError fedFieldResponseErrorAscii fedFieldResponseNormal fedFieldSetRequest fedFieldTime fedFieldTransaction

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fedFlow
fedGroup
fedHasError
fedIdentifier
fedInvalid
fedInvokeId
fedLength
fedList
fedListItem
fedListItemValue
fedModifier
fedNibbles
fedNull
fedOctetString
fedPattern
fedPdu
fedService
fedSigned
fedSimpleCondition
fedString
fedStruct
fedSubcomponent
fedTime
fedType
fedUnsigned
fedValue
fedVersion
fedVector
fedVectorItem
fedVectorItemValue
fedWild

ATTRIBUTE typeId

Description	An unrecognized Fed Type.
Values	Decimal (0..65535)

ATTRIBUTE length

Description	The length of the FedTlv. This attribute is optional.
Values	Decimal (0..65535)

ATTRIBUTE valueUnsigned

Description	The value of a Fed as a DECIMAL when possible.
Values	Decimal (0..65535)

ATTRIBUTE valueHex

Description	The value of a Fed as a hex string.
Values	String (0..255, Hex)

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ATTRIBUTE valueAscii

Description	The value of a FEDas an ASCII string.
Values	String (0..255, ASCII)

RESPONSE The edit view differs from the current view....

Description	This response is generated when a user successfully starts the provisioning session. **System action**: none. **Operator action**: none. This message is for information only.

ATTRIBUTE provCommandInProgress

Description	The presence of this attribute indicates that a provisioning command is still in progress and the end result of this provisioning command will change the number of components added to or deleted from the edit view.
Values	An Activate Prov command is in progress. Initial activation is in progress. A roll back sequence is in progress. A Save Prov command is in progress. A Load or Apply Prov command is in progress. A Check Prov command is in progress. Changes in the edit view have not been confirmed. The Clear Prov command is in progress. The Copy Prov command is in progress. The Commit Prov command is in progress. The Delete command is in progress. The Confirm Prov command is in progress. An Add command is in progress. The Restore Prov command is in progress.

ATTRIBUTE componentAddedCount

Description	This attribute indicates the number of components that have been added to the edit view since the last activation.
Values	Decimal (0..2147483647)

ATTRIBUTE componentDeletedCount

Description	This attribute indicates the number of components that have been deleted from the edit view since the last activation.
Values	Decimal (0..2147483647)

ATTRIBUTE dataChangedCount

Description	This attribute indicates the number of attributes that have been changed in the edit view since the last activation.
Values	Decimal (0..2147483647)

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RESPONSE Error: ...

Description — This response is issued when a semantic check error occurs requiring only a string response.

ATTRIBUTE errorString

Description — This attribute is a string issued as a semantic check error.

Values — String (1..255, ASCII)

RESPONSE The software supporting this component is not loaded.

Description — This response is generated when the MDM uses an unrecognized subcomponent type identifier.

System action: the command fails.

Operator action: Load the software onto the node. Update the software on the MDM. The help command can be used to list the names of the recognized subcomponents. Avoid using components not derived from this list.

ATTRIBUTE component

Description — This parameter contains the valid portion of the component name.

Values — The name of the component

ATTRIBUTE subcomponentType

Description — This parameter identifies the unrecognized subcomponent type. The MDM may or may not be able to convert it to an ascii name.

Values — Decimal (0..65535)

RESPONSE Component instance out of range or invalid syntax: component description mismatch

Description — This response is generated when the MDM uses a component instance value that is out of range or does not have the correct syntax.

System action: the command fails.

Operator action: Update the software on the MDM. The help command can be used to list the appropriate instance value ranges.

ATTRIBUTE component

Description — This parameter contains the valid portion of the component name. The last subcomponent instance which is in error is not shown.

Values — The name of the component

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RESPONSE Unrecognized group identifier: component description mismatch

Description

This warning response is generated when the MDM uses an unrecognized group identifier. This can only occur for the get or help commands. This response may be repeated for every group with this problem. Other groups are still processed.

System action: the command is ignored for this group. Other groups are still processed.

Operator action: Update the software on the MDM. The help command can be used to list the names of the recognized groups. Avoid using groups not in this list.

ATTRIBUTE group

Description

This parameter identifies a group, by numeric id, that is not recognized by the node. The MDM may or may not be able to convert it to an ASCII name.

Values

Decimal (0..65535)

RESPONSE Unrecognized option identifier: component description mismatch

Description

This warning response is generated when the MDM uses an unrecognized option identifier. This response may be repeated for every option with this problem. Other options are still processed.

System action: the option is ignored. Other options are still processed.

Operator action: Update the software on the MDM. The help command can be used to list the names of the recognized options. Avoid using options not in this list.

ATTRIBUTE option

Description

This parameter identifies an option, by numeric id, that is not recognized by the node. The MDM may or may not be able to convert it to an ASCII name.

Values

Decimal (0..65535)

RESPONSE Option value/index out of range: component description mismatch

Description

This response is generated when the MDM attempts to pass an options value or index that is out of range.

System action: the command is ignored for this option. Other options are still processed.

Operator action: Update the software on the MDM. The help command can be used to list the appropriate value/index ranges.

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ATTRIBUTE option

Description — This parameter identifies the option, by name, for which a problem has been detected.

Values — Decimal (0..65535)

RESPONSE Component ... is not ready. Try again later.

Description — This error response occurs when an operator command has been sent to a component, but the component has indicated that it is still initializing and is not yet ready.

System action: the command terminates without having done anything.
Operator action: retry the command later.

ATTRIBUTE component

Description — The name of the component that is not ready. This attribute is present only if the component is different from the one specified in the command.

Values — The name of the component

RESPONSE The semantically checked file ... has an invalid file format.

Description — This response is generated when the specified view has a bad format, for example, the application list and feature set information is missing.

System action: the command is ignored.
Operator action: re-enter the command using a properly formatted file.

ATTRIBUTE file

Description — This attribute is the name of the file that has an invalid file format. A software alarm is also generated by the subsystem SCS.

Values — String (1..40, ASCII)

RESPONSE Help on attribute ... is not allowed.

Description — This error response is generated when the operator attempts to ask for help on an attribute for which *Help* is not permitted. Note that this message does not signify that the operator has insufficient impact capability, but rather that no operator is allowed to query *Help* on this attribute.

System action: none.
Operator action: none.

ATTRIBUTE attribute

Description — This attribute identifies the attribute that cannot be queried for help.

Values — Decimal (0..65535)

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RESPONSE ... .

Description

This response contains the three OSI State attributes and the six OSI Status attributes. It is used in Alarms and SCNs.

The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component that issues alarms or SCNs. For component-specific information and the valid state combinations, refer to the appropriate NTP.

ATTRIBUTE adminState

Description

This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is in administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Values

locked
unlocked
shuttingDown

ATTRIBUTE operationalState

Description

This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Values

enabled
disabled

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ATTRIBUTE usageState

Description

This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Values

idle
active
busy

ATTRIBUTE availabilityStatus

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

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The value ***degraded*** indicates the service provided by the component is degraded in some way such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Set of

inTest
failed
dependency
powerOff
offLine
offDuty
degraded
notInstalled
logFull
migrating

ATTRIBUTE proceduralStatus

Description

If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is

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enabled.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Set of

initializationRequired (initRequired)
notInitialized (notInit)
initializing
reporting
terminating

ATTRIBUTE controlStatus

Description

If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Set of

subjectToTest
partOfServicesLocked (partOfSrvLckd)
reservedForTest (rsrvdForTest)
suspended

ATTRIBUTE alarmStatus

Description

If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding

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against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Set of

underRepair
critical
major
minor
alarmOutstanding (alrmOutstdng)

ATTRIBUTE standbyStatus

Description

If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Values

hotStandby
coldStandby
providingService (providingServ)
notSet

ATTRIBUTE unknownStatus

Description

This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status

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attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure. This could be used, for example, when a “proxy” alarm is issued on the component’s behalf.

Values
false
true

RESPONSE The value of ...

Description
This error response is generated by the *Copy Prov* command when a DNA attribute cannot be copied from the source component to the destination component. Usually this is because doing so would create a duplicate DNA.

System action: the value of the DNA attribute is set to empty (zero length).
Operator action: use the *Set* command to give the DNA attribute another value.

ATTRIBUTE attribute

Description
The name of the attribute that was not copied.

Values
Decimal (0..65536)

Replication
The name of the component

ATTRIBUTE component

Description
This attribute contains the name of the (destination) component whose DNA was set to empty.

Values
The name of the component

RESPONSE The specified verb is ambiguous with ....

Description
The *Help* command generates this error response if the named verb is ambiguous for the given component class.

System action: the command is not executed.
Operator action: re-enter the command, supplying an appropriate verb name.

ATTRIBUTE listOfAmbiguities

Description
This attribute contains the list of verbs which are ambiguous matches with the specified verb.

Values
String (0..255, ASCII)

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RESPONSE The ... verb is not applicable to this component.The component has no readable attributes.

Description — The *Help* command generates this error response if the named verb is the common verb display, and the component definition does not contain any readable attributes.

System action: the command is not executed.
Operator action: use help on the component to display the allowable verbs.

ATTRIBUTE matchedVerbName

Description — This attribute contains the fullname of the verb specified in the command. This lets the user know exactly what the system's interpretation is of any abbreviation or unambiguous string that is specified in the command.

Values — String (0..255, ASCII)

RESPONSE The ... verb is not applicable to this component.The component has no writable attributes.

Description — The *Help* command generates this error response if the named verb is the common verb set, and the component definition does not contain any writable attributes.

System action: the command is not executed.
Operator action: use help on the component to display the allowable verbs.

ATTRIBUTE matchedVerbName

Description — This attribute contains the fullname of the verb specified in the command. This lets the user know exactly what the system's interpretation is of any abbreviation or unambiguous string that is specified in the command.

Values — String (0..255, ASCII)

RESPONSE Loading file ... is aborted.

Description — This response is generated when loading is aborted due to failure in checking the version and feature set information.

System action: View is not loaded.
Operator action: Upgrade the switch's software and retry the command.

ATTRIBUTE file

Description — The name of the view to be loaded.

Values — String (1..40, ASCII)

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RESPONSE No more sequence numbers available for view ... - specify a different name.

Description — This response occurs when the system attempts to generate the next view sequence number (during an *Activate*, *Commit* or *Save*), and the highest possible value (999) is already in use.

System action: the command is not executed.
Operator action: retry the command using a different file name.

ATTRIBUTE file

Description — This attribute identifies the provisioning file which already exists.

Values — String (1..40, ASCII)

RESPONSE Permission denied: you have insufficient scope capability....

Description — This error response is generated whenever an operator cannot access a component due to insufficient scope capability.

System action: the command is not executed.
Operator action: you must log in using a userid with a higher scope capability in order to access this component.

ATTRIBUTE component

Description — This attribute contains the name of the component for which the operator has invalid scope access. It is present only if different from the target component.

Values — The name of the component

RESPONSE Component ...is owned by another customer.

Description — This error response is generated when an operator attempts to access a component owned by another customer.

System action: the command is not executed for this component.
Operator action: none.

ATTRIBUTE component

Description — This attribute contains the name of the component owned by another customer. It is present only if the component name is different from the component name specified in the command.

Values — The name of the component

RESPONSE ... file(s) deleted.

Description — This response is generated when the *Tidy* command is done. It indicates to the user the number of files that have been removed from the provisioning directory.

System action: none. This is an information message only.
Operator action: none.

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ATTRIBUTE count

Description — This attribute is the number of files deleted from the provisioning directory.

Values — Decimal (1..65535)

RESPONSE ... will be kept.

Description — This response is generated when the committed view, current view, last used view, a protected view, or a base view is within the list of views the *Tidy* command is attempting to remove. These views are never removed by the *Tidy* command.

System action: the named view is not deleted.
Operator action: none. This message is for information only.

ATTRIBUTE reason

Description — Describe the type of view not removed

Values —
Committed file
Last used file
Current view file
Protected file
Non-provisioning file
Open file
Base file

ATTRIBUTE fileName

Description — The committed or the last used view name.

Values — String (1..40, ASCII)

RESPONSE ... is not a provisionable component.

Description — The *Save* command generates this response if the operator specifies a component to be saved (via the *-component* option) which is not provisionable. Since *Save* saves only provisioned components, the command is rejected.

System action: the command is not executed.
Operator action: if desired, retry the command, specifying a provisionable component.

ATTRIBUTE component

Description — This attribute contains the name of the component.

Values — The name of the component

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RESPONSE Operational ..... not exist in the edit view. Include the -current option.

Description

The *List* or *Display* commands generate this error response when the user is in provisioning mode and requests information about operational data in the edit view. The response attribute indicates the type of data requested by the operator. Only one type of data will be present.

System action: the command is not executed.
Operator action: issue the list command again with the -current option.

ATTRIBUTE components

Description

The response attribute indicates that the operator attempted to show information about many operational components while in provisioning mode. The operator could have entered one of:
PROV 1> list -o [-p] component
PROV 2> list [-o] [-p] operComponent
PROV 3> display [-o] [-p] operComponent *

Values

Decimal (0..0)

ATTRIBUTE component

Description

This response attribute indicates that the operator attempted to display information about an operational component while in provisioning mode. The operator could have entered one of:
PROV 1> display [-o] [-p] operComponent

Values

Decimal (0..0)

ATTRIBUTE group

Description

This response attribute indicates that the operator attempted to display information about an operational group within provisioning mode. The operator could have entered one of:
PROV> display [-o] [-p] component operGroup

Values

Decimal (0..65535)

ATTRIBUTE attribute

Description

This response attribute indicates that the operator attempted to display information about an operational attribute within provisioning mode. The operator could have entered one of:
PROV> display [-o] [-p] component operationalAttribute

Values

Decimal (0..65535)

ATTRIBUTE data

Description

This response attribute indicates that the operator attempted to display information about an operational data within provisioning mode. The operator could have entered one of:
PROV> display -o [-p] component

Values

Decimal (0..0)

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RESPONSE Help on Group ... is not allowed.

Description — This error response is generated when the operator attempts to ask for help on a group for which *Help* is not permitted. Note that this message does not signify that the operator has insufficient impact capability, but rather that no operator is allowed to query *Help* on this group.

System action: none.
Operator action: none.

ATTRIBUTE group

Description — This attribute identifies the group that cannot be queried for help.

Values — Decimal (0..65535)

RESPONSE The value of ... was not copied to ....

Description — *Copy* can generate this warning when copying part of the current view to the edit view. If a link attribute of a “source” component names a component which does not exist in the edit view, or if the destination component is already linked to something else and it does not support multiple links, the attribute in the copied component is not set.

System action: the link attribute is set to empty.
Operator action: determine the appropriate component to link to. Add this component if necessary, or remove the existing link, then enter a *Set* command to set the link attribute.

ATTRIBUTE attribute

Description — This attribute names the link attribute that cannot be set.

Values — Decimal (1..65535)

Replication — The name of the component

ATTRIBUTE component

Description — This attribute identifies the component containing the named attribute.

Values — The name of the component

RESPONSE Component has no ... data.

Description — This warning message is issued when a *Display* command does not find any data to display for components that have no data. If data is not displayed due to insufficient impact, the invalid impact error response is generated instead.

ATTRIBUTE reason

Description — This response attribute indicates the type of the requested data that could not be found.

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Values	provisioned or operational provisioned operational

RESPONSE Error:

Description	A *Check* command produces this response when two attributes within the same component have incompatible values. **System action**: no *Activate* command will be accepted until a subsequent *Check* completes without errors. **Operator action**: correct the incompatibility between the values of the attributes specified by “attribute” and “conflictingAttribute”, then retry the *Check* command.

ATTRIBUTE attribute

Description	This attribute identifies one of the attributes involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE group

Description	This attribute identifies one of the groups involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE subcomponent

Description	This attribute identifies one of the subcomponent types involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingAttribute

Description	This attribute identifies the other attribute involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingGroup

Description	This attribute identifies the other group involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingSubcomponent

Description	This attribute identifies the other subcomponent type involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE reason

Description	This attribute describes the problem.
Values	String (0..255, ASCII)

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RESPONSE Warning:

Description	A *Check* command produces this response when there is a conflict between the values of two attributes within the same component, but the conflict is not sufficiently serious to prevent activation of the edit view. **System action**: none - the warning has no effect on subsequent commands. **Operator action**: the conflict should be resolved, but not necessarily before activating the edit view.

ATTRIBUTE attribute

Description	This attribute identifies one of the attributes involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE group

Description	This attribute identifies one of the groups involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE subcomponent

Description	This attribute identifies one of the subcomponent types involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingAttribute

Description	This attribute identifies the other attribute involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingGroup

Description	This attribute identifies the other group involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingSubcomponent

Description	This attribute identifies the other subcomponent type involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE reason

Description	This attribute describes the problem.
Values	String (0..255, ASCII)

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RESPONSE Error:

Description	A *Check* command produces this response when two attributes in different components have incompatible values. **System action**: no *Activate* command will be accepted until a subsequent *Check* completes without errors. **Operator action**: correct the incompatibility between the values of the attributes specified by “attribute” and “conflictingAttribute”, then retry the *Check* command.

ATTRIBUTE attribute

Description	This attribute identifies one of the attributes involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE group

Description	This attribute identifies one of the groups involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE subcomponent

Description	This attribute identifies one of the subcomponent types involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingComponent

Description	This attribute identifies the other component involved in the conflict.
Values	The name of the component

ATTRIBUTE conflictingAttribute

Description	This attribute identifies the other attribute involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE conflictingGroup

Description	This attribute identifies the other group involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE conflictingSubcomponent

Description	This attribute identifies the other subcomponent type involved in the conflict.

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Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE reason

Description	This attribute describes the problem.
Values	String (0..255, ASCII)

RESPONSE Warning:

Description	A *Check* command produces this response when there is a conflict between the values of two attributes within different components, but the conflict is not sufficiently serious to prevent activation of the edit view. **System action**: none - the warning has no effect on subsequent commands. **Operator action**: the conflict should be resolved, but not necessarily before activating the edit view.

ATTRIBUTE attribute

Description	This attribute identifies one of the attributes involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE group

Description	This attribute identifies one of the groups involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE subcomponent

Description	This attribute identifies one of the subcomponent types involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingComponent

Description	This attribute identifies the other component involved in the conflict.
Values	The name of the component

ATTRIBUTE conflictingAttribute

Description	This attribute identifies the other attribute involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE conflictingGroup

Description	This attribute identifies the other group involved in the conflict.

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Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE conflictingSubcomponent

Description	This attribute identifies the other subcomponent type involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE reason

Description	This attribute describes the problem.
Values	String (0..255, ASCII)

RESPONSE Warning: Activation will disrupt service for the following component(s):

Description	A *Check* command generates this response to identify the component(s) which will go out of service temporarily if this view is activated. **System action**: None - information message only. **Operator action**: Follow appropriate procedures before activating the view (these could include notification, *Lock*ing of components, etc.)

ATTRIBUTE component

Description	This attribute is used to identify each component which will be taken out of service by an activation (up to a maximum of 200 components).
List of	The name of the component

ATTRIBUTE additional

Description	This attribute states the number of components which will be taken out of service, by an activation, but were not listed by name.
Values	Decimal (0..4000000000)

RESPONSE The committed file is ....

Description	The *Commit* command uses this response to display the name of the committed file. **System action**: none. **Operator action**: none. This message is for information only.

ATTRIBUTE file

Description	This attribute is the name of the committed file.
Values	String (1..40, ASCII)

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RESPONSE The provisioning data is saved in file ....

Description — The *Save* command uses this response to display the name of the file used to save the provisioning data.

System action: none.
Operator action: none. This message is for information only.

ATTRIBUTE file

Description — This attribute is the name of the file created by the *Save* command.

Values — String (1..40, ASCII)

RESPONSE Loaded or applied file ....

Description — The *Apply* or *Load* command generates this message when loading is complete, to display the name of the file loaded.

System action: none.
Operator action: none. This message is for information only.

ATTRIBUTE file

Description — This attribute is the name of the accessed file.

Values — String (1..40, ASCII)

RESPONSE usage: Help [-verb(\...)] [-subcomponents] [\.....[\...[, \...]]]...

Description — This is the normal response to a *Help* command which specifies neither options nor a component class. It consists of a usage description followed by a list of top level components and a list of verbs for which a component name is not mandatory.

ATTRIBUTE subcomponentTypes

Description — This attribute contains a list of all top level component types.

List of — String (0..255, ASCII)

ATTRIBUTE verbs

Description — This attribute contains the names of all verbs for which a component name is not mandatory.

List of — String (0..255, ASCII)

RESPONSE

Description — This is the normal response to a *Help* command which requests information about a specific attribute group.

ATTRIBUTE groupName

Description — This attribute contains the name of the given group.

Values — String (0..255, ASCII)

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ATTRIBUTE groupType

Description	This attribute indicates whether the group being described by this response is provisionable or not.
Values	Operational Provisionable

ATTRIBUTE attributeList

Description	This attribute contains the names of the attributes in the group.
List of	String (0..255, ASCII)

RESPONSE

Description	This is the normal response to a *Help* command which requests information about a specific attribute.

ATTRIBUTE attributePrompt

Description	This attribute contains the name (and abbreviation) of the specified attribute.
Values	String (0..255, ASCII)

ATTRIBUTE readAccess

Description	This attribute specifies the level of operator impact capability required to *Display* the attribute. A value of “not allowed” means that no operator is allowed to *Display* it.
Values	not allowed debug systemAdministration configuration service passive all

ATTRIBUTE writeAccess

Description	This attribute indicates the level of operator impact capability required to *Set* the attribute. A value of “not allowed” indicates that the attribute is read-only, that is, no operator is allowed to *Set* it.
Values	not allowed debug systemAdministration configuration service passive all

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ATTRIBUTE criticality

Description

This attribute displays the criticality of the attribute.

Changing the value of a provisionable attribute with criticality ***none*** does not cause any disruption of service when the change is made effective (by a subsequent *Activate* command).

Changing the value of an attribute with criticality ***component*** will cause the component containing the attribute to temporarily go out of service on an *Activate*.

Changing the value of an attribute with criticality ***parent*** will cause the component containing the attribute, and possibly some of its ancestor components, to temporarily go out of service on an *Activate*.

Changing the value of an attribute with criticality ***parent (set only)*** will cause the component containing the attribute, and possibly some of its ancestor components, to temporarily go out of service on an *Activate.* Adding a new instance of a component containing such an attribute does not cause any component to go out of service.

Values

none
component
parent
module
parent (set only)

ATTRIBUTE type

Description

This attribute contains the type specification for the attribute.

Values

String (0..255, ASCII)

ATTRIBUTE index

Description

This attribute describes the index or indices of the attribute. For a VECTOR or replicated attribute, there will be one index; for an ARRAY there will be two indices; for all other types there will be no indices and this attribute will be omitted from the response.

The description of an index identifies both its type and its permitted values. In the case of an ARRAY index, the name of the index and its abbreviation are included.

Values

String (0..255, ASCII)

ATTRIBUTE values

Description

This attribute identifies the permitted values of the attribute.

Values

String (0..255, ASCII)

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ATTRIBUTE defaultValue

Description	This attribute contains the default value of the attribute.
Values	String (0..255, ASCII)

ATTRIBUTE units

Description	This attribute identifies the units for the values of the attribute.
Values	String (0..255, ASCII)

ATTRIBUTE flags

Description	This attribute lists the flags of an attribute.
Values	String (0..255, ASCII)

RESPONSE

Description	This is the normal response to a *Help* command when the *-subcomponents* option is specified.

ATTRIBUTE hierarchyEntry

Description	This attribute contains the name (and abbreviation) of a subcomponent type, appropriately indented. It will be repeated if there are multiple subcomponents.
Values	String (0..255, ASCII)

RESPONSE

Description	This is the normal response to a *Help* command that requests information about a specific verb.

ATTRIBUTE verb

Description	This attribute contains the name of the given verb.
Values	String (0..255, ASCII)

ATTRIBUTE impact

Description	This attribute indicates the level of operator impact capability required to use the given verb.
Values	debug administration configuration service passive Refer to ReadAccess'ofattribute.' Refer to WriteAccess'ofattribute.'

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ATTRIBUTE mandatoryOptions

Description — This attribute displays the mandatory options of the verb.

List of — String (0..255, ASCII)

ATTRIBUTE options

Description — This attribute displays the options of the verb.

List of — String (0..255, ASCII)

RESPONSE The ... verb is not allowed for this component.

Description — The *Help* command generates this error response if the named verb is a recognizable verb, but is illegal for the given component class.

System action: the command is not executed.
Operator action: re-enter the command, supplying an appropriate verb name.

ATTRIBUTE matchedVerbName

Description — This attribute contains the fullname of the verb specified in the command. This lets the user know exactly what the system's interpretation is of any abbreviation or unambiguous string that is specified in the command.

Values — String (0..255, ASCII)

RESPONSE .....

Description

This response is the List command output.

ATTRIBUTE type

Description

This attribute describes whether the entry found in the directory was a file or a directory.

Values

dir (directory)
file

ATTRIBUTE status

Description

The value of this attribute tells if the file or directory is write protected.

Values

yes (protected)
no (unprotected)

ATTRIBUTE size

Description — This attribute describes the size, in bytes, of the file.

Values — Decimal (0..4294967295)

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ATTRIBUTE timeStamp

Description
This attribute describes the file's last modification time.

Values Time (DHMS)

ATTRIBUTE name

Description
This attribute describes the file's name.

Values String (1..128, ASCII)

RESPONSE ..... is not ... one.

Description The List command generates this error response when the options used in the command conflict with the component type.

System action: the command is not executed.
Operator action: issue the list command again with the correct options.

ATTRIBUTE component

Description This attribute identifies the component. This would happen if the operator entered:
PROV 1>list -o -c provisionedComponent
2>list -o provisionedComponent
PROV 3>list -p operationalComponent
4>list -p operationalComponent

Values Decimal (0..0)

ATTRIBUTE subComponent

Description This attribute identifies the component. This would happen if the operator entered:
PROV 1>list -o -c provisionedComponent/*
2>list -o provisionedComponent/*
PROV 3>list -p operationalComponent/*
4>list -p operationalComponent/*

Values Decimal (0..65535)

ATTRIBUTE group

Description This attribute identified the group whose type conflicts with the options. It could happen if the operator entered:
PROV 1>display -o -c provisionedGroup
2>display -o provisionedGroup
PROV 3>display -p -c operationalGroup
4>display -p operationalGroup

Values Decimal (0..65535)

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ATTRIBUTE attribute

Description — This attribute identified the attribute whose type conflicts with the options. It could happen if the operator entered:
PROV 1>display -o -c provisionedAttribute
2>display -o provisionedAttribute
PROV 3>display -p -c operationalAttribute
4>display -p operationalAttribute

Values — Decimal (0..65535)

ATTRIBUTE dataType

Description — This attribute identifies the type of the component, whether it is provisioned or operational.

Values — an operational
a provisioned

RESPONSE .....

Description — This is the first part of the normal response to a *Help* command which requests information about a specific component.

ATTRIBUTE subcomponentTypes

Description — This attribute contains the types of the top level subcomponents of the chosen component.

List of — String (0..255, ASCII)

ATTRIBUTE componentPrompt

Description — This attribute contains the name (and the abbreviation, if there is one) of the chosen component.

Values — String (0..255, ASCII)

ATTRIBUTE instanceType

Description — This attribute identifies the permitted instance values for the component class. If only one instance of the component is permitted, this attribute is omitted from the response.

Values — String (0..255, ASCII)

ATTRIBUTE existance

Description — This attribute specifies the rules for adding and deleting the component.

A value of ***required*** means that an instance of this component type is added at the same time as its parent is, and there must always be at least one instance of this type present thereafter. This means that where multiple instances of a component type (under the same parent) are permitted, the operator may be allowed to add and delete instances of this component type, provided at least one instance remains when provisioning is complete.

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A value of ***optional*** means that instances of this component type may be added and deleted explicitly by operator commands; there need not be any instance of this component.

A value of ***dynamic*** means that the application software associated with the parent component can add and delete instances of this component type; however the operator is not allowed to do so.

A value of ***dynamic or optional*** means that this component type may have provisioned or dynamic instances. The provisioned instances are any that the operator adds, and they replace any existing dynamic instance with the same instance value. Dynamic instances cannot be deleted by the operator.

Values

required
optional
dynamic
dynamic or optional

ATTRIBUTE scope

Description — This attribute indicates the level of operator scope capability required to access the chosen component.

Values

network
device
application

RESPONSE

Description — This is the second part of the normal response to a *Help* command which requests information about a specific component. It describes one attribute group of the component. If the component has multiple groups, one of these responses will appear for each group.

ATTRIBUTE attributeList

Description — This attribute contains the names of the attributes in the group.

List of — String (0..255, ASCII)

ATTRIBUTE groupType

Description — This attribute indicates whether the group being described by this response is provisionable or not.

Values

Operational
Provisionable

ATTRIBUTE groupName

Description — This attribute contains the name of an attribute group that belongs to the chosen component.

Values — String (0..255, ASCII)

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RESPONSE

Description — This is the third and final part of the normal response to a *Help* command which requests information about a specific component.

ATTRIBUTE verbs

Description — This attribute contains a list of verbs that can be applied to the chosen component.

List of — String (0..255, ASCII)

RESPONSE List ... is full.

Description — This error response is generated when the operator attempts to add a value to a list attribute that already contains the maximum permitted number of elements.

System action: the attribute value is unchanged; other attributes, if any, in the *Set* command may have been set.
Operator action: if desired, remove an element from the named attribute, then retry the original *Set* command.

ATTRIBUTE attribute

Description — This attribute identifies the attribute that cannot be set.

Values — Decimal (0..65535)

RESPONSE

Description — This response is the WorkingDir command output.

ATTRIBUTE pathName

Description — This attribute describes the working directory pathname.

Values — String (1..128, ASCII)

RESPONSE ... ...

Description — This response indicates the RID, MID and PID of an intermediate node in the network visited as the ping query packet was travelling to its destination.

ATTRIBUTE rid

Description — This attribute indicates the RID of the intermediate node that was visited as the ping query packet was travelling to its destination.

Values — Decimal (1..127)

ATTRIBUTE mid

Description — This attribute indicates the MID of the intermediate node that was visited as the ping query packet was travelling to its destination.

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Values Decimal (1..2046)

ATTRIBUTE pid

Description This attribute indicates the process identifier of the intermediate node that was visited as the ping query packet was travelling to its destination. Note that for a Nortel Networks Multiservice Switch, this value is 0.

Values Decimal (0..4294967295)

RESPONSE The specified verb is not recognized....

Description The *Help* command generates this error response if the named verb is not defined for the given component class.

System action: the command is not executed.
Operator action: re-enter the command, supplying an appropriate verb name.

ATTRIBUTE matchedComponent

Description This attribute indicates whether a component was specified or not.

Values by this component

RESPONSE The ... verb requires a component to be specified.

Description The *Help* command generates this error response if the named verb is a recognizable verb, but this verb requires a component.

System action: the command is not executed.
Operator action: re-enter the command, supplying an appropriate verb name.

ATTRIBUTE matchedVerbName

Description This attribute contains the fullname of the verb specified in the command. This lets the user know exactly what the system's interpretation is of any abbreviation or unambiguous string that is specified in the command.

Values String (0..255, ASCII)

RESPONSE Cannot set the ... on another users Session.

Description This error response appears if a user tries to issue a *Set* command on the *dataStreams* attribute of a session other than his own.
The user is prevented from changing someone else's attribute.

ATTRIBUTE attribute

Description This attribute specifies the name of the attribute that cannot be set.

Values Decimal (0..65535)

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RESPONSE Command aborted due to internal error....

Description	This error response is returned when a command has failed due to some internal error such as a software error or engineering error (for example, out of memory). There should be an alarm generated that would indicate the remedial action to perform. **System action**: the command is aborted. It may have been partially executed. **Operator action**: examine the alarm output to determine the nature of the problem and the appropriate action.

ATTRIBUTE notificationId

Description	This attribute is the unique alarm identifier associated with the error. If the alarm ID is unknown, this attribute is omitted.
Values	Hex (H.0..H.fffffff)

RESPONSE The following AV(s) have been removed:

Description	This response is issued to indicate to the user which *AVs* have been removed as a result of a *Tidy* or *Remove c*ommand.

ATTRIBUTE listOfRemovedAvs

Description	This attribute is a list of the names of *AVs* which have been removed.
List of	String (1..30, ASCII)

RESPONSE AV(s) already exist(s):

Description	This response is issued when the user specifies, in the *avListToDownload*, one or more *AVs* which already exist on disk. These *AVs* are not added to the *avListToDownload*.

ATTRIBUTE existingAvList

Description	This attribute is a list of *AVs*, which the user attempted to add to the *avListToDownload*, but which exist already on disk.
List of	String (1..30, ASCII)

RESPONSE

Description	The following describes the attributes of the Test process to be displayed for an automatic test statistics display.

ATTRIBUTE bitsTx

Description	This attribute indicates the number of bits sent during the test period.
Values	Long Integer

ATTRIBUTE bytesTx

Description	This attribute indicates the number of bytes sent during the test period.

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Values Long Integer

ATTRIBUTE frmTx

Description This attribute indicates the number of frames sent during the test period.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Values Long Integer

ATTRIBUTE bitsRx

Description This attribute indicates the number of bits received during the test period.

Values Long Integer

ATTRIBUTE bytesRx

Description This attribute indicates the number of bytes received during the test period.

Values Long Integer

ATTRIBUTE frmRx

Description This attribute indicates the number of frames received during the test period.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Values Long Integer

ATTRIBUTE erroredFrmRx

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame.

For all other card types, this attribute indicates the number of errored frames received during the test period.

Values Long Integer

ATTRIBUTE bitErrorRate

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface.

For all other card types, this attribute indicates the calculated bit error rate on the link derived from the received errored frames and transmitted frames ratio.

Values String (0..5, ASCII)

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ATTRIBUTE elapsedTime

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Values — Decimal (0.00..30240.00)

Units — minutes

ATTRIBUTE timeRemaining

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Values — Decimal (0.00..30240.00)

Units — minutes

RESPONSE Other end already linked to component ....

Description — This error response is generated when the user attempts to *Set* a LINK type attribute, when the remote end is already linked to something, and does not support multiple links.

System action: the LINK attribute is unchanged.
Operator action: if desired, remove the link from the component named in the error response, then retry the original *Set* command.

ATTRIBUTE currentRemoteValue

Description — This attribute contains the name of the component to which the remote end is currently linked.

Values — The name of the component

RESPONSE Loading provisioning data on the standby CP: ...% done.

Description — A *Switchover, Restart,* or *Reset (active cp or lp/0)* command generates this response if the standby CP is still in the process of preloading the provisioning data.

System Action: the *Switchover* or *Reset* command is ignored.

Operator Action: retry the command later. If an immediate switchover is necessary, you may use the *Restart -force Lp/0* or *Reset -force Lp/0* command; however doing so may cause FPs to restart.

ATTRIBUTE percentageDone

Description — This attribute indicates the percentage of the provisioning data loaded onto the standby CP.

Values — Decimal (0..100)

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RESPONSE The software upgrade failed due to a failure in upgrading the standby CP. Failure reason: .....

Description — The Control Processor software upgrade failed because the standby CP failed while being upgraded. Software upgrade is aborted.

ATTRIBUTE pcsString

Description — This attribute may be used to provide further information.

Values — String (0..512, ASCII)

ATTRIBUTE pcsAbortReason

Description — This attribute indicates why the software migration is being aborted.

Values —
Abort reason undetermined
Inserted card type does not match provisioned card type
Card has been inserted into an unconfigured slot
A software error occured
Card failed self tests
Card is not responding
Card has backplane connectivity problems
Card with unsupported PEC code is inserted
Standby Cp crashed
Active Cp crashed
Software downgrade is detected but not supported
Active spared FP crashed
Disk synchronization failed
Migration stopped via stopprov'command'
Standby CP failed to load software with in alloted time

RESPONSE Feature ... must be present in the feature list of at least one Lpt component linked to an Lp in the current view before this provisioning file can be loaded.

Description — A *Load* command produces this response when one or more of the features that appear in the load file are not present in any feature list in the current view. This implies that the software necessary to load some parts of the file is not currently loaded.

System action: the file is not loaded. The edit view is unchanged.
Operator action: Correct the *featureList* attributes of one or more *LogicalProcessorType* components (found under the *Software* component) as indicated by this response. Check, activate and confirm these changes (this will involve a CP reload). Then retry the original *Load* command.
Note: if necessary, the *-force* option can be used to attempt loading of the file. However, syntax errors will likely result, and some components which are present in the file may not appear in the edit view after loading.
A reload -f(<filename>) lp/0 command is another option to load and activate this file.

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ATTRIBUTE feature

Description — This attribute gives the name of a missing feature that must be added, checked and activated before retrying the *Load* command.

Values — String (1..30, ASCII)

RESPONSE Av ... must be present in the avList of the Sw component in the current view before this provisioning file can be loaded.

Description — A *Load* command produces this response when one or more of the Application versions that appear in the load file are not present in the AVL of the current view. This implies that the software necessary to load some parts of the file is not currently loaded.

System action: the file is not loaded. The edit view is unchanged.
Operator action: Correct the *AVL* attribute of the *Software* component by adding the *AV* component as indicated by the response. Check, activate and confirm these changes (this will involve a CP reload). Then retry the original *Load* command.
Note: if necessary, the *-force* option can be used to attempt loading of the file. However, syntax errors will likely result, and some components which are present in the file may not appear in the edit view after loading.
A reload -f(<filename>) lp/0 command is another option to load and activate this file.

ATTRIBUTE applicationVersion

Description — This attribute gives the name of a missing Av that must be added, checked and activated before retrying the *Load* command.

Values — String (1..30, ASCII)

RESPONSE Application ... in the current views avList should be version ... before this provisioning file can be loaded. Versions other than this one may also be acceptable.

Description — A *Load* command produces one of these responses for each application version (AV) in the load file which is incompatible with a currently selected AV.

System action: the file is not loaded. The edit view is unchanged.
Operator action: Correct the *avList* attribute of component *Software* as indicated by this response. Check, activate and confirm these changes (this will involve a CP reload). Then retry the original *Load* command.
Note: if necessary, the *-force* option can be used to attempt loading of the file. However, syntax errors will likely result, and some components which are present in the file may not appear in the edit view after loading.
A reload -f(<filename>) lp/0 command is another option to load and activate this file.

ATTRIBUTE applicationName

Description — This attribute names an application whose *avList* entry must be changed.

Values — String (1..30, ASCII)

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ATTRIBUTE versionName

Description — This attribute indicates the required version of the named application.

Values — String (1..30, ASCII)

RESPONSE Application ... in the current views avList must be at least version ... before this provisioning file can be loaded.

Description — A *Load* command produces one of these responses for each application version (AV) in the load file which is incompatible with a currently selected AV.

System action: the file is not loaded. The edit view is unchanged.
Operator action: Correct the *avList* attribute of component *Software* as indicated by this response. Check, activate and confirm these changes (this will involve a CP reload). Then retry the original *Load* command.
Note: if necessary, the *-force* option can be used to attempt loading of the file. However, syntax errors will likely result, and some components which are present in the file may not appear in the edit view after loading.
A reload -f(<filename>) lp/0 command is another option to load and activate this file.

ATTRIBUTE applicationName

Description — This attribute names an application whose *avList* entry must be changed.

Values — String (1..30, ASCII)

ATTRIBUTE versionName

Description — This attribute indicates the minimum required version of the named application.

Values — String (1..30, ASCII)

RESPONSE The following views or files reference this Av or are corrupted and therefore the Av cannot be removed as requested:

Description — This response is issued to indicate to the user the views (current and/or edit) and/or provisioning files which reference the *A*v that the operator wanted removed. This response can also indicate provisioning files which are corrupted. The result in all cases is that the Av cannot be removed.

ATTRIBUTE listOfFileNames

Description — This attribute is a list of view and/or file names which reference the associated Av (or possibly are corrupted).

List of — String (1..40, ASCII)

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RESPONSE These AV names are invalid and cannot be downloaded:

Description — This response is issued when the user specifies, an Av name in the *avListToDownload*, that has either a missing Application name or a missing Version as part of its name. A valid Av name must consist of both an application name and a version separated by an underscore. These invalid *AVs* are not added to the *avListToDownload*.

ATTRIBUTE invalidAvNameList

Description — This attribute is a list of *AVs*, which the user attempted to add to the *avListToDownload*, but which are invalid names.

List of — String (1..30, ASCII)

RESPONSE ..... and ... should not be more than 12 hours apart.

Description

This response is issued when a semantic check is done on a Collector, indicating that this pair of times are too far apart. It appears once for each invalid pair of times.

ATTRIBUTE invalidTimeFirstOfPair

Description

This is the first of a pair of times that are too far apart.

Values — Time (HM)

ATTRIBUTE invalidTimeSecOfPair

Description

This is the second of a pair of times that are too far apart.

Values — Time (HM)

RESPONSE ... component(s) reported errors.

Description — Cas generates this error response when it encounters errors due to incompatible options while processing a wild-carded command.

System action: the command is partially executed.
Operator action: issue the command again on those components that failed using the correct options.

ATTRIBUTE count

Description — This attribute identifies the number of errors encountered.

Values — Decimal (0..65535)

RESPONSE The Filesystem is full.

Description — This response is issued when the download is stopped due to the local disk of the file system becoming full.

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ATTRIBUTE fileBeingAccessed

Description	This attribute is the name of the file or directory which is being accessed at the time of the error.
Values	String (1..128, ASCII)

RESPONSE There is insufficient disk space for download to continue.

Description	This response is issued when the download is stopped because of lack of disk space that the file system has detected.

ATTRIBUTE fileBeingAccessed

Description	This attribute is the name of the file or directory which is being accessed at the time of the error.
Values	String (1..128, ASCII)

RESPONSE Cannot download data from SDS; possible link failure.

Description	This response is issued when the download is stopped due to a bad read from the data socket. One possible reason for this is that the download connection path has failed.

ATTRIBUTE fileBeingAccessed

Description	This attribute is the name of the file or directory which is being accessed at the time of the error.
Values	String (1..128, ASCII)

RESPONSE The Copy command is not allowed for the ... component.

Description	The *Copy* command produces this response if the *Add* command cannot be applied to the component types specified in the *-source* option. **System action**: the *Copy* command is not executed. **Operator action**: none.

ATTRIBUTE component

Description	This attribute contains the name of the component that cannot be copied.
Values	The name of the component

RESPONSE The following AV(s) would be removed if the Tidy command was issued without the query option:

Description	This response is returned to the user to indicate which *AVs* would be removed if a *Tidy* command (without the *Query* option) was issued.

ATTRIBUTE listOfRemovedAvs

Description	This attribute is a list of the names of *AVs* which would be removed if *the Tidy* command is issued without the query option
List of	String (1..30, ASCII)

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RESPONSE ....

Description

This response is generated when a provisioning command, other than the one entered by the operator, is invoked automatically by the system. For example, if *Activate Prov* is entered by the user, and the Edit View has not been semantically checked, the system will automatically invoke the semantic checker before proceeding with the activate.

System action: another command will be automatically executed as part of the specified one.
Operator action: none. This message is for information only.

ATTRIBUTE command

Description

This attribute gives the type of provisioning command that is being invoked.

Values

Invoking Activate prov command
Invoking Save prov command
Invoking Load prov command
Invoking Check prov command
Invoking Clear prov command
Invoking Copy prov command
Invoking Commit prov command
Invoking Delete command
Invoking Confirm prov command
Invoking Add command

RESPONSE View ... has not been saved in a delta format.

Description

This error response is generated when a user attempts to *apply* a view that has not been saved in a ***delta*** format, that is, the difference between the current and edit views at the time of the *Save Prov.*

System action: the command is ignored.
Operator action: Enter a correct view name.

ATTRIBUTE file

Description

This attribute is the name of the view saved without the ***delta*** format.

Values

String (1..40, ASCII)

RESPONSE The base file ... does not exist. The delta file ... cannot be loaded.

Description

A *Load* or an *Activate* command produces this response when the specified file is a delta file and the base for the delta file cannot be found. The base file for the delta file has been deleted, most likely by a manual operator command entered in error.

System action: the command is not executed.
Operator action: if possible, restore the base file and reissue the *Load* or *Activate* command. Otherwise, use the *Tidy* command to remove the delta file and retry the *Load* or *Activate* using a different view.

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ATTRIBUTE file

Description — This attribute indicates the name of the missing base file.

Values — String (1..40, ASCII)

ATTRIBUTE fileName

Description — This attribute indicates the name of the delta file which could not be loaded.

Values — String (1..40, ASCII)

RESPONSE Saving the ... into ... (with ... formats) ...

Description — This response is generated at the start of saving a view to disk. This can occur with *activate*, *commit* or *save*. Saving can be aborted via *stop*. In certain cases, a single *save prov* command can result in both the current and edit views to be saved.

System action: none.
Operator action: none. This message is for information only.

ATTRIBUTE view

Description — The view from which components are saved onto disk.

Values — current
edit

ATTRIBUTE file

Description — This attribute is the name of the view being saved.

Values — String (1..40, ASCII)

ATTRIBUTE formats

Description — This attribute contains the formats of the provisioning data that are being saved. Refer to the *formats* attribute of the *View* subcomponent for more information.

Set of — ascii
commit
delta
part
portable

RESPONSE In the voiceRates attribute:...

Description — This response is used when the user attempts to set the *voiceRates* attribute to an illegal value. The only rate allowed for ***g711Only*** encoding is 64 kbit/s. The only rate allowed for ***g728Only*** encoding is 16 kbit/s. The only rate allowed for ***g729Only*** encoding is 8 kbit/s. The minimum ***g711G726*** rate must be 32, 24 or 16 kbit/s. The maximum ***g711G726*** rate must be 64, 32, 24 or 16 kbit/s. The min ***g711G726*** rate cannot be greater than the max ***g711G726*** rate.

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ATTRIBUTE errorType

Description — See the description in the response.

Values —
g711Only rates must be 64.0 kbit/s
g728Only rates must be 16.0 kbit/s
g729Only rates must be 8.0 kbit/s
The minimum g711G726 rate must be 16.0, 24.0 or 32.0 kbit/s
The maximum g711G726 rate must be 16.0, 24.0, 32.0 or 64.0 kbit/s.
The minimum g711G726 rate cannot exceed the maximum g711G726 rate

RESPONSE In the modemFaxRates attribute:...

Description — This response is used when the user attempts to set the *modemFaxRates* attribute to an illegal value. The only rate allowed for ***g711Only*** encoding is 64 kbit/s. The minimum ***g711G726*** rate must be 32, 24 or 16 kbit/s. The maximum ***g711G726*** rate must be 64, 32, 24 or 16 kbit/s.The minimum ***g711G726*** rate cannot be greater than the max ***g711G726*** rate. The minimum ***relay*** rate must be 0.0 kbit/s. The maximum ***relay*** rate must be 14.4, 12.0, 9.6, 7.2, 4.8 or 2.4 kbit/s.

ATTRIBUTE errorType

Description — See the description in the response.

Values —
g711Only rates must be 64.0 kbit/s
The minimum g711G726 rate must be 16.0, 24.0 or 32.0 kbit/s
The maximum g711G726 rate must be 16.0, 24.0, 32.0 or 64.0 kbit/s
The minimum g711G726 rate cannot exceed the maximum g711G726 rate
The minimum relay rate must be 0.0 kbit/s
The maximum relay rate must be 14.4, 12.0, 9.6, 7.2, 4.8 or 2.4 kbit/s
The minimum relay rate cannot exceed the maximum relay rate

RESPONSE Error: Command not executed.Component ... does not exist.

Description — The *Start* command produces this response when attempted for a *ServiceTrace* component which has not been provisioned or its receiver specified by *rcvr* attribute has not been provisioned.

System action: The *Start* command has no effect.

Operator action: Check existence of the specified *ServiceTrace* component or *Rcvr* component, enter command again.

ATTRIBUTE componentMissing

Description — This attribute is the component name which has not been provisioned.

Values — The name of the component

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RESPONSE Error: The trace call to the receiver has failed with ..., ...

Description — The *Start* command produces this response when the trace call fails to connect to the receiver.

System action: The service trace session stopped.

Operator action: Check the failure reason according to the values of *clearCause* and *diagnostic*, correct it, enter command again.

ATTRIBUTE clearCause (cause)

Description — This attribute is the trace VC clear cause.

Values — Hex (H.0..H.ff)

ATTRIBUTE diagnostic (diag)

Description — This attribute is the trace VC diagnostic code.

Values — String (1..8, Hex)

RESPONSE You cannot set both operational and provisioned attributes at the same time.

Description — This error response is generated when the operator attempts to set operational and provisioned attributes at the same time, eg,
set component oper 5, prov 7
This is an error because operational attributes only exist in the current view, while provisioned attributes can only be set in the edit view. This would cause two views to be accessed simultaneously.

System action: the entire *Set* command is ignored.
Operator action: issue at least two separate *Set* commands, one for the provisioned attributes, and another for the operational ones.

ATTRIBUTE operationalAttribute

Description — This attribute identifies the operational attribute that conflicts with the provisioned one.

Values — Decimal (0..65535)

ATTRIBUTE provisionedAttribute

Description — This attribute identifies the provisioned attribute that conflicts with the operational one.

Values — Decimal (0..65535)

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RESPONSE Error:This application is incompatible with the value specified by attribute ... of the component ....

Description — This error message appears in response to a *Check Prov* command if the value specified in the identified attribute is incompatible with an application.

System action: The edit view cannot be activated.
Operator action: Choose a different value for the indicated attribute.

ATTRIBUTE valueId

Description — This attribute contains the numeric ID of the attribute whose specified value is incompatible with the application.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE valueComponentName

Description — This attribute contains the name of the component containing the attribute whose specified value is incompatible with the application.

Values — The name of the component

RESPONSE The ... is congested.

Description — This response is returned when either the CP or the first hop of the path to reach the destination is congested.

ATTRIBUTE congestedComponent

Description — This attribute indicates whether the CP or the path is congested.

Values — CP
path

RESPONSE ... packets were sent, ... packets were returned.

Description — This response indicates how many query packets were sent and how many of them were returned. It is used in response to the *-all* ping option. The paths found and their usage follow the response.

ATTRIBUTE numAllPktSent

Description — This attribute indicates how many query packets were sent.

Values — Decimal (1..16)

ATTRIBUTE numAllPktReceived

Description — This attribute indicates how many query packets were returned.

Values — Decimal (1..16)

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RESPONSE Path ... used ... time(s):

Description — This response contains the header line for a particular path used by one or more ping query packets. It is used in response to the *-all* ping option. The path mentioned in the header line follows the response.

ATTRIBUTE pathId

Description — This attribute indicates the identifier of the path which follows.

Values — Decimal (1..16)

ATTRIBUTE pathCount

Description — This attribute indicates how many times the path which follows was used.

Values — Decimal (1..16)

RESPONSE Destination ..., ... VC path taken is:

Description — This response indicates the destination RID and MID of the Frame Relay DLCI connection. It is used for the *ping* command with no option. The path taken by the VC of the Frame Relay DLCI follows the response.

ATTRIBUTE vcsDestRid

Description — This attribute indicates the destination RID of Frame Relay DLCI connection.

Values — Decimal (1..127)

ATTRIBUTE vcsDestMid

Description — This attribute indicates the destination MID of Frame Relay DLCI connection.

Values — Decimal (1..2046)

RESPONSE and another ... component(s).

Description — This is the normal response to an *Add* command. It displays the number of extra subcomponents which have been added if there were more than 6 in total.

ATTRIBUTE count

Description — This attribute indicates the number of added components that have not been displayed.

Values — Decimal (0..65535)

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RESPONSE Error: The following applications have reserved IP addresses. (At most 20 applications are shown.)

Description — A *Check Prov* command generates this response if one or more linked components have a reserved IP address. A reserved IP address is one of:
1) The interface address defined at the *ProtocolPort*.
2) The subnet address - the host portion of the address is all zeros.
3) The broadcast address - the host portion of the address is all ones.

ATTRIBUTE illegalFriReserved

Description — This attribute contains a list of the offending Frame Relay interfaces.

List of — The name of the component

List Size — 20

RESPONSE Selected reference is not capable of providing a reference.

Description — The Set command generates this response whenever an operator adds an invalid component name to the list.

ATTRIBUTE erroredReferenceEntry

Description — This parameter contains a copy of the offending value.

Values — The name of the component

RESPONSE A ... command is already in progress.

Description — The *Tidy* command produces this response if another *Tidy Prov*, *Tidy Software*, or *Remove Software Av* command is in progress.

System action: the *Tidy* command is not executed.
Operator action: re-enter the command after the running one has finished.

ATTRIBUTE tidyAction

Description — This attribute indicates the actual *Tidy* or *Remove* command that is in progress.

Values — tidy prov
tidy software
remove software

RESPONSE

Description — This response is used to display collected round trip delay information. It contains the sent and returned packets data size in bytes, the emission priority order of the packet, and the average, minimum and maximum round trip delays to the destination in milliseconds. Five samples are sent to the destination. Results are calculated based on returned packets.

ATTRIBUTE averageRtd

Description — This attribute indicates the average round trip delay to the destination.

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Values	Decimal (0..20000)
Units	msec

ATTRIBUTE minimumRtd

Description	This attribute indicates the minimum round trip delay to the destination.
Values	Decimal (0..20000)
Units	msec

ATTRIBUTE maximumRtd

Description	This attribute indicates the maximum round trip delay to the destination.
Values	Decimal (0..20000)
Units	msec

ATTRIBUTE sentPktDataSize

Description	This attribute indicates the round trip delay query packet data size, excluding the Nortel Networks proprietary common header and the subnet header, sent to the destination.
Values	Decimal (0..4095)
Units	bytes

ATTRIBUTE returnedPktDataSize

Description	This attribute indicates the round trip delay acknowledge packet data size, excluding the Nortel Networks proprietary common header and the subnet header, received from the destination.
Values	Decimal (0..4095)
Units	bytes

ATTRIBUTE pktEmissionPriority

Description	This attribute indicates the emission priority order used for the round trip delay query.
Values	normal high interrupting

ATTRIBUTE numRtdPktSent

Description	This attribute indicates how many round trip delay query packets were sent to the destination.
Values	Decimal (0..5)

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ATTRIBUTE numRtdPktReceived

Description	This attribute indicates how many round trip delay query packets were returned.
Values	Decimal (0..5)

RESPONSE Outgoing Telnet access ....

Description	The *Telnet* command produces this error when the attempt to set up a Telnet client connection fails for some reason. The *reason* attribute contains more information as to why it failed.

ATTRIBUTE reason

Description	This attribute contains text which should help the user to know why the *Telnet* command failed.
Values	String (0..255, ASCII)

RESPONSE Outgoing Telnet access ....

Description	The *Telnet* command produces this error when the attempt to set up a Telnet client connection fails for some reason. The *reason* attribute contains more information as to why it failed.

ATTRIBUTE reason

Description	This attribute contains text which should help the user to know why the *Telnet* command failed.
Values	String (0..255, ASCII)

RESPONSE Invalid Data Length for Facility

Description	Facility Classes A,B and C require one, two or three octets of Data, respectively. Facility code D has the length of data encoded in the first byte. The code is determined from the upper two bits of the Facility Code.

ATTRIBUTE escapeFaxAttributeCode

Description	This will just echo back the Facility that was input.
Values	String (1..128, Hex)
Replication	Hex (H.0..H.ff)

RESPONSE Error: Component ... does not exist.

Description	A *Check Prov* command produces this response when the index of an *IpxSapApplyEntry* does not specify an existing *ProtocolPort*.

ATTRIBUTE missingPpName

Description	This attribute contains the name of the *ProtocolPort* which does not exist.
Values	The name of the component

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RESPONSE Error: There is no IpxPort component under ....

Description — A *Check Prov* command produces this response when the index of an *IpxSapApplyEntry* specifies a *ProtocolPort* which does not have an *IpxPort* subcomponent.

ATTRIBUTE missingPpName

Description — This attribute contains the name of the *ProtocolPort* which does not have an *IpxPort* subcomponent.

Values — The name of the component

RESPONSE Error:The value of ripNeighbor, ..., is not a valid IP address for a RIP neighbor.

Description — A *Check Prov* command produces this response when the attribute *ripNeighbor* is set to an address that does not belong to any Class A, B or C network.

ATTRIBUTE invalidRipNbrAddress

Description — This attribute contains value of the invalid *ripNeighbor* address.

Values — IP address

RESPONSE Error:Duplicate sourceAddress found. The sourceAddress must be unique for all StaticEndPoint and MultipointStaticEndPoint components within the same sharedDomainVirtualRouter. Please verify against

Description — A *Check Prov* command produces this response when it detects that at least two *StaticEndPoint* or *MultipointStaticEndPoint* components have the identical *sourceAddress* and *sharedDomainVirtualRouter* attributes. The *sourceAddress* of *StaticEndPoint* or *MultipointStaticEndPoint* components within the same *sharedDomainVirtualRouter* must be unique.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Change the value of *sourceAddress* or *sharedDomainVirtualRouter* attributes of the related *StaticEndPoint* or *MultipointStaticEndPoint* components to ensure that, the *sourceAddress* of *StaticEndPoint* or *MultipointStaticEndPoint* components within the same *sharedDomainVirtualRouter* is unique.

ATTRIBUTE otherDupTunnelEndpt

Description — This attribute indicates the other *StaticEndPoints* or *MultipointStaticEndPoints* component which has the identical *sourceAddress* within same *sharedDomainVirtualRouter*.

Values — The name of the component

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RESPONSE File ... compile failed:.....

Description — This returns an informational error string describing why the filter file failed to compile.

ATTRIBUTE fileName

Description — This attribute holds the fully qualified name of the file we're trying to compile.

Values — String (1..255, ASCII)

ATTRIBUTE compilerErrorMsg

Description — This attribute contains a single string holding the compiler error which caused the compile to fail.

Values — String (1..80, ASCII)

RESPONSE Error: The bfrIndex value ... is already being used by other Bfr component. The suggested value is ....

Description — The *Check* command produces this response if two or more *Bfr* components on the same *Lp* have the same *bfrIndex* value.
To correct this problem, change the *bfrIndex* to the suggested value.

ATTRIBUTE currentValue

Description — This attribute specifies the current value of the attribute *bfrIndex*.

Values — Decimal (0..511)

ATTRIBUTE suggestedValue

Description — This attribute specifies the suggested value of the attribute *bfrIndex*.

Values — Decimal (0..511)

RESPONSE Error: ... is an invalid value for attribute ... .

Description — This group contains responses for invalid string values entered by the user. This response will be displayed when the user tries to set to value for a network number / node number string.

ATTRIBUTE invalidString

Description — This attribute contains the actual string value entered by the user.

Values — String (1..18, ASCII)

ATTRIBUTE invalidAttribute

Description — This attribute contains the attribute name of the attribute containing the error.

Values — Decimal (1..65535)

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RESPONSE Error: Attribute ... cannot be ... if attribute ... is ... .

Description — This response group informs the user if the *networkNumberProv* and the *defaultType* are incorrectly provisioned. This response will be invoked on a set command.

ATTRIBUTE netNoName

Description — This attribute contains the name of the *networkNumberProv* attribute to be displayed at response time

Values — Decimal (1..65535)

ATTRIBUTE netNoValue

Description — This attribute contains the value of the *networkNumberProv* attribute to be displayed at response time.

Values — String (0..4, Dashed Hex)

ATTRIBUTE defTypeName

Description — This attribute contains the name of the *defaultType* attribute to be displayed at response time.

Values — Decimal (1..65535)

ATTRIBUTE defTypeValue

Description — This attribute contains the value of the *defaultType* attribute to be displayed at response time.

Values —
other
broadcast
ppp
wanRip
unnumberedRip

RESPONSE Error : ... cannot be ... for the media provisioned .

Description — This response group informs the user if the if the *defaultType* is incorrectly set based on the encapsulation on the *ipxPort*. This response will be invoked while setting the defaultType value.

ATTRIBUTE defTypeName

Description — This attribute contains the name of the *defaultType* attribute to be displayed at response time.

Values — Decimal (1..65535)

ATTRIBUTE defTypeValue

Description — This attribute contains the value of the *defaultType* attribute to be displayed at response time.

Values —
other
broadcast

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ppp
wanRip
unnumberedRip

RESPONSE Host ... responded in ... milliSecs.

Description — This response contains the node address of the host which responded back.

ATTRIBUTE node

Description — This attribute node address of the host which actually responded to the ping.

Values — String (1..6, Dashed Hex)

ATTRIBUTE time

Description — This attribute describes the time in which the node responds to the ping request.

Values — Decimal (1..2000)

RESPONSE Error : ... encapsulation is invalid for provisioned media type.

Description — This response group informs the user if the IpxPort instance Id is incorrectly set for a given media application. This response will be invoked when a Ipx Port is added under the protocol port.

ATTRIBUTE encapVal

Description — This attribute contains the instance (encapsulation) of the *ipxPort* attribute to be displayed at response time.

Values —
link
ethernet
novell
sap
snap
vns
tunnel

RESPONSE Error : No Net Sentry component installed under ... .

Description — This response group checks for the presence or absence of the *netSentry* component under the *vr*. This response will be invoked when the user tries to add a NetSentry component under Ipx or A NetSentry Port component under an IpxPort.

ATTRIBUTE vrName

Description — This attribute contains the name of the *vr* component to be displayed at response time.

Values — The name of the component

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RESPONSE Error: ... cannot exist without ... .

Description — This response group informs the user that an ipx port cannot be provisioned without ipx being provisioned. This response will be invoked while adding an Ipx port under the protocol port.

ATTRIBUTE ipxPortCompName

Description — This attribute contains the name of the *IpxPort* instance to be displayed at response time

Values — The name of the component

ATTRIBUTE ipxCompName

Description — This attribute contains the value of the *Ipx* instance to be displayed at response time.

Values — The name of the component

RESPONSE Error: IPX component ... does not exist.

Description — This group contains responses for invalid protocol port names or SAP Filter ids by the user. This response will be displayed when the user tries add a *IpxSapApplyEntry* filter with a protocol port name or a SAP filter id which has not been provisioned.

ATTRIBUTE invalidPort

Description — This attribute contains the protocol port component or SAP Filter Component which must be provisioned.

Values — The name of the component

RESPONSE Error: ... is an invalid value for attribute ... .

Description — This group contains a response which will be displayed when the user tries to set a value of 0 or ff-ff-ff-ff for the internal network number.

ATTRIBUTE invalidValue

Description — This attribute contains the actual dashed hex value for the internal network number entered by the user.

Values — String (1..4, Dashed Hex)

ATTRIBUTE invalidAttribute

Description — This attribute contains the internal network number attribute which is in error.

Values — Decimal (1..65535)

RESPONSE Error: ... ... is assigned to ... .

Description — This response group informs the user if the *networkNumberProv* has already been assigned to an existing *ipxPort*. This check would be invoked on a add command.

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ATTRIBUTE netNoName

Description — This attribute contains the name of the *networkNumberProv* attribute to be displayed at response time

Values — Decimal (1..65535)

ATTRIBUTE netNoValue

Description — This attribute contains the value of the *networkNumberProv* attribute to be displayed at response time.

Values — String (0..4, Dashed Hex)

ATTRIBUTE ipxPortComp

Description — This attribute contains the *ipxPort* Component to be displayed at response time.

Values — The name of the component

RESPONSE Error: At least one of the attributes ..., ..., ... or ... should be specified.

Description — A *Check* command will produce this response if the user does not specify the *type*, *name*, *networkNumber* or the *node* for a given SAP filter instance.

ATTRIBUTE invalidType

Description — This attribute contains the attribute name of the attribute *type*.

Values — Decimal (1..65535)

ATTRIBUTE invalidName

Description — This attribute contains the attribute name of the attribute *name*.

Values — Decimal (1..65535)

ATTRIBUTE invalidNetNo

Description — This attribute contains the attribute name of the attribute *networkNumber*.

Values — Decimal (1..65535)

ATTRIBUTE invalidNode

Description — This attribute contains the attribute name of the attribute *node*.

Values — Decimal (1..65535)

RESPONSE Error: ... encapType must be llcEncap or ipxVcEncap.

Description — A *check prov* command produces this error message when the attribute *encapType* under the linked *AtmMpe* component is neither ***llcEncap*** nor ***ipxVcEncap***.

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ATTRIBUTE atmMpeName

Description — This attribute contains the name of the *AtmMpe* component.

Values — The name of the component

RESPONSE ERROR: The attribute ... is not a valid Token Ring group address.

Description

The first two bytes of a valid group address, in canonical form, must be 03-00, and the least significant bit of the next byte must be 1.

ATTRIBUTE groupMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values — Decimal (1..65535)

RESPONSE ERROR: The attribute ... must set its U/L bit to 1.

Description

A provisioned MAC address must have its locally administrative bit set to 1. This response is generated as a result of a semantic failure.

ATTRIBUTE localAdminMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values — Decimal (1..65535)

RESPONSE ERROR: The attribute ... can not be provisioned as broadcast address (FF-FF-FF-FF-FF-FF).

Description

The broadcast MAC address is not a valid value for this attribute. This response is generated as a result of a semantic failure.

ATTRIBUTE bcastMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values — Decimal (1..65535)

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RESPONSE Error: Bridge priority provisioned for this spanning tree is out of range for the following operational protocol specification - ....

Description

This response group is used to encode an error message that will be displayed to the user when the bridge priority semantic check fails. The bridge priority semantic check verifies if the provisioned bridge priority is valid according to the provisioned protocol specification. Priorities supplied by the user must meet the following conditions:
1) 0-255 for protocol specification DEC and
2) 0-65535 for protocol specification IEEE.
System Action: The provisioning session will fail
Operator Action: Provision the correct value for the attribute *priority* as per the rules mentioned above based upon the *protocolSpec* provisioned for the indicated spanning tree instance.

ATTRIBUTE opStp

Description

This attribute will carry the operational value of the protocol specification assigned to the spanning tree instance.

Values

both
dec
ieee8021

RESPONSE Error: Number of ... bridge ports provisioned,... exceeds allowed maximum of ....

Description

This response group is provided to encode the response to be set back to the user in case of a semantic check failure. This semantic check checks if the number of bridge ports provisioned under the same VirtualRouter does not exceed the allowed maximum of 255.
System Action: The provisioning session will fail
Operator Action: Reduce the number of bridge ports provisioned to be under the allowed maximum of 255.

ATTRIBUTE brPortType

Description

This attribute contains the bridge type which was exceeded.

Values

String (1..9, ASCII)

ATTRIBUTE numBrpsProvd

Description

This attribute will actually carry the number of bridge ports provisioned.

Values

Decimal (1..65535)

ATTRIBUTE numBrpsAllowed

Description

This attribute will actually carry the allowed maximum number of bridge ports.

Values

Decimal (1..65535)

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RESPONSE Error: The following bridge port was provisioned when no port numbers were available: ... This port must be deleted before this session can be activated.

Description — This response group is provided to encode the response to be sent back to the user in case a bridge port was provisioned after the maximum allowed bridge ports were allocated. When this occurs, a port number cannot be assigned to the bridge port and the port is considered to be invalid.
System Action: The provisioning session will fail
Operator Action: Delete the specified bridge port. If the maximum number of bridge ports is not provisioned, it can be re-added into the system.

ATTRIBUTE invBrCompName

Description — This attribute will actually carry the component name of the invalid bridge port.

Values — The name of the component

RESPONSE Error: ... must be the same for all source route bridge ports in the same domain.

Description — The error message is returned when the user has provisioned an invalid *internalLanId, or bridgeNum* value.
System Action: The provisioning session will fail
Operator Action: Correct the *internalLanId* or bridgeNum value, then initiate a *check prov* or an *act prov* command.

ATTRIBUTE attributeName

Description — This attribute will carry the name of the *bridgeNum* or *internalLanId* attribute.

Values — Decimal (0..65535)

RESPONSE Error: Invalid LanId value specfied. ... must be in range (1 - 4095).

Description — The error message is returned when the user has provisioned an invalid *lanId* or *internalLanId* value.
System Action: The provisioning session will fail
Operator Action: Correct the *lanId* or *internalLanId* value, then initiate a *check prov* or an *act prov* command.

ATTRIBUTE attributeName

Description — This attribute will carry the name of the *lanid* or *internalLanId* attribute.

Values — Decimal (0..65535)

RESPONSE ...

Description — Display LanTest specific information, this may be in the form of multiple responses.

ATTRIBUTE testData

Description — This attribute contains the test information requested.

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Values String (0..255, ASCII)

RESPONSE ERROR: The attribute ... is not a valid Token Ring functional address.

Description
The provisioned functional address must contain the bit mask of 03-00-fe-8f-84-01.

ATTRIBUTE funcAdrId

Description
This attribute contains the numeric ID of the functional address attribute involved in the error.

Values Decimal (1..65535)

RESPONSE Warning: (00-00-00-00-00-00) is provisioned for attribute ....

Description
A MAC address consisting of all zeros is not a valid value for this attribute. This response is generated as a result of a semantic failure.

ATTRIBUTE zeroMacAdrId

Description
This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values Decimal (1..65535)

RESPONSE Error: Attribute ... has an illegal value of ... for this bridge port and medium combination.

Description
A *check prov* command produces this response if the attribute *preserveDomain* cannot have the value ***on*** for the given bridge port and medium combination.
The Ethernet media cannot handle a value of ***on*** for the attribute *preserveDomain*.
System Action: A error message is generated and provisioning session fails.
Operator Action: Set the value of *preserveDomain* attribute to ***off***.

ATTRIBUTE pd

Description This attribute carries the name of the *preserveDomain* attribute.

Values Decimal (1..65535)

ATTRIBUTE pdVall

Description This attribute will carries the value of the *preserveDomain* attribute.

Values
off
on

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RESPONSE Error: Attribute ... has an illegal value of ... for this bridge port and medium combination.

Description	This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the attribute *serviceClass* can have the value ***ordered*** for the given bridge port and medium combination. This response is not supported as the attribute *serviceClass* was obsoleted. **System Action**: A error message is generated and provisioning session fails. **Operator Action**: Set the value of *serviceClass* attribute to ***notOrdered***. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE svc

Description	This attribute will actually carry the name of the *serviceClass* attribute.
Values	Decimal (1..65535)

ATTRIBUTE svcVal

Description	This attribute will actually carry the value of the *serviceClass* attribute.
Values	ordered notOrdered

RESPONSE No name

Description	This is an EGP Neighbor Loss Trap derived from RFC 1450, RFC 1213, and RFC 1157. An egpNeighborLoss trap signifies that an *EgpNeighbor* has been marked down and the EGP peer relationship no longer obtains.

ATTRIBUTE egpNeighAddrOid

Description	This is the object identifier of the EgpNeighAddr variable binding in the trap The object identifier is “root.iso.org.dod.internet.mgmt.mib-2.egp.egpNeighTable.egpNeighEntry.egpNeighAddr”
Values	Integer Sequence

ATTRIBUTE egpNeighAddrValue

Description	This is the value of the egpNeighAddr that has been lost.
Values	IP address

RESPONSE IpPing: Rx reply of ... bytes from ...: icmpSeq=..., time=...ms

Description	This response indicates that the ping to the specified IP address was successful.

ATTRIBUTE bytes

Description	This attribute indicates the number of bytes contained in the IP echo reply packet.

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Values	Decimal (30..20000)

ATTRIBUTE ipAddr

Description	This attribute indicates the IP address of the remote host.
Values	IP address

ATTRIBUTE sequence

Description	This attribute indicates the sequence number contained in the echo reply.
Values	Decimal (0..4294967295)

ATTRIBUTE time

Description	This attribute indicates the time the echo request/reply takes to make a round trip.
Values	Decimal (0..65535)

RESPONSE Destination ... is not responding after ... attempt(s).

Description	This response indicates that the ping to the specified IP address was unsuccessful.

ATTRIBUTE ipAddr

Description	This attribute indicates the *ipAddr* of the remote host.
Values	IP address

ATTRIBUTE attempts

Description	This attribute indicates the number of attempts made before the *Ping* command declared that the destination was not responding.
Values	Decimal (1..4095)

RESPONSE IP Trace Route for ...:Path taken:

Description	This response contains the header line used when the *-traceRoute* ping option was specified. It is used when the trace was successful. The path taken follows this response.

ATTRIBUTE ipAddr

Description	This attribute indicates the IP address of the remote host.
Values	IP address

RESPONSE No name

Description	This is the DLCI Status Change Trap derived from the draft Frame Relay DTE MIB (draft-ietf-iplpdn-frmib-dte-02.txt). This trap event is generated when a virtual circuit changes state. It has either been created or invalidated, or has toggled between the active and inactive states. The object identifier for this trap is “root.iso.org.dod.internet.mgmt.mib-2.transmission.frameRelay.frameRelayTraps.frDLCIStatusChange”

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ATTRIBUTE frCircuitStateObjectId

Description — This is the object identifier of the frCircuitState variable binding in the trap. The object identifier is “root.iso.org.dod.internet.mgmt.mib-2.transmission.frameRelay.frCircuitTable.frCircuitEntry.frCircuitState” plus an instance specific portion.

Values — Integer Sequence

ATTRIBUTE frCircuitStateValue

Description — This is the value of the frCircuitState variable binding in the trap. The value of frCircuitState indicates whether the particular virtual circuit is operational. The object identifier of this variable binding is “root.iso.org.dod.internet.mgmt.mib-2.transmission.frameRelay.frCircuitTable.frCircuitEntry.frCircuitState” plus an instance specific portion.

Values — invalid
active
inactive

RESPONSE Error: Number of ... stp instances exceeds allowedmaximum of 16.

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the total number of stp instances does not exceed 16.
This response will contain a message that corresponds to the finding that the number of stp instances provisioned exceeds 16.
System Action: The provisioning session will fail
Operator Action: Verify that the number of instances of the component *SpanningTreeProtocol* provisioned are less than 16. This includes the *SpanningTreeProtocol* component with the value of its attribute *stpMode* set to ***backbone***. If there are more instances of the component *SpanningTreeProtocol* provisioned than allowed then delete the unwanted instances of the same. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE mode

Description — This attribute will actually carry the mode of stp found in violation.

Values — tb
sr

RESPONSE Error: Interdependency criterion between ..., and ... not satisfied.

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the following criteria are satisfied:
bridgeMaxAge >= 2 * *bridgeHelloTime* + 1.0 seconds.
System Action: The provisioning session will fail
Operator Action: Check the values of the indicated attributes and ensure that the criterion mentioned below is satisfied. After this type in the *check prov* or the *act prov* command.

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ATTRIBUTE bma

Description — This attribute will actually carry the name of one of the attributes that is used to verify the criteria. The attribute's name is *bridgeMaxAge.*

Values — Decimal (1..65535)

ATTRIBUTE bht

Description — This attribute will actually carry the name of one of the attributes that is used to verify the criteria. The attribute's name is *bridgeHelloTime*.

Values — Decimal (1..65535)

RESPONSE Error: Interdependency criterion between ... and ... is not satisfied.

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the following criteria are satisfied:
2 *(*bridgeForwardDelay* -1.0sconds) >= *bridgeMaxAge***.**
System Action: The provisioning session will fail
Operator Action: Check the values of the indicated attributes and ensure that the criterion mentioned below is satisfied**.** After this type in the *check prov* or the *act prov* command.

ATTRIBUTE bma

Description — This attribute will actually carry the name of one of the attributes that is used to verify the criteria. The attribute's name is *bridgeMaxAge.*

Values — Decimal (1..65535)

ATTRIBUTE bfd

Description — This attribute will actually carry the name of one of the attributes that is used to verify the criteria.The attribute's name is *bridgeForwardDelay.*

Values — Decimal (1..65535)

RESPONSE Error: The following component ..... does not exist.

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the bridge port mentioned as the value of the *receivePort* attribute has already been provisioned.
This response contains a message that corresponds to the finding that the bridge port used as *receivePort* has not been provisioned yet. A bridge port must be provisioned in the same provisioning session as the *StaticTableEntry* component.
System Action: The provisioning session will fail
Operator Action: Provision the indicated bridge port or change the value of the attribute *receivePort* so that it does not refer to a bridge port that has not been provisioned yet. Also ensure that the provisioned bridge port name is a valid bridge port name. After this type in the *check prov* or the *act prov* command.

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ATTRIBUTE ppName

Description — This attribute will actually carry the component name of the protocol port that was used as a part of the value of the *receivePort* attribute. Protocol port(s) and bridge port(s) that are going to be used in the attribute *receivePort* must be provisioned before they are referred to.

Values — The name of the component

ATTRIBUTE brPortName

Description — This attribute will actually carry the name of the bridge port that was used as the value of the *receivePort* attribute but was not found to be provisioned yet. This could also be due to the fact that an invalid bridge port name was provisioned. Bridge port(s) that are going to be used as *receivePort* must be provisioned before they are referred to.

Values — String (1..29, ASCII)

RESPONSE Error: The following bridge port, part of attribute ..., does not exist.- ... .

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if all the bridge ports mentioned in the *allowedToGoTo* attribute are already provisioned.
This attribute contains a message that corresponds to the finding that some bridge port(s) specified in the attribute *allowedToGoTo* has / have not been provisioned yet. All bridge ports mentioned in this attribute are expected to be provisioned before they are referred to.
System Action: The provisioning session will fail
Operator Action: Provision the indicated bridge ports or change the value of the attribute *allowedToGoTo* so that it does not refer to bridge port(s) that has/have not been provisioned yet. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE atgt

Description — This attribute will actually carry the name of the attribute *allowedToGoTo* under the component *StaticTableEntry*.

Values — Decimal (1..65535)

ATTRIBUTE brPortName

Description — This attribute will actually carry the component name of the bridge ports that were mentioned in the attribute *allowedToGoTo* under the component *StaticTableEntry* and was not found to be provisioned yet.

Values — The name of the component

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RESPONSE Error: No Net Sentry component installed under ....

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check, checks for the following:
1. If the global component *NetSentry* is provisioned yet.
This attribute houses a message that corresponds to the finding that the component *Vr/<string> Bridge NetSentry* was provisioned before the *Vr/<string> NetSentry* component.
System Action: The provisioning session will fail.
Operator Action: Provision the global *Vr/<string> NetSentry* component or delete the component *Vr/<string> Bridge NetSentry.* After this type in the *check prov* or the *act prov* command.

ATTRIBUTE noGlobalNsComp

Description — This attribute will actually carry the component name of the *Vr/<string>* component to be displayed at response time.

Values — The name of the component

RESPONSE Error: Following domain number must be provisioned before being referred to- ....

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check, checks for the following:
If the referenced domain number is actually provisioned.
This attribute houses a message that corresponds to the finding that the domain number referred to in the component *ApplyTableEntry* has not been provisioned yet.
System Action: The provisioning session will fail
Operator Action: Provision the indicated domain number, setting it as the value of the attribute *domainNum* of a bridge port or change the value of the attribute *domainNum* in the *NsAte* component so that it refers to a domain that has already been provisioned. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE domNum

Description — This attribute will actually carry the domain number which was expected to be provisioned but was not found to be so.

Values — Decimal (0..4294967293)

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RESPONSE Error: This bridge port cannot exist without the following component- ....

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the *TransparentBridge* component is provisioned when a bridge port exists.
This response contains a message that corresponds to the finding that one of the above mentioned components, required for the operation of this bridge port, has not been provisioned yet.
System Action: The provisioning session will fail
Operator Action: Provision the indicated component. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE compName

Description

This attribute will actually carry the component name that is required for the operation of the bridge port.

Values

The name of the component

RESPONSE Error: It is illegal to provision this bridge port and the following bridge port under the same protocol port- ....

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the combination of bridge ports provisioned under the protocol port is legal, given the bridge port types and the associated medium. This response is obsoleted as only the transparent bridge port is supported.
System Action: The provisioning session will fail
Operator Action: Delete one of the bridge ports provisioned under the indicated protocol port. This bridge port can be provisioned under a different protocol port as per the rules mentioned below.

ATTRIBUTE brpName

Description

This attribute carries the component name of the bridge port which is found to be an illegal combination when provisioned together with the bridge port being checked, under the same protocol port.

Values

The name of the component

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RESPONSE Error: Either A) the domain number assigned to this bridge port is wrong, since it is being used as an instanceidentifier of the backbone stp- ...; or B) the preserveDomainattribute of this bridge port is wrong and it should be set ON.

Description

A *check prov* command produces this response if the domain number provisioned for the access bridge port is the same as the instance identifier of the man *stp*.
This response contains a message which corresponds to the finding that the domain number assigned to the access bridge port is the same as the instance identifier of the backbone *stp* instance. A *stp* component's instance identifier usually represents the domain it is associated with, except when the attribute *stpMode* in the *stp* component has a value of ***backbone***. This instance cannot be used as a domain number for a access bridge port.
System Action: The provisioning session will fail.
Operator Action: Verify that the domain number assigned to any access bridge port is not equal to the instance identifier of the *SpanningTreeProtocol* component whose attribute *stpMode* is set to ***backbone***. If such a condition is found, change the domain number assigned to concerned bridge port(s).

ATTRIBUTE domNum

Description

This attribute will carries the domain number found in violation.

Values

Decimal (0..4294967295)

RESPONSE Error: Bridge port priority provisioned out of range for the following operational stp type- ....

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the bridge port priority range is correct as according to the operational stp type.
This response contains a message that corresponds to the finding that the bridge port priority is found to be other than the following range for the corresponding stp type:
1) 0-255 for stp type DEC and
2) 0-65535 for stp type IEEE.
System Action: The provisioning session will fail
Operator Action: Provision the correct value for the attribute *portPriority* as per the rules mentioned above. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE opStp

Description

This attribute will carry the operational value of the stp type the bridge port will participate in.

Values

dec
ieee8021

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RESPONSE Error: There should exist at least one instance of the following stp component for this bridge port to be operational- ....

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if there exists at least one instance of the *SpanningTreeProtocol* component provisioned while there exist bridge ports provisioned.
This response contains a message that corresponds to the finding that there does not exist a single instance of the *SpanningTreeProtocol* component provisioned while there exist bridge ports provisioned. In other words it is not allowed to provision bridge ports that are out of stp's reach.
System Action: The provisioning session will fail
Operator Action: Provision an instance of the component *SpanningTreeProtocol*. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE stpComp

Description — This attribute will carry the name of the stp component needed for the operation of the bridge port.

Values — The name of the component

RESPONSE Error: It is illegal for the following bridge port ... to be the value of the attribute receivePort, and part of attribute ... .

Description — This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the bridge port mentioned in the *receivePort* attribute appears in the *allowedToGoTo* attribute.
System Action: The provisioning session will fail
Operator Action: Provision the value of the attribute *allowedToGoTo* so that the bridge port provisioned as the *receivePort* does not appear in it. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE brPortName

Description — This attribute will actually carry the name of the bridge port that was used as the value of the *receivePort* attribute but was found to be a part of the attribute *allowedToGoTo*. Bridge port(s) that are going to be used as *receivePort* cannot appear in the *allowedtoGoTo* attribute.

Values — String (1..29, ASCII)

ATTRIBUTE atgt

Description — This attribute will actually carry the name of the attribute *allowedToGoTo* under the component *StaticTableEntry*.

Values — Decimal (1..65535)

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RESPONSE ERROR: The attribute ... can not be provisioned as a multicasting address.

Description

A multicasting address is not a valid value for this attribute. This response is generated as a result of a semantic failure.

ATTRIBUTE mcastMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values Decimal (1..65535)

RESPONSE WARNING: The attribute ... is provisioned.

Description

This Warning message is generated when a MAC address is provisioned.

ATTRIBUTE provMacAdrScId

Description

This attribute contains the numeric ID of the provisioned MAC address.

Values Decimal (1..65535)

RESPONSE Error:The ... feature must be provisioned on ....

Description The *Start* command produces this response when attempted against a service trace receiver without the corresponding trace receiver feature having been provisioned.

System action: The *Start* command has no effect.

Operator action: Add the required feature to the list of features specified by the *featureList* for this LP, issues *Start* command again.

ATTRIBUTE rcvrFeature

Description This attribute is the trace receiver feature which must be provisioned.

Values String (0..20, ASCII)

ATTRIBUTE lp

Description This attribute is the component name of the LP which has requested a trace.

Values The name of the component

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RESPONSE Cannot Unlock - attribute ... is not set to up.

Description — This error response is generated when an operator attempts to *Unlock* a component whose currently provisioned administrative status is ***down*** or ***testing***.

System action: the *Unlock* command is ignored.
Operator action: if desired, change the value provisioned for the indicated attribute to ***up***, then retry the original *Unlock* command. Note that doing this will cause the component to attempt to go into service whenever a CP reload occurs.

ATTRIBUTE attribute

Description — This attribute identifies the provisioned administrative status attribute.

Values — Decimal (0..65535)

RESPONSE Destination reachable. Measured round trip delay ....

Description — This response contains the measured round trip delay taken to reach the destination node.

ATTRIBUTE roundTripDelay

Description — This attribute contains the round trip delay encountered to reach the destination node.

Values — Decimal (0..10000)

RESPONSE .....

Description — This response contains the *nodeName and nodeId* of an intermediate node in the network that was visited as the ping query packet travelled to its destination. The order of nodes listed (through multiple occurances of this response) is the order the nodes were traversed.

ATTRIBUTE nodeName

Description — This attribute contains the *nodeName* of each intermediate node that was visited as the ping query packet travelled to its destination.

Values — String (1..12, ASCII)

ATTRIBUTE nodeId

Description — This attribute contains the *nodeId* of each intermediate node that was visited as the ping query packet travelled to its destination.

Values — Decimal (1..4095)

RESPONSE Path ... used ... times:

Description — This response contains the header line for a particular path used by one or more ping query packets. It is used in response to the *-all* ping option. The path taken follows this response.

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ATTRIBUTE pathInstance

Description	This attribute contains the instance number of the path which follows.
Values	Decimal (1..16)

ATTRIBUTE pathCount

Description	This attribute contains the count of the number of times the path which follows was used.
Values	Decimal (1..16)

RESPONSE Measured maximum round trip delay was ....

Description	This response contains the maximum measured round trip delay taken to reach a destination node in the logical network.

ATTRIBUTE maxRoundTripDelay

Description	This attribute contains the round trip delay encountered to reach the destination node.
Values	Decimal (0..10000)

RESPONSE Cannot Unlock - attribute ..... is not set to active.

Description	This error response is generated when an operator attempts to *Unlock* a component corresponding to a provisioned SNMP table row whose *rowStatus* is not ***active***. Note that if the table can have dynamic as well as provisioned rows, the component containing the provisioned data is not the same as the one representing the SNMP table. **System action**: the *Unlock* command is ignored. **Operator action**: if desired, change the value provisioned for the indicated attribute to ***active***, then retry the original *Unlock* command.

ATTRIBUTE provisionedComponent

Description	This attribute identifies the component which contains the provisioned *rowStatus* attribute. It is present only if the component is different from that specified in the *Unlock* command.
Values	The name of the component

ATTRIBUTE rowStatusAttribute

Description	This attribute identifies the provisioned *rowStatus* attribute.
Values	Decimal (0..65535)
Replication	The name of the component

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RESPONSE Error:...The value specified for ... is invalid. It must be in SnmpUdpAddress Format: IPaddress-UDPport, where UDPport is 162.

Description — A *Set Vr/x Snmp Community/n Manager/n transportAddress* command produces this response when the specified *transportAddress* has an invalid format.

System action: the command is ignored.

Operator action: retry the command with a valid *transportAddress*.

ATTRIBUTE snmpUdpAddressFormat

Description — This attribute contains the numeric ID of the attribute whose value was *Set* incorrectly.

Values — Decimal (1..65535)

RESPONSE Error:...The ... attribute does not match any ... instance.

Description — This error message appears in response to a *Check Prov* command if the value of an *Vr/x Snmp Community/n viewIndex* attribute does not match the replication *index* for a *Vr/x Snmp View/x, n.n* component.

System action: The provisioning view cannot be activated.

Operator action: Set the *viewIndex* attribute to match the replication *index* of an existing *View* component, or add a *View* component with the replication *index* corresponding to *viewIndex*.

ATTRIBUTE attrInError

Description — This attribute contains the numeric ID of the *viewIndex* attribute whose value was not properly set.

Values — Decimal (1..65535)

ATTRIBUTE viewComponent

Description — This attribute indicates a pattern for a *View* component name which is meant to be referenced by the *viewIndex* attribute.

Values — The name of the component

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RESPONSE Error:...The ... attribute is set incorrectly. The set bit should be consistent with the access mode specified by ... . The v1Trap and v2Trap may not be set simultaneously.

Description — This error message appears in response to a *Check Prov* command if the value of the *Vr/x Snmp Community/n Manager/n* component's *privileges* attribute is inconsistent with the parent *Community* component's *accessMode* attribute. Note that ***set*** operations are only allowed if the *Community accessMode* is ***readWrite***.

System action: The provisioning view cannot be activated.

Operator action: Change the *Manager privileges* to be consistent with the *Community accessMode*, or change the *Community accessMode* to allow the *Manager privileges*.

ATTRIBUTE privilegesAttribute

Description — This attribute contains the numeric ID of the *privileges* attribute involved in the conflict.

Values — Decimal (1..65535)

ATTRIBUTE relatedComponent

Description — This attribute contains the component name of the parent *Community* component, whose *accessMode* attribute is involved in the conflict.

Values — The name of the component

ATTRIBUTE accessModeAttribute

Description — This attribute contains the numeric ID of the parent *Community* component's *accessMode* attribute involved in the conflict.

Values — Decimal (1..65535)

Replication — The name of the component

RESPONSE Error:...There are ... instances of the ... component. The maximum number of allowed instances is ....

Description — This error message is generated in response to a *Check Prov* command when the maximum number of *Party, Context or Acl* components has been exceeded.

System action: The provisioning view cannot be activated.

Operator action: Delete enough *Party, Context or Acl* components so that the maximum number of components is not exceeded.

ATTRIBUTE numberOfSubcomponents

Description — This attribute contains the number of subcomponents. This value exceeds the maximum number allowed.

Values — Decimal (0..4294967295)

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ATTRIBUTE nameOfSubcomponent

Description — This attribute contains the name of the subcomponent which has too many instances. It can be *Party*, *Context*, or *Acl*.

Values — The name of the component

ATTRIBUTE maximumNumberOfSubcomponents

Description — This attribute contains a value indicating the maximum number of allowed subcomponents.

Values — Decimal (0..4294967295)

RESPONSE Error:...The ... and ... components have the same value for the ... attribute.

Description — This error message is generated in response to a *Check Prov* command when duplicate *Vr/x Snmp Community/n Manager/n* components are found. The *Manager* components are the same if the value of their *transportAddress* attributes are the same.

System action: The provisioning view cannot be activated.

Operator action: Delete one of the *Manager* components or ensure that their *transportAddress* attributes are different.

ATTRIBUTE managerComponent1

Description — This attribute contains the component name of the first instance of duplicate *Manager* components.

Values — The name of the component

ATTRIBUTE managerComponent2

Description — This attribute contains the component name of the second instance of duplicate *Manager* components.

Values — The name of the component

ATTRIBUTE duplicatedAttribute

Description — This attribute contains the numeric ID of the *transportAddress* attribute which must be unique among *Manager* components.

Values — Decimal (1..65535)

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RESPONSE Error:...The ... and ... components have the same value for the ..., and ... attributes.

Description — This error message is generated in response to a *Check Prov* command when duplicate *Vr/x Snmp Community/n* components are found. The *Community* components are the same if they have the same values for their *communityString* and *tDomain* attributes.

System action: The provisioning view cannot be activated.

Operator action: Delete one of the *Community* components or change the value of at least one of the *communityString* or *tDomain* attributes so that the *Community* components are no longer the same.

ATTRIBUTE communityComponent1

Description — This attribute contains the component name of the first duplicate *Community* component.

Values — The name of the component

ATTRIBUTE communityComponent2

Description — This attribute contains the component name of the second duplicate *Community* component.

Values — The name of the component

ATTRIBUTE duplicatedAttribute1

Description — This attribute contains the numeric ID of the *communityString* attribute which is involved in the conflict.

Values — Decimal (1..65535)

ATTRIBUTE duplicatedAttribute2

Description — This attribute contains the numeric ID of the *tDomain* attribute which is involved in the conflict.

Values — Decimal (1..65535)

RESPONSE Warning:The value of the ... ... attribute has been changed from ... to ... on the copy.

Description — This warning message appears in response to a *Copy* command when a component containing an attribute whose value must be unique is copied. A new value for the named attribute in the destination component is automatically assigned when the *Copy* is done.

System action: the named attribute has been assigned a unique value.
Operator action: none.

ATTRIBUTE nameOfChangedComponent

Description — This attribute contains the name of the destination component whose attribute value was changed.

Values — The name of the component

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ATTRIBUTE changedAttribute

Description	This attribute contains the numeric ID of the attribute whose value was changed.
Values	Decimal (1..65535)
Replication	The name of the component

ATTRIBUTE oldValueOfAttribute

Description	This attribute contains the original value of the attribute in the source component of the *Copy* operation.
Values	Decimal (0..4294967295)

ATTRIBUTE newValueOfAttribute

Description	This attribute contains the newly assigned value of the attribute in the destination component of the *Copy* operation.
Values	Decimal (0..4294967295)

RESPONSE Error:...SNMP requires the VirtualRouter Ip component to be provisioned when the ... attribute has the value ....

Description	This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp ipStack* attribute has a provisioned value of ***vrIp*** and the *Vr/x Ip* component has not been provisioned. **System action**: The provisioning view cannot be activated. **Operator action**: Provision the *Vr/x Ip* component or change the value of the *Vr/x Snmp ipStack* attribute, or delete the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description	This attribute contains the numeric ID for the *ipStack* attribute involved in the conflict.
Values	Decimal (1..65535)

ATTRIBUTE attributeValue

Description	This attribute contains the value of the *ipStack* attribute involved in the conflict.
Values	vrIp ipiFrIpiVc

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RESPONSE Error: ... SNMP requires the IpiFr or IpiVc component to be provisioned when the ... attribute has the value ....

Description — This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp ipStack* attribute has a provisioned value of ***ipiFrIpiVc*** and neither *IpiFr* nor *IpiVc* component have been provisioned.

System action: The provisioning view cannot be activated.

Operator action: Provision the *IpiFr* or *IpiVc* component or change the value of the *Vr/x Snmp ipStack* attribute, or delete the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description — This attribute contains the numeric ID for the *ipStack* attribute involved in the conflict.

Values — Decimal (1..65535)

ATTRIBUTE attributeValue

Description — This attribute contains the value of the *ipStack* attribute involved in the conflict.

Values — vrIp
ipiFrIpiVc

RESPONSE Warning:...A unique value could not be assigned to the ..... attribute.

Description — This warning message appears in response to an *Add* or *Copy* command when it is not possible to assign a unique value to an attribute whose value must be assigned when the *Add* or *Copy* is done. All possible values are currently in use by other components of the same type.

System action: the attribute specified in the response could not be assigned a valid value and the component is left with invalid provisioning data.
Operator action: the component specified in the response should be *deleted*. If you wish to add this component again, then you should *delete* other components of the same type and *activate* the provisioning view in order to free up attribute values.

ATTRIBUTE nameOfAffectedComponent

Description — This attribute contains the name of the component whose attribute was not assigned a valid value. This attribute will not appear if the component which generates the response contains the attribute whose value was not properly assigned.

Values — The name of the component

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ATTRIBUTE componentAttribute

Description — This attribute contains the numeric id of the attribute which was not assigned a valid value. This attribute will not appear if the component which generates the response contains the attribute whose value was not properly assigned.

Values — Decimal (1..65535)

Replication — The name of the component

ATTRIBUTE attribute

Description — This attribute contains the numeric id of the attribute which was not assigned a valid value. This attribute will only appear if the component which generates the response contains the attribute whose value was not properly assigned.

Values — Decimal (1..65535)

RESPONSE Error:...The Vr managementAccess attributemust be enabled when the ... attribute has the value ....

Description — This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp ipStack* attribute has a provisioned value of ***ipiFrIpiVc*** and *Vr/x managementAccess* attribute is set to ***disabled***.

System action: The provisioning view cannot be activated.

Operator action: Change the value of the value of *Vr/x Snmp ipStack* attribute to ***vrIp*** or change the *Vr/x managementAccess* attribute value or remove the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description — This attribute contains the numeric ID for the *ipStack* attribute involved in the conflict.

Values — Decimal (1..65535)

ATTRIBUTE attributeValue

Description — This attribute contains the value of the *ipStack* attribute involved in the conflict.

Values — vrIp
ipiFrIpiVc

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RESPONSE Error:...The Vr managementAccess attribute must be enabled when the ... attribute has the value ....

Description

This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp alarmsAsTraps* attribute has a provisioned value of ***enabled*** and the *Vr/x managementAccess* attribute is set to ***disabled***.

System action: The provisioning view cannot be activated.

Operator action: Change the value of the *Vr/x Snmp alarmsAsTraps* attribute to ***disabled*** or change the *Vr/x managementAccess* attribute value or remove the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description

This attribute contains the numeric ID for the *alarmsAsTraps* attribute involved in the conflict.

Values

Decimal (1..65535)

ATTRIBUTE attributeValue

Description

This attribute contains the value of the *alarmsAsTraps* attribute involved in the conflict.

Values

enabled
disabled

RESPONSE Error: ... Snmp requires the Man component to be provisioned when the ... attribute has the value ....

Description

This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp alarmsAsTraps* attribute has a provisioned value of ***enabled*** and no *Man* component has been provisioned.

System action: The provisioning view cannot be activated.

Operator action: Provision the *Man* component or change the value of the *Vr/x Snmp alarmsAsTraps* attribute, or delete the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description

This attribute contains the numeric ID for the alarmsAsTraps attribute involved in the conflict.

Values

Decimal (1..65535)

ATTRIBUTE attributeValue

Description

This attribute contains the value of the alarmsAsTraps attribute involved in the conflict.

Values

enabled
disabled

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RESPONSE Error:...The mib subtree specified in the view instance... is not allowed on a non management virtual router.

Description

This error message appears in response to a *Check Prov* command if the MIB subtree value specified in the subscriber V*r/x Snmp View* is starting with 1.3.6.1.4.1.562

System action: The provisioning view cannot be activated.

Operator action: Change the MIB subtree value specified in the subscriber V*r/x Snmp View* to indicate a branch which is not associated with Nortel Enterprise MIB branches, or delete this *view*.

ATTRIBUTE actualValProved

Description

This attribute contains the actual value of the MIB subtree specified in a subscriber *Vr/x snmp view* component, which causes the conflict.

Values

The name of the component

RESPONSE Error: The Stp component must ...exist for ... connections.

Description

This response is generated by the *Check Prov* command when *SrcPvc* or *DstPvc* exists, but *Stp* does not exist, or *Stp* exists, but *SrcPvc* or *DstPvc* does not exist.

ATTRIBUTE invalid

Description

Either “” or “not ”.

Values

String (0..4, ASCII)

ATTRIBUTE connection

Description

Either “SPVC” or “PVC”.

Values

String (3..4, ASCII)

RESPONSE Error: This is a backbone brige port (preserveDomain = on), but its domainNum matches the STP instance of the access STP - .... Change either the preserveDomain attribute or the domainNum attribute.

Description

A *Check Prov* command produces this response when the user has provisioned the bridge port as a backbone port (*preserveDomain* = ***on***) but *domainNum* of that bridge port matches the STP instance of an access STP (*stpMode* = ***access***).

ATTRIBUTE domNum

Description

This attribute carries the domain number found in violation.

Values

Decimal (0..4294967295)

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RESPONSE

Description — This RtStats collected event record is generated by an ATM Signalling Interface at the end of each RtStats collection interval. It contains statistics related to call setup attempts and failures. ATM User-Network Interface Specification Version 3.1.(af-sig-0010.002) is referred for Failure Cause Values.

ATTRIBUTE txSetupPdus

Description — This attribute indicates the total number of outgoing call setup attempts in the last collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE txFailureCause3

Description — This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 3.

Values — Decimal (0..4294967295)

ATTRIBUTE txFailureCause17

Description — This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 17.

Values — Decimal (0..4294967295)

ATTRIBUTE txFailureCause18

Description — This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 18.

Values — Decimal (0..4294967295)

ATTRIBUTE txFailureCause21

Description — This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 21.

Values — Decimal (0..4294967295)

ATTRIBUTE txFailureCause27

Description — This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 27.

Values — Decimal (0..4294967295)

ATTRIBUTE txFailureCause28

Description — This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 28.

Values — Decimal (0..4294967295)

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ATTRIBUTE txFailureCause35

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 35.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause36

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 36.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause37

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 37.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause41

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 41.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause45

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 45.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause47

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 47.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause49

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 49.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause57

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 57.
Values	Decimal (0..4294967295)

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ATTRIBUTE txFailureCause58

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 58.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause63

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 63.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause65

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 65.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause73

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 73.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause78

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 78.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause88

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 88.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause96

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 96.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause99

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 99.
Values	Decimal (0..4294967295)

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ATTRIBUTE txFailureCause100

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 100.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause104

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 104.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause111

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 111.
Values	Decimal (0..4294967295)

ATTRIBUTE rxSetupPdus

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause3

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 3.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause17

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 17.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause18

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 18.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause21

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 21.
Values	Decimal (0..4294967295)

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ATTRIBUTE rxFailureCause27

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 27.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause28

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 28.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause35

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 35.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause36

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 36.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause37

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 37.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause41

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 41.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause45

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 45.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause47

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 47.
Values	Decimal (0..4294967295)

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ATTRIBUTE rxFailureCause49

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 49.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause57

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 57.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause58

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 58.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause63

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 63.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause65

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 65.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause73

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 73.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause78

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 78.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause88

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 88.
Values	Decimal (0..4294967295)

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ATTRIBUTE rxFailureCause96

Description — This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 96.

Values — Decimal (0..4294967295)

ATTRIBUTE rxFailureCause99

Description — This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 99.

Values — Decimal (0..4294967295)

ATTRIBUTE rxFailureCause100

Description — This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 100.

Values — Decimal (0..4294967295)

ATTRIBUTE rxFailureCause104

Description — This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 104.

Values — Decimal (0..4294967295)

ATTRIBUTE rxFailureCause111

Description — This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 111.

Values — Decimal (0..4294967295)

ATTRIBUTE signallingChannelStatus

Description — This attribute indicates if the signalling interface is capable of processing or originating call setup requests.

If the value is ***up*** then the signalling channel was capable of processing or originating call setup requests at the end of the last collection interval.

If the value is ***down*** then the signalling channel was not capable of processing or originating call setup requests at the end of the last collection interval.

Values — down
up

ATTRIBUTE rxCbrSetup

Description — This attribute indicates the total number of incoming CBR call setup attempts received by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.

Values — Decimal (0..65535)

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ATTRIBUTE rxRtVbrSetup

Description — This attribute indicates the total number of incoming RtVBR call setup attempts received by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.

Values — Decimal (0..65535)

ATTRIBUTE rxNrtVbrSetup

Description — This attribute indicates the total number of incoming NrtVBR call setup attempts received by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.

Values — Decimal (0..65535)

ATTRIBUTE rxUbrSetup

Description — This attribute indicates the total number of incoming UBR call setup attempts received by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.

Values — Decimal (0..65535)

ATTRIBUTE txCbrSetup

Description — This attribute indicates the total number of outgoing CBR call setup attempts transmitted by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.

Values — Decimal (0..65535)

ATTRIBUTE txRtVbrSetup

Description — This attribute indicates the total number of outgoing RtVBR call setup attempts transmitted by the ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.

Values — Decimal (0..65535)

ATTRIBUTE txNrtVbrSetup

Description — This attribute indicates the total number of outgoing NrtVBR call setup attempts transmitted by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.

Values — Decimal (0..65535)

ATTRIBUTE txUbrSetup

Description — This attribute indicates the total number of outgoing UBR call setup attempts transmitted by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.

Values — Decimal (0..65535)

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ATTRIBUTE rxCbrSetupFail

Description	This attribute indicates the total number of failed incoming CBR call setup attempts received by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE rxRtVbrSetupFail

Description	This attribute indicates the total number of failed incoming RtVBR call setup attempts received by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE rxNrtVbrSetupFail

Description	This attribute indicates the total number of failed incoming NrtVBR call setup attempts received by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE rxUbrSetupFail

Description	This attribute indicates the total number of failed incoming UBR call setup attempts received by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE txCbrSetupFail

Description	This attribute indicates the total number of failed outgoing CBR call setup attempts transmitted by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE txRtVbrSetupFail

Description	This attribute indicates the total number of failed outgoing RtVBR call setup attempts transmitted by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE txNrtVbrSetupFail

Description	This attribute indicates the total number of failed outgoing NrtVBR call setup attempts transmitted by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

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ATTRIBUTE txUbrSetupFail

Description — This attribute indicates the total number of failed outgoing UBR call setup attempts transmitted by this ATM interface during the last collection interval.

Values — Decimal (0..65535)

RESPONSE Error:The value of ripInterface, ..., does not match any RIP interface address provisioned on this virtual router.

Description — A *Check Prov* command produces this response when the attribute *ripInterface* is set to an address that does not match any *LogicalIf* address on this virtual router that has a *RipIf*.

ATTRIBUTE invalidRipInterfaceAddress

Description — This attribute contains the invalid *ripInterface* address.

Values — IP address

RESPONSE Error: The Autonomous System Identifier asId ...of this neighbor can not be equal to the asId of this Egp entity.

Description — This error message appears when the value of Autonomous System Identifier *asId* of the *EgpNeighbor* is equal to the value of Autonomous System Identifier *asId* of the *Egp* entity.

ATTRIBUTE invalidNeighborAsId

Description — This attribute contains the asId of the invalid neighbor.

Values — Decimal (1..65535)

RESPONSE Error: The effective address of NetworkList ... is not a valid IP network address.

Description — This response group generates an error in case the effective address of the *NetworkList* component is not a valid IP network address. i.e., either all 0's (0.0.0.0) or all 1's (255.255.255.255).

ATTRIBUTE invalidExportAddress

Description — This attribute contains the value of invalid *NetworkList* address.

Values — IP address

RESPONSE Error: The neighbor address, ..., does not correspond to any networks provisioned on this virtual router.

Description — A *Check Prov* command produces this response when an EGP neighbor is provisioned with an address that does not correspond to any network as defined by the *LogicalIf*s.

ATTRIBUTE invalidNeighborAddress

Description — This attribute contains value of the invalid *neighbor* address.

Values — IP address

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RESPONSE Error: The specified mask ... is not a valid contiguous mask.

Description — This error message appears in response to a Check Prov command when the value of a specified mask is provisioned with an invalid discontiguous mask.
1. The semantic check function will check for the contiguity of the mask by checking if there are contiguous 1's.

ATTRIBUTE invalidMask

Description — This attribute contains the value of the invalid mask.

Values — IP address

RESPONSE Error: The NextHop Address ... does not belong to any of the subnets provisioned under an IpPort.

Description — This error message appears when the value of a *NextHops* provisioned for a static *RouteEntry* does not belong to one of the subnets provisioned under an *IpPort*. Each provisioned *NextHop* should belong to a valid subnet. This can be accomplished either by adding a *logicalIf* entry under *IpPort* component or changing the *NextHop* address to reflect to one of the subnets provisioned by *logicalIf* entry.

ATTRIBUTE invalidNextHopAddress

Description — This attribute contains the value of invalid *NextHop* address.

Values — IP address

RESPONSE Error: The combination of IP Address ... and Mask ... does not provide a valid entry.

Description — This error message appears when the logical-AND of address and mask do not make a valid entry.

ATTRIBUTE invalidDestAddress

Description — This attribute contains the index value of the invalid destination address.

Values — IP address

ATTRIBUTE invalidDestMask

Description — This attribute contains the index value of the invalid destination mask.

Values — IP address

RESPONSE Error: The ripinterface value can not be set to ....

Description — This error message is invoked when the *ripInterface* address is set to 0xffffffff..

ATTRIBUTE invalidRipInterfaceAddress

Description — This attribute contains value of invalid rip Interface Address.

Values — IP address

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RESPONSE Error: The attribute metricType for StubAreaEntry ... should be set to ospfMetric if and only if the attribute importAsExtern for the AreaEntry is set to importNoExternal.

Description — This Error message appears when there is inconsistency between the attribute *importAsExtern* and the *metricType.*

ATTRIBUTE ospfStubAreaId

Description — This attribute contains the value of invalid *areaId*.

Values — IP address

RESPONSE Error: The value of routerId should not be ....

Description — This error message is produced when the *routerId* is set to either 0.0.0.0 or 255.255.255.255

ATTRIBUTE invalidAddress

Description — This attribute contains value of invalid Router Id.

Values — IP address

RESPONSE Error: The value of stub area ID ... is not equal to any of the StubAreaEntries provisioned under OSPF component.

Description — This Error message appears when this areaId does not match to any of the stub areas provisioned.

ATTRIBUTE ospfStubAreaId

Description — This attribute contains the value of invalid *areaId*.

Values — IP address

RESPONSE Error: The value of areaId ... is not equal to any of the AreaEntries provisioned under the Ospf component.

Description — This Error message will appear for different components under *Ospf* that used areaId. When this areaId does not match to any of the areas provisioned.

ATTRIBUTE ospfAreaId

Description — This attribute contains the value of invalid *areaId*.

Values — IP address

RESPONSE Error: The attribute importAsExtern for AreaEntry ... should be set either to importNoExternal or to importNssa.

Description — This Error message appears when there is a valid *AreaEntry* provisioned for *StubAreaEntry* component, but the value of *importAsExtern* attribute for that *AreaEntry* is not set either to ***importNoExternal*** or ***importNssa***.

ATTRIBUTE ospfStubAreaId

Description — This attribute contains the value of invalid *areaId*.

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Values IP address

RESPONSE Error: When the value of advertiseDefault is set to yes then the value of importAsExtern for this area ... should be set to importNssa.

Description This error message is produced when the *StubArea* belongs to a valid provisioned Areas but if the value of *advertiseDafult* is set to ***yes***, then the attribute *importAsExtern*'s value for that particular *AreaEntry* should be ***importNssa***.

ATTRIBUTE ospfStubAreaEntryAreaId

Description This attribute will contain the value of invalid *areaId*.

Values IP address

RESPONSE Error: When the index lsdbType is set to nssaExternalLink then the attribute importAsExtern for this Area ... should be set to importNssa.

Description This Error message will appear when the index *lsdbType* is set to ***nssaExternalLink*** then the attribute *importAsExtern* for that *Area* should have the value of ***importNssa***.

ATTRIBUTE ospfAggregateEntryAreaId

Description This attribute contains the value of invalid *areaId*.

Values IP address

RESPONSE Error: The index value nbrRouterId can not be all ....

Description This Error message is produced when the provisioned index value *nbrRouterId* is equal to 0.0.0.0 or 255.255.255.255.

ATTRIBUTE invalidAddress

Description This attribute contains value of invalid Interface Address.

Values IP address

RESPONSE Error:The value of outInterface, ..., does not match any RIP interface address provisioned on this routing component.

Description A *Check Prov* command produces this response when the attribute *outInterface* is set to an address that does not match any *logicalIf* or *Interface* address on this routing component (*Vr*, *Rtr* or *Vrf*) that has a *RipIf*.

ATTRIBUTE invalidOutInterface

Description This attribute contains value of the invalid *outInterface* address.

Values IP address

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RESPONSE Error:The value of interface, ..., does not match any RIP interface address provisioned on this routing component.

Description — A *Check Prov* command produces this response when the attribute *interface* is set to an address that does not match any *LogicalIf* or *Interface* address on this routing component (*Vr*, *Rtr* or *Vrf*) that has a *RipIf*.

ATTRIBUTE invalidInterfaceAddress

Description — This attribute contains value of the invalid *interface* address.

Values — IP address

RESPONSE Error:The value of ripInterface, ..., does not match any RIP interface address provisioned on this routing component.

Description — A *Check Prov* command produces this response when the attribute *ripInterface* is set to an address that does not match any *LogicalIf* or *Interface* address on this routing component (*Vr*, *Rtr* or *Vrf*) that has a *RipIf*.

ATTRIBUTE invalidRipInterface

Description — This attribute contains the invalid *ripInterface* address.

Values — IP address

RESPONSE Error: The address ... and mask ... should be in classA, classB or classC.

Description — This error message appears when the specified address and mask are not in classA or in classB or in classC for *ApplyEntry* component.

ATTRIBUTE netSentryAddress

Description — This attribute contains the value of invalid mask.

Values — IP address

ATTRIBUTE netSentryMask

Description — This attribute contains the value of invalid mask.

Values — IP address

RESPONSE Error: The HostEntry Address ... does not belong to any of the subnets provisioned as Interface or as logicalIfEntry under IpPort.

Description — This error will be generated if the hostAddress provisioned does not correlate with any of the subnets provisioned for an *interface* or *ipPort.*

ATTRIBUTE arpHostEntry

Description — This attribute will contain the address of Host Entry.

Values — IP address

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RESPONSE Error: The PhysAddress can not be ....

Description	This error message is displayed when attribute *PhysAddress* is set to all zeroes or all ones.

ATTRIBUTE invalidPhysAddress

Description	This attribute contains the value of invalid physical Address.
Values	String (0..6, Dashed Hex)

RESPONSE Error: The netMask ... is not one of classA, classB, or classC.

Description	This error message appears when *netMask* under *IpLogicalInterface* or *Interface* is not one of classA, classB or classC. *netMask* must be contiguous starting from the left-most bit.

ATTRIBUTE invalidNetMask

Description	This attribute contains the value of invalid *netMask*.
Values	IP address

RESPONSE Error: The specified Address ... is not one of classA, classB or classC.

Description	This error message appears when the specified IP Address is not of classA, classB or classC.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of invalid IP address.
Values	IP address

RESPONSE Error: The Ip Address ... is a network address given provisioned NetMask.

Description	This error message appears when IP Address under *IpLogicalInterface* or *Interface* happens to be a broadcastAddress.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of invalid IP address.
Values	IP address

RESPONSE Error: There are duplicate LogicalIf ... found.

Description	This error message appears when there are duplicate *IpLogicalInterface* Addresses found under two different *IpPorts*.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of invalid *IP address.*
Values	IP address

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RESPONSE Error:The NextHop Address can not be set to ....

Description — This error message appears when the value of *NextHops* provisioned for a static *RouteEntry* is set to 0.0.0.0 or 255.255.255.255.

ATTRIBUTE invalidAddress

Description — This attribute contains the value of the invalid *NextHop* address.

Values — IP address

RESPONSE Error: There are duplicate linkDestinationAddress ... found.

Description — This error message appears when there are duplicate *linkDestinationAddresses* found.

ATTRIBUTE invalidAddress

Description — This attribute contains the value of invalid IP address.

Values — IP address

RESPONSE Error: Mtu of ... exceeds the maximum defined range of the media.

Description — This error message appears when *maxTxUnit* is not within the defined range of the media.
The possible media ranges are Ethernet=1500, FDDI=4470, X25=9188, PPP=18000, TokenRing=18944.

ATTRIBUTE invalidMtuRange

Description — This attribute contains the value of an out of range MTU.

Values — Decimal (0..65535)

RESPONSE Error: The linkDestinationAddress can not be set to ....

Description — This error message appears when:
1) The attribute *linkModel* under *IpPort* or *Interface* component is set to ***pointToPoint*** and the attribute *linkDestinationAddress* under *IpLogicalInterface* or *Interface* component is set either to 0.0.0.0 or 255.255.255.255;

2) The media linked to the *ProtocolPort* is not *Ppp* and the attribute *linkDesintationAddress* is set to a non-zero value.

ATTRIBUTE invalidAddress

Description — This attribute contains value of invalid linkDestination Address.

Values — IP address

RESPONSE Error: The value of index rangeNet can not be set to ....

Description — This error message appears when index value of *rangeNet* of Ospf AreaRange Entry is set to either 0x00000000 or 0xffffffff.

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ATTRIBUTE invalidAddress

Description — This attribute contains the value of invalid rangeNet address.

Values — IP address

RESPONSE Error:The NextHop Address ... can not be equal to any logicalIf If it belongs to any subnets provisioned under an IpPort.

Description — This error message appears when the value of *NextHops* provisioned for a static *RouteEntry* belongs to one of the subnets provisioned under an IpPort; however, the *NextHop* address is equal to the index value of some *LogicalIfEntry* component.

ATTRIBUTE invalidNextHopAddress

Description — This attribute contains the value of an invalid *NextHop* address.

Values — IP address

RESPONSE Error:The combination of destAddress and destMask is ambiguous, Please add destAddress as ....

Description — This error message appears when the logical-AND of destAddress and not of destMask provides and ambiguous entry.

ATTRIBUTE invalidDestAddress

Description — This attribute contains the value of the index *destAddress*.

Values — IP address

RESPONSE Error:The feature ... is not provisioned in the feature list of ....

Description — The *Check Prov* command produces this response when an IP, IPX, or bridge port is configured under *ProtocolPort* component, but the corresponding feature is not present in the *featureList* of the *Sw Lpt/<string>* component associated with the port's inbound card.

ATTRIBUTE featName

Description — This attribute indicates the feature that is required in the *featureList* of *Sw Lpt/<string>* for an IP/IPX/bridge port. The feature can be ip, ipx, or bridge depending on the protocol port.

Values — String (1..30, ASCII)

ATTRIBUTE lpt

Description — This attribute indicates the *Sw Lpt* component associated with the inbound card of a particular protocol port. This component should have an IP/IPX/bridge feature in its *featureList* if the IP/IPX/bridge port is provisioned under *ProtocolPort*.

Values — The name of the component

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RESPONSE Error: The effective address of NetworkList ... is not a valid IP network address.

Description — This response group generates an error in case the effective address of the *NetworkList* component is not a valid IP network address, i.e., either all 0's (0.0.0.0) or all 1's (255.255.255.255).

ATTRIBUTE invalidExportAddress

Description — This attribute contains the value of invalid *NetworkList* address.

Values — IP address

RESPONSE Error: The value of localAddressConfigured, ..., does not match any IP interface address provisioned on this routing component.

Description — A *Check Prov* command produces this response when the attribute *localAddressConfigured* is set to an address that does not match any *logicalIf* or *Interface* address on this routing component (*Vr*, *Rtr* or *Vrf*).

ATTRIBUTE invalidIPInterfaceAddress

Description — This attribute contains value of the invalid *localAddressConfigured* address.

Values — IP address

RESPONSE Error: The attribute peerAs, ..., must be set to a BGP peerAs on this routing component.

Description — A *Check Prov* command produces this response when the value of attribute *peerAs* does not match the *peerAs* of any BGP peer on the routing component (*Vr*, *Rtr* or *Vrf*).

ATTRIBUTE invalidPeerAs

Description — This attribute contains value of the invalid *peerAs* value.

Values — Decimal (0..65535)

RESPONSE Error: The value of peerIpAddress, ..., does not match any peers address on this routing component.

Description — A *Check Prov* command produces this response when the value of attribute *peerIpAddress* does not match the address of any BGP peer on the routing component (*Vr*, *Rtr* or *Vrf*).

ATTRIBUTE invalidPeerAddress

Description — This attribute contains value of the invalid *peerIpAddress* value.

Values — IP address

RESPONSE Error: The value of the attribute bgpIdentifier should not be ....

Description — This error message appears when the *bgpIdentifier* attribute is set to either 0.0.0.0 or 255.255.255.255.

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ATTRIBUTE invalidBgpId

Description — This attribute contains value of invalid *Bgp* Identifier.

Values — IP address

RESPONSE Error:Exceeded maximum number of Vr, Rtr and Vrf components.

Description — The *Check Prov* command produces this response when the maximum number of total allowable *Vr*, *Router* and *Vrf* components has been exceeded.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Delete *Vr*, *Rtr* and *Vrf* components which are in excess of the maximum allowed

ATTRIBUTE maxAllowedVrs

Description — The maximum number of provisionable *Vr*, *Router* and *Vrf c*omponents.

Values — Decimal (0..65535)

ATTRIBUTE currentProvisionedVrs

Description — The current number of provisioned *Vr*, *Router* and *Vrf* components.

Values — Decimal (0..65535)

RESPONSE Error:Exceeded maximum allowable Protocol Ports and Interfaces.

Description — The *Check Prov* command produces this response when the maximum number of allowable Protocol Ports and Interfaces has been exceeded. Delete all Protocol Ports and Interfaces which are in excess of the maximum allowed.

ATTRIBUTE maxAllowedProtocolPorts

Description — The maximum number of provisionable Protocol Ports and Interfaces.

Values — Decimal (0..65535)

ATTRIBUTE currentProvisionedProtocolPorts

Description — The current number of provisioned Protocol Ports and Interfaces.

Values — Decimal (0..65535)

RESPONSE ... dynamic ARP entries removed.

Description — This response indicates the number of dynamic ARP entries removed. If no entries were removed, it may be due to specifying an incorrect IP address for the *-logicalIf* option.

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ATTRIBUTE numDeleted

Description	This is the number of dynamic ARP entries removed.
Values	Decimal (0..65535)

RESPONSE Error: ... is an invalid value for attribute ... .

Description	This group contains a response which will be displayed when the user tries to set a value of ff-ff-ff-ff for the port network number.

ATTRIBUTE invalidValue

Description	This attribute contains the actual dashed hex value for the port network number entered by the user.
Values	String (0..4, Dashed Hex)

ATTRIBUTE invalidAttribute

Description	This attribute contains the port network number attribute which is in error.
Values	Decimal (1..65535)

RESPONSE Download stopped. The following AV does not support the processor target specified:

Description	This response is issued when the user have specified an option of the *processorTargets* attribute which is not applicable to the given AV. This is the case when the requested files (for example, ***ppc*** type) are not present in the corresponding AD file.

ATTRIBUTE scsAvName

Description	This attribute contains the name of the AV which does not support the file type specified in the hardwareType attribute.
Values	String (1..30, ASCII)

RESPONSE Error:The following TosMap components contain conflicting tos values:

Description	A *Check Prov* command produces this response if any value in the *tos* attribute appears in two different *TosMap* components under the same *CosPolicyGroup*, and the *assignedCos* attribute of the two parent *Policy* components are not equal.

ATTRIBUTE tosMap1

Description	This attribute specifies the first of two conflicting *TosMap* components.
Values	The name of the component

ATTRIBUTE tosMap2

Description	This attribute specifies the second of two conflicting *TosMap* components.
Values	The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, some of the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes specify overlapping, but not equal port ranges.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, some of the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes specify overlapping, but not equal port ranges.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, some of the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal and not zero.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of the *portNumberRange* attributes specify overlapping, but not equal port ranges.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, some of the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal and not zero.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of the *portNumberRange* attributes specify overlapping, but not equal port ranges.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE

Description

This response displays the result of the OAM Ethernet port test.

ATTRIBUTE testResult

Description

This attribute records the result of last port test executed on the OAM Ethernet port. The result can be one of the following values.
pass: the test passed
fail: the test failed
neverRun: the test has not been run
running: the test is running

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Values	running pass fail neverRun

RESPONSE Frame Relay Accounting Information

Description	This response describes the attributes specific to a Frame Relay accounting record. All items which belong to a Frame Relay accounting record are defined here. This definition is translated into Service Data Description files - sdd file. The Accounting Data Server (ADS) uses the sdd file to decode accounting records.

ATTRIBUTE recordType

Description	*recordType* attribute indicates the type of the record. For the first record in the accounting period, only *first* is set to 1. For the last record, only *last* is set to 1. For intermediate records, both *first* and *last* are set to 0. If there is only one record in the accounting period, then both *first* and *last* are set to 1. first, ~last - first record ~first, ~last - intermediate record. ~first, last - final record. first, last - first and last record (one only).
Set of	first last

ATTRIBUTE callType

Description	This attribute defines the type of the call for which this accounting record is issued. ~gateway, ~localNetwork - non gateway call. ~gateway, localNetwork - gateway call to another network gateway, ~localNetwork - gateway call from another network gateway, localNetwork - gateway transit call.
Set of	gateway localNetwork

ATTRIBUTE callReferenceNumber

Description	This attribute contains the value of the call reference number assigned to each new call. Accounting records are uniquely defined by a call reference number on each function processor. In double ended accounting the *callReferenceNumber* is the same for both accounting records. Call reference number is unique only on function processor
Values	Decimal (0..16777215)

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ATTRIBUTE callingNodeIdentifier

Description — This attribute identifies the calling (originating) node by a unique number assigned to each node in the *ModuleData* component. (In DPN it is called a NamsId.)

Values — Decimal (256..49151)

ATTRIBUTE callingCustomerIdentifier

Description — This attribute contains the number assigned in each service to a customer and it identifies the customer at the calling end of the call in the Customer Network Management.

Values — Decimal (0; 1..8191)

ATTRIBUTE callingPortIdentifier

Description — This attribute contains the function processor number used by the service issuing the accounting record for the calling (originating) part of the call. If the port information is from DPN, then the pe, port and pi numbers are encoded as 5, 5, 6 bits.

Values — Decimal (0..65535)

ATTRIBUTE callingNpi

Description — This attribute contains the calling numbering plan indicator of the calling address.

Values — x121
e164

ATTRIBUTE callingAddress

Description — This attribute contains the calling DataNetworkAddress of the interface. *callingAddress* includes DNIC (first 4 digits) for X.121, and CC (Country Code) for the E.164 address of the calling end. The maximum length is 15 digits.

Values — BCD (1..15)

ATTRIBUTE callingDlci

Description — This attribute contains the calling DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request at the calling end.

Values — Decimal (16..1007)

ATTRIBUTE calledNodeIdentifier

Description

This attribute identifies the called (terminating) node by a unique number assigned to each node in the *ModuleData* component. (In DPN it is called a NamsId.)

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Values Decimal (256..49151)

ATTRIBUTE calledCustomerIdentifier

Description
This attribute contains the number assigned in each service to a customer and it identifies the customer at the called end of the call in the Customer Network Management.

Values Decimal (0; 1..8191)

ATTRIBUTE calledPortIdentifier

Description This attribute contains the function processor number used by the service issuing an accounting record for the called (terminating) side of the call. If the port information is from DPN, then the pe, port and pi numbers are encoded as 5, 5, 6 bits.

Values Decimal (0..65535)

ATTRIBUTE calledNpi

Description This attribute contains the called numbering plan indicator of the called address.

Values x121
e164

ATTRIBUTE calledAddress

Description
This attribute contains the called DataNetworkAddress of the interface. *calledAddress* includes DNIC (first 4 digits) for X.121, and CC (Country Code) for the E.164 address of the called end. The maximum length is 15 digits.

Values BCD (1..15)

ATTRIBUTE calledDlci

Description
This attribute contains the called DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request at the called end.

Values Decimal (16..1007)

ATTRIBUTE segmentSizeIndex

Description This attribute is the segment size index provisioned on the module.
It is used to calculate the number of segments sent and received in the accounting record. Two to the power of *segmentSizeIndex* is equal to the segment size (in bytes) provisioned in the *VirtualCircuitSytem* component. For example, if the segment size is 128, then *segmentSizeIndex* is 7.

Values Decimal (0..16)

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ATTRIBUTE clearCause

Description — This attribute is the clear cause signalled at the end of a connection. It is set to H.b0 for intermediate records.

Values — Decimal (0..255)

ATTRIBUTE diagnosticCode

Description — This attribute is the diagnostic code signalled at the end of a connection. It is set to 0 for intermediate records.

Values — Decimal (0..255)

ATTRIBUTE callingCir

Description — This attribute contains the calling end provisioned CIR (Committed Information Rate).

Values — Decimal (0..65535)

ATTRIBUTE callingEir

Description — This attribute contains the calling end provisioned EIR (Excess Information Rate).

Values — Decimal (0..65535)

ATTRIBUTE callingServiceType

Description — This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface Dna as *accountClass*.

Values — Decimal (0..50)

ATTRIBUTE callingCollectReason

Description — This attribute indicates the reason for the accounting collection of the calling end (It can be any combination of Audit, Study, Test, Billing, Force).

Set of
bill
test
study
audit
force

ATTRIBUTE callingDse

Description — This attribute defines the calling end Data Service Exchange provisioned in Dna as an arbitrary number in the *serviceExchange* attribute.

Values — Decimal (0..255)

ATTRIBUTE callingRateAdaptation

Description

provisioned - rate adaptation provisioned on the calling end of the call.

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occurred - rate adaptation occurred on the calling end of the call.
enforced - rate enforcement provisioned on the calling end of the call.

Set of
provisioned
occured
enforced

ATTRIBUTE callingClassOfService

Description
emissionPriority - emission priority provisioned.

Set of
emissionPriority

ATTRIBUTE calledCir

Description
This attribute contains the called end provisioned CIR (Committed Information Rate).

Values
Decimal (0..65535)

ATTRIBUTE calledEir

Description
This attribute contains the called end provisioned EIR.

Values
Decimal (0..65535)

ATTRIBUTE calledServiceType

Description
This attribute indicates the service supported by the port used by the called end-user. This number is provisioned on each interface Dna as *accountClass*.

Values
Decimal (0..255)

ATTRIBUTE calledCollectReason

Description
This attribute indicates the reason for the accounting collection of the called end (It can be any combination of Audit, Study, Test, Billing, Force).

Set of
bill
test
study
audit
force

ATTRIBUTE calledDse

Description
One byte field defines the called end Data Service Exchange provisioned in Dna as an arbitrary number in the *serviceExchange* attribute.

Values
Decimal (0..255)

ATTRIBUTE calledRateAdaptation

Description
provisioned - rate adaptation provisioned on the called end of the call

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occurred - rate adaptation occurred on the called end of the call.
enforced - rate enforcement provisioned on the called end of the call.

Set of
provisioned
occured
enforced

ATTRIBUTE calledClassOfService

Description

emissionPriority - emission priority provisioned.

Set of
emissionPriority

ATTRIBUTE flags

Description

This attribute contains values for the call characteristics.
calledEndCharging - called end is charging.
~calledEndCharging - calling end is charging
highPriority - call is high priority.
pvcType - call is pvc.
~pvcType - call is svc.
hunted - call was hunted.
redirected - call was redirected.
calledGenerated - called end generated accounting record.
~calledGenerated - calling end generated accounting record.
calledCleared - call was cleared by called end.
~calledCleared - call was cleared by calling end.
unique - accounting record is unique.
reachedDataTransfer - call reached data transfer.
collReasonValid - collection reasons are valid.
callingUni - interface is callingUni.
~callingUni - interface is callingNni.
calledUni - interface is calledUni.
~calledUni - interface is calledNni.
spareOne - not used
spareTwo - not used
callingAbit - called Abit set

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calledAbit - calling Abit set
userDataInCallReq - user data present in call request

Set of

calledEndCharging
highPriority
pvcType
hunted
redirected
calledGenerated
calledCleared
unique
reachedDataTransfer
collReasonValid
userDataInCallReq
callingUni
calledUni
spareOne
spareTwo
callingAbit
calledAbit

ATTRIBUTE startTime

Description

This attribute represents the start time in the accounting record. For SVC it is the time when the call request packet was created. For PVC it is set by the Master VC when the master call is formatted. On the subsequent accounting record, the start time corresponds to the end time of the previous record. If Time of Day Accounting (TODA) is used, start time (and end time) correspond to times set in the schedule (set in *Col/accounting collectionTimes* attribute).

Values

Time (DHMS)

ATTRIBUTE endTime

Description

This attribute represents the end time in the accounting record. If TODA is used, the end time in non-final records is the time of the TODA period. For 12-hour accounting, the time on non-final records is the time when the 12-hour timer expires at the charged end. On final accounting records, the end time is the time when the disconnect packet is first received. If Time of Day Accounting (TODA) is used, end time (and start time) correspond to times set in the schedule (set in *Col/accounting collectionTimes* attribute).

Values

Time (DHMS)

ATTRIBUTE elapsedTime

Description

This attribute represents the duration of the call in 0.1 second increments. This time interval is started when call request is processed. If call does not reach data transfer, then elapsed time is set to 0. Elapsed time represents the true measure of the accounting period. It is measured independently of start time and end time. Since start time and end time can be changed

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externally by adjusting the clock, elapsed time can be shorter or longer than the difference between start time and end time. This difference can show as much as 60 seconds on accounting records for the virtual circuits which are idle (carry no traffic) and when TODA is used (in which case it is caused by the internal TODA detection mechanism). When a 12 hour accounting period is used, elapsed time is exact or differs by a few seconds from a 12 hour duration.

Values — Decimal (0..16777215)

ATTRIBUTE callingEgressBytes

Description — This attribute contains the total number of bytes received at the calling end.

Values — Long Integer

ATTRIBUTE callingIngressBytes

Description — This attribute contains the total number of bytes sent at the calling end.

Values — Long Integer

ATTRIBUTE callingEgressFrames

Description — This attribute contains the total number of frames received at the calling end.

Values — Decimal (0..4294967295)

ATTRIBUTE callingIngressFrames

Description — This attribute contains the total number of frames sent at the calling end.

Values — Decimal (0..4294967295)

ATTRIBUTE callingEgressSegments

Description — This attribute contains the total number of segments received at the calling end.

Values — Decimal (0..4294967295)

ATTRIBUTE callingIngressSegments

Description — This attribute contains the total number of segments sent at the calling end.

Values — Decimal (0..4294967295)

ATTRIBUTE callingEirEgressBytes

Description — This attribute contains the number of EIR bytes received from the subnet at the calling end.

Values — Long Integer

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ATTRIBUTE callingEirIngressBytes

Description — This attribute contains the number of EIR bytes sent to the subnet at the calling end.

Values — Long Integer

ATTRIBUTE callingEirEgressFrames

Description — This attribute contains the number of EIR Frames received from the subnet at the calling end.

Values — Decimal (0..4294967295)

ATTRIBUTE callingEirIngressFrames

Description — This attribute contains the number of EIR Frames sent to the subnet at the calling end.

Values — Decimal (0..4294967295)

ATTRIBUTE callingEirEgressSegments

Description — This attribute contains the number of EIR segments received from the subnet at the calling end.

Values — Decimal (0..4294967295)

ATTRIBUTE callingEirIngressSegments

Description — This attribute contains the number of EIR segments sent to the subnet at the calling end

Values — Decimal (0..4294967295)

ATTRIBUTE callingDiscardedBytes

Description — This attribute contains the number of bytes discarded at the calling end due to rate enforcement when no rate adaptation occurred.

Values — Long Integer

ATTRIBUTE callingDiscardedFrames

Description — This attribute contains the number of frames discarded at the calling end due to rate enforcement when no rate adaptation occurred.

Values — Decimal (0..4294967295)

ATTRIBUTE callingDiscardedSegments

Description — This attribute contains the number of segments discarded at the calling end due to rate enforcement when no rate adaptation occurred.

Values — Decimal (0..4294967295)

ATTRIBUTE calledEgressBytes

Description — This attribute contains the total number of bytes received at the called end.

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Values Long Integer

ATTRIBUTE calledIngressBytes

Description This attribute contains the total number of bytes sent at the called end.

Values Long Integer

ATTRIBUTE calledEgressFrames

Description This attribute contains the total number of frames received at the called end.

Values Decimal (0..4294967295)

ATTRIBUTE calledIngressFrames

Description This attribute contains the total number of frames sent at the called end.

Values Decimal (0..4294967295)

ATTRIBUTE calledEgressSegments

Description This attribute contains the total number of segments received at the called end.

Values Decimal (0..4294967295)

ATTRIBUTE calledIngressSegments

Description This attribute contains the total number of segments sent at the called end.

Values Decimal (0..4294967295)

ATTRIBUTE calledEirEgressBytes

Description This attribute contains the number of EIR bytes received from the subnet at the called end

Values Long Integer

ATTRIBUTE calledEirIngressBytes

Description This attribute contains the number of EIR bytes sent to the subnet at the called end

Values Long Integer

ATTRIBUTE calledEirEgressFrames

Description This attribute contains the number of EIR Frames received from the subnet at the called end

Values Decimal (0..4294967295)

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ATTRIBUTE calledEirIngressFrames

Description	This attribute contains the number of EIR Frames sent to the subnet at the called end
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirEgressSegments

Description	This attribute contains the number of EIR segments received from the subnet at the called end
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirIngressSegments

Description	This attribute contains the number of EIR segments sent to the subnet at the called end
Values	Decimal (0..4294967295)

ATTRIBUTE calledDiscardedBytes

Description	This attribute contains the number of bytes discarded at the called end due to rate enforcement when no rate adaptation occurred.
Values	Long Integer

ATTRIBUTE calledDiscardedFrames

Description	This attribute contains the number of frames discarded at the called end due to rate enforcement when no rate adaptation occurred.
Values	Decimal (0..4294967295)

ATTRIBUTE calledDiscardedSegments

Description	This attribute contains the number of segments discarded at the called end due to rate enforcement when no rate adaptation occurred.
Values	Decimal (0..4294967295)

ATTRIBUTE callingTotalPwmBytes

Description	This attribute contains the calling end peak water mark for the total number of ingress bytes.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEirPwmBytes

Description	This attribute contains the calling end peak water mark for the number of ingress bytes carried on frames with DE-bit = 1.
Values	Decimal (0..4294967295)

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ATTRIBUTE callingCirPwmBytes

Description — This attribute contains the calling end peak water mark for the number of ingress bytes carried on frames with DE-bit = 0.

Values — Decimal (0..4294967295)

ATTRIBUTE calledTotalPwmBytes

Description — This attribute contains the called end peak water mark for the total number of ingress bytes.

Values — Decimal (0..4294967295)

ATTRIBUTE calledEirPwmBytes

Description — This attribute contains the called end peak water mark for the number of ingress bytes carried on frames with DE-bit = 1.

Values — Decimal (0..4294967295)

ATTRIBUTE calledCirPwmBytes

Description — This attribute contains the called end peak water mark for the number of ingress bytes carried on frames with DE-bit = 0.

Values — Decimal (0..4294967295)

ATTRIBUTE recordIdentifier

Description

recordIdentifier attribute indicates the contents of the accounting record.

Values

gvcVintage4
frsVintage4
frsLocalCounts
frsLocalAndRemoteCounts
frsShortLocalCounts
frsShortLocalAndRemoteCounts
frsInterworkingPvcRecord
frsInterworkingSvcRecord
frsIpOptPvcRecord

ATTRIBUTE callingTotalPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)
The value is relative to *collectionTimes* attribute together with *peakWaterMarkInterval* attribute in *Collector* component. For example if *collectionTimes* is set to 16:00 and value of *callingTotalPwmIntervalNumber* is reported 3 and attribute *peakWaterMarkInterval* in *Collector* component is set to 5 minutes, then peak traffic happened between 16:15 and 16:20.

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Values Decimal (0..1000)

ATTRIBUTE callingEirPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values Decimal (0..1000)

ATTRIBUTE callingCirPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values Decimal (0..1000)

ATTRIBUTE calledTotalPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values Decimal (0..1000)

ATTRIBUTE calledEirPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values Decimal (0..1000)

ATTRIBUTE calledCirPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values Decimal (0..1000)

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ATTRIBUTE originalNpi

Description

This attribute contains numbering plan indicator for originally called address.

Values

x121
e164

ATTRIBUTE originalAddress

Description

This attribute contains originally called DataNetworkAddress of the interface if call was redirected.

Values

BCD (1..15)

ATTRIBUTE originalServiceType

Description

This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface Dna as accountClass.

Values

Decimal (0..255)

ATTRIBUTE callingTransferPriority

Description

This attribute indicates the transfer priority used in the direction towards the network.

The transfer priority is a preference configured for an application according to its time-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n is the transfer priority index, contains a default setting for routing class of service (***multimedia, delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a network operator if required.

Values

Decimal (0..255)

ATTRIBUTE calledTransferPriority

Description

This attribute indicates the transfer priority used in the direction from the network.

The transfer priority is a preference configured for an application according to its time-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

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Each transfer priority n, where n is the transfer priority index, contains a default setting for routing class of service (***multimedia, delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a network operator if required.

Values — Decimal (0..255)

ATTRIBUTE circuitId

Description — This attribute indicates a unique string, set by the operator as the "*correlationTag*" provisioned attribute, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network.

Typically, the attribute is provisioned, as the *correlationTag*, with the same value at both ends of the connection, but this is not mandatory. As a default, there is no *correlationTag* provisioned against the DLCI.

For single-sided accounting with the Egress Protocol on, the circuit identifier specifies the *correlationTag* value provisioned at the local interface only. There is no circuit identifier for the remote DLCI in the record. For double-sided accounting, the accounting records generated at each end contains the local *correlationTag* value.

Values — String (32, ASCII)

ATTRIBUTE callingIpAddress

Description — This attribute contains the calling IP address of the Frame Relay interface for the connection. It is only applicable when using BNX. Its value is taken from the *ipAddress* attribute in the *BnxProtocol* subcomponent of the FrUni. The *ipAddress* attribute must have been set to an IP address which is associated with the Frame Relay port. This address must be in the same subnet as the associated protocol port.

Values — IP address

ATTRIBUTE calledIpAddress

Description — This attribute contains the called IP address for the connection. It is only applicable when using BNX. Its value is taken from the *calledIpAddress* attribute in the *BnxIwf* subcomponent of the DLCI for the connection. The *calledIpAddress* attribute must have been set to the destination IP address which receives the datagrams.

Values — IP address

RESPONSE

Description — This response displays the port test statistics.

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ATTRIBUTE elapsedTime

Description	This attribute is the number of minutes elaspsed since the test started.
Values	Decimal (0..4294967295)

ATTRIBUTE timeRemaining

Description	This attribute is the number of minutes remaining before the test terminates itself.
Values	Decimal (0..4294967295)

ATTRIBUTE frmTx

Description	This attribute is the number of frames sent during the test period.
Values	Long Integer

ATTRIBUTE bitsTx

Description	This attribute is the number of bits sent during the test period.
Values	Long Integer

ATTRIBUTE frmRx

Description	This attribute is the total number of frames received during the test period.
Values	Long Integer

ATTRIBUTE bitsRx

Description	This attribute is the total number of bits received during the test period.
Values	Long Integer

ATTRIBUTE erroredFrmRx

Description	This attribute is the total number of errored frame received during the test period.
Values	Long Integer

RESPONSE IP Account Record Information

Description	This record describes the attributes specific to the IP accounting. All items which belong to an IP accounting record are defined here.Ip Accounting records are generated for individual *ProtocolPorts*.

ATTRIBUTE recordIdentifier

Description	This attribute distinguishes the IP accounting record from other types of accounting records.
Values	ipAcctRecord

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ATTRIBUTE vpnId

Description — This attribute indicates the virtual Private Intranet Identifier to which the *ProtocolPort* component instance belongs.
Note that this attribute will be obsoleted in the near future. It's functionality is replaced by the *virtualPrivateNetworkIdentifier* attribute. Any affected tools that use this attribute should be converted to use the *vpnId* attribute instead.

Values — Decimal (1..255)

ATTRIBUTE collectReason

Description — This attribute indicates the reason(s) for accounting collection which are the same as the ***accountCollection*** attribute in *Vr Ip*. It can be any combination of the following reasons: ***bill, test, study, audit,*** or ***force***.

Set of
bill
test
study
audit
force

ATTRIBUTE protocolPortIfIndex

Description — This attribute indicates the interface index of the Protocol Port that generated this accounting record

Values — Decimal (1..1024)

ATTRIBUTE protocolPortInstance

Description — This attribute indicates the instance name of the protocol port that generated this accounting record.

Values — String (1..20, ASCII)

ATTRIBUTE mediaType

Description — This attribute indicates the type of media over which IP traffic is being carried. It is one of the following values:
pointToPointTunnel
pointToMultipointTunnel
frameRelay
atmMpe
ppp
A value of ***frameRelay*** is used by the *ProtocolPort* components that are linked to either the *IpDlciGroup* or *FrDte* component.

Values
pointToPointTunnel
pointToMultipointTunnel
frameRelay
atmMpe
ppp

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ATTRIBUTE localNodeIdentifier

Description	This attribute identifies the node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData*.
Values	Decimal (256..49151)

ATTRIBUTE vrInstance

Description	This attribute indicates which VR generated the accounting record.
Values	String (1..16, ASCII)

ATTRIBUTE startTime

Description	This attribute represents the starting time of the accounting interval for the *ProtocolPort.* In subsequent records, this attribute represents the starting time of the current accounting collection interval. When TODA (time of day accounting) is enabled, the collection intervals are delimited by the entries in the TODA schedule (the *Col/accounting collectionTimes* attribute). When TODA is disabled, they are delimited by a timer that expires every 12-hours.
Values	Time (DHMS)

ATTRIBUTE endTime

Description	This attribute indicates the time when the current accounting collection interval ended. In the last accounting record this attribute represents the time when accounting was disabled. When TODA (time of day accounting) is enabled, the collection intervals are delimited by the entries in the TODA schedule (the *Col/accounting collectionTimes* attribute). When TODA is disabled, they are delimited by a timer that expires every 12-hours.
Values	Time (DHMS)

ATTRIBUTE elapsedTime

Description	This attribute indicates the length of time, in 0.1 second increments, the protocol port was enabled during the reported accounting interval. It is the true duration of the accounting interval, measured independently of the start and end time (since start time and end time can be affected by the adjustment of the clock, elapsed time can be shorter or longer than the difference between them).
Values	Decimal (0..16777215)

ATTRIBUTE ipTunnelSrcAddr

Description	This attribute indicates the source IP Tunnel address in the shared domain.This attribute appears in the accounting record only if the *mediaType* is:

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pointToPointTunnel
pointToMultipointTunnel

Values IP address

ATTRIBUTE ipTunnelDestAddr

Description This attribute indicates the destination IP Tunnel address in the shared doamin.This attribute appears in the accounting record only if the *mediaType* is:
pointToPointTunnel
pointToMultipointTunnel

Values IP address

ATTRIBUTE InOctets

Description This attribute contains the aggregate number of octets received by the *ProtocolPort* during the accounting interval.

Values Long Integer

ATTRIBUTE OutOctets

Description This attribute contains the aggregate number of octets transmitted by the *ProtocolPort* during the accounting interval.

Values Long Integer

ATTRIBUTE InPkts

Description This attribute contains the aggregate number of packets received by the *ProtocolPort* during the accounting interval.

Values Long Integer

ATTRIBUTE OutPkts

Description This attribute contains the aggregate number of packets transmitted by a *ProtocolPort* during the accounting interval.

Values Long Integer

ATTRIBUTE InDiscards

Description This attribute indicates the aggregate number of packets received by the *ProtocolPort* that were discarded, during the accounting interval.

Values Long Integer

ATTRIBUTE OutDiscards

Description This attribute indicates the aggregate number of packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.

Values Long Integer

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ATTRIBUTE Cos0InOctets

Description — This attribute contains the total number of Cos0 octets received by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos0OutOctet

Description — This attribute contains the total number of Cos0 octets transmitted by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos0InPkts

Description — This attribute contains the number of Cos0 packets received by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos0OutPkts

Description — This attribute contains the total number of Cos0 packets transmitted by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos0InDiscards

Description — This attribute indicates the number of Cos0 packets received by the *ProtocolPort* that were discarded, during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos0OutDiscards

Description — This attribute indicates the number of Cos0 packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos1InOctets

Description — This attribute contains the total number of Cos1 octets received by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos1OutOctet

Description — This attribute contains the total number of Cos1 octets transmitted by the *ProtocolPort* during the accounting interval.

Values — Long Integer

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ATTRIBUTE Cos1InPkts

Description — This attribute contains the number of Cos1 packets received by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos1OutPkts

Description — This attribute contains the total number of Cos1 packets transmitted by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos1InDiscards

Description — This attribute indicates the number of Cos1 packets received by the *ProtocolPort* that were discarded, during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos1OutDiscards

Description — This attribute indicates the number of Cos1 packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos2InOctets

Description — This attribute contains the total number of Cos2 octets received by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos2OutOctet

Description — This attribute contains the total number of Cos2 octets transmitted by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos2InPkts

Description — This attribute contains the number of Cos2 packets received by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos2OutPkts

Description — This attribute contains the total number of Cos2 packets transmitted by the *ProtocolPort* during the accounting interval.

Values — Long Integer

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ATTRIBUTE Cos2InDiscards

Description — This attribute indicates the number of Cos2 packets received by the *ProtocolPort* that were discarded, during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos2OutDiscards

Description — This attribute indicates the number of Cos2 packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos3InOctets

Description — This attribute contains the total number of Cos3 octets received by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos3OutOctet

Description — This attribute contains the total number of Cos3 octets transmitted by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos3InPkts

Description — This attribute contains the number of Cos3 packets received by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos3OutPkts

Description — This attribute contains the total number of Cos3 packets transmitted by the *ProtocolPort* during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos3InDiscards

Description — This attribute indicates the number of Cos3 packets received by the *ProtocolPort* that were discarded, during the accounting interval.

Values — Long Integer

ATTRIBUTE Cos3OutDiscards

Description — This attribute indicates the number of Cos3 packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.

Values — Long Integer

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ATTRIBUTE virtualPrivateNetworkIdentifier

Description — This attribute indicates the Virtual Private Network (VPN) associated with the Virtual Router that relates to this accounting record. This is a globally unique identifier composed of a three-octet long Organizationally Unique Identifier (OUI) followed by a four-octet long VPN index as described in RFC 2685.The value "***000000:00000000***" identifies an unspecified VPN.

Values — String (7, Hex)

ATTRIBUTE ipTunnelVcgVr

Description — This attribute indicates the IP tunnel Carrier VR (VCG) and it is used by the RTD feature only. This attribute appears in the accounting record only if the *mediaType* is:
pointToPointTunnel
pointToMultipointTunnel

Values — String (1..16, ASCII)

ATTRIBUTE ipTunnelVcgIpAddr

Description — This attribute indicates the BGP loopback IP address of the VCG VR used by RTD feature. This attribute appears in the accounting record only if the *mediaType* is:
pointToPointTunnel
pointToMultipointTunnel

Values — IP address

RESPONSE Full Vc Accounting Information

Description

This response describes the attributes specific to a full Vc accounting record. All items which belong to a full Vc accounting record are defined here. This definition is translated into Service Data Description files - sdd file. Accounting Data Server (ADS) uses the sdd file to decode accounting records.

ATTRIBUTE recordType

Description

recordType attribute indicates the type of the record. For the first record in the accounting period, only *first* is set to 1. For the last record, only *last* is set to 1. For intermediate records, both *first* and *last* are set to 0. If there is only one record in the accounting period, then both *first* and *last* are set to 1.
first, ~last - first record
~first, ~last - intermediate record.
~first, last - final record.
first, last - first and last record (one only).

Set of — first
last

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ATTRIBUTE callType

Description

This attribute defines the type of call for which this accounting record is issued.
~gateway, ~localNetwork - non gateway call.
~gateway, localNetwork - gateway call to another network
gateway, ~localNetwork - gateway call from another network
gateway, localNetwork - gateway transit call.

Set of

gateway
localNetwork

ATTRIBUTE callReferenceNumber

Description

This attribute contains the value of the call reference number assigned to each new call. Accounting records are uniquely defined by a call reference number on each function processor. In double ended accounting the *callReferenceNumber* is the same for both accounting records. Call reference number is unique only on function processor.

Values

Decimal (0..16777215)

ATTRIBUTE callingNodeIdentifier

Description

This attribute identifies the calling (originating) node by a unique number assigned to each node in the ModuleData component. (In DPN it is called a NamsId.)

Values

Decimal (256..49151)

ATTRIBUTE callingCustomerIdentifier

Description

This attribute contains the number assigned in each service to a customer and it identifies the customer at the calling end of the call in the Customer Network Management.

Values

Decimal (0; 1..8191)

ATTRIBUTE callingPortIdentifier

Description

This attribute contains the function processor number used by the service issuing the accounting record for the calling (originating) part of the call. If the port information is from DPN, then the pe, port, and pi numbers are respectively encoded as 5, 5, 6 bits.

Values

Decimal (0..65535)

ATTRIBUTE callingNpi

Description

This attribute contains calling numbering plan indicator of the calling address.

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Values x121
e164

ATTRIBUTE callingAddress

Description
This attribute contains the calling DataNetworkAddress of the interface. *callingAddress* includes DNIC (first 4 digits) for X.121, and CC (Country Code) for the E.164 address of the calling end. The maximum length is 15 digits.

Values BCD (1..15)

ATTRIBUTE callingDlci

Description
This attribute contains the calling DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request at the calling end.

Values Decimal (16..1007)

ATTRIBUTE calledNodeIdentifier

Description
This attribute identifies the called (terminating) node by a unique number assigned to each node in the ModuleData component. (In DPN it is called a NamsId.)

Values Decimal (256..49151)

ATTRIBUTE calledCustomerIdentifier

Description
This attribute contains the number assigned in each service to a customer and it identifies the customer at the called end of the call in the Customer Network Management.

Values Decimal (0; 1..8191)

ATTRIBUTE calledPortIdentifier

Description
This attribute contains the function processor number used by the service issuing accounting record for the called (terminating) side of the call. If the port information is from DPN, then the pe, port, and pi numbers are respectively encoded as 5, 5, 6 bits.

Values Decimal (0..65535)

ATTRIBUTE calledNpi

Description This attribute contains the called numbering plan indicator of the called address.

Values x121
e164

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ATTRIBUTE calledAddress

Description

This attribute contains the called DataNetworkAddress of the interface. *calledAddress* includes DNIC (first 4 digits) for X.121, and CC (Country Code) for the E.164 address of the called end. The maximum length is 15 digits.

Values BCD (1..15)

ATTRIBUTE calledDlci

Description

This attribute contains the called DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request at the called end.

Values Decimal (16..1007)

ATTRIBUTE segmentSizeIndex

Description

This attribute is the segment size index provisioned on the module.
It is used to calculate the number of segments sent and received in the accounting record. Two to the power of *segmentSizeIndex* is equal to the segment size (in bytes) provisioned in the *VirtualCircuitSytem* component. For example, if the segment size is 128, then *segmentSizeIndex* is 7.

Values Decimal (0..16)

ATTRIBUTE clearCause

Description This attribute is the clear cause signalled at the end of connection. It is set to H.b0 for intermediate records.

Values Decimal (0..255)

ATTRIBUTE diagnosticCode

Description This attribute is the diagnostic code signalled at the end of connection. It is set to 0 for intermediate records

Values Decimal (0..255)

ATTRIBUTE callingServiceType

Description

This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface Dna as *accountClass*.

Values Decimal (0..255)

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ATTRIBUTE callingCollectReason

Description
This attribute indicates the reason for accounting collection of the calling end (can be any combination of Audit, Study, Test, Billing, Force).

Set of
bill
test
study
audit
force

ATTRIBUTE callingDse

Description
This attribute defines the calling end Data Service Exchange provisioned in Dna as arbitrary number in *serviceExchange* attribute.

Values
Decimal (0..255)

ATTRIBUTE calledServiceType

Description
This attribute indicates the service supported by the port used by the called end-user. This number is provisioned on each interface Dna as *accountClass*.

Values
Decimal (0..255)

ATTRIBUTE calledCollectReason

Description
This attribute indicates the reason for accounting collection of the called end (can be any combination of Audit, Study, Test, Billing, Force).

Set of
bill
test
study
audit
force

ATTRIBUTE calledDse

Description
One byte field defines the called end Data Service Exchange provisioned in Dna as arbitrary number in *serviceExchange* attribute.

Values
Decimal (0..255)

ATTRIBUTE flags

Description
This attribute contains values for call characteristics.
calledEndCharging - called end is charging.
~calledEndCharging - calling end is charging
highPriority - call is high priority.
pvcType - call is Pvc.
~pvcType - call is svc.

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	hunted - call was hunted. redirected - call was redirected. calledGenerated - called end generated accounting record. ~calledGenerated - calling end generated accounting record. calledCleared - call was cleared by called end. ~calledCleared - call was cleared by calling end. unique - accounting record is unique. reachedDataTransfer - call reached data transfer. collReasonValid - collection reasons are valid. userDataInCallReq - user data present in call request. fastSelect - fast select call restrictedResponse - fast select call with restricted response
Set of	calledEndCharging highPriority pvcType hunted redirected calledGenerated calledCleared unique reachedDataTransfer collReasonValid userDataInCallReq fastSelect restrictedResponse

ATTRIBUTE startTime

Description	This attribute represents start time in the accounting record. For SVC it is the time when the call request packet was created. For PVC it is set by the Master VC when the master call is formatted. On subsequent accounting record, the start time corresponds to the end time of the previous record. If Time of Day Accounting (TODA) is used, start time (and end time) correspond to times set in the schedule (set in *Col/accounting collectionTimes* attribute).
Values	Time (DHMS)

ATTRIBUTE endTime

Description	This attribute represents end time in the accounting record. If TODA is used, the end time in non-final records is the time of the TODA period. For 12-hour accounting, the time on non-final records is the time when the 12-hour timer expires at the charged end. On final accounting records, the end time is the time when the disconnect packet is first received. If Time of Day Accounting (TODA) is used, end time (and start time) correspond to times set in the schedule (set in *Col/accounting collectionTimes* attribute).
Values	Time (DHMS)

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ATTRIBUTE elapsedTime

Description

Duration of the call in 0.1 second increments. This time interval is started when call request is processed. If call does not reach data transfer elapsed time is set to 0. Elapsed time represents true measure of the accounting period. It is measured independent of start time and end time. Since start time and end time can be changed externally by adjusting the clock, elapsed time can be shorter or longer than difference between start time and end time. This difference can show as much as 60 seconds on accounting records for the virtual circuits which are idle (carry no traffic) and when TODA is used and is caused in this case by internal TODA detection mechanism. When 12 hour accounting period is used elapsed time is exact or differs by a few seconds from 12 hour duration.

Values Decimal (0..16777215)

ATTRIBUTE localEgressSegments

Description This attribute contains the total number of segments received at the local end.

Values Decimal (0..4294967295)

ATTRIBUTE localIngressSegments

Description This attribute contains the total number of segments sent at the local end.

Values Decimal (0..4294967295)

ATTRIBUTE originalNpi

Description This attribute contains numbering plan indicator for originally called address.

Values x121
e164

ATTRIBUTE originalAddress

Description This attribute contains originally called DataNetworkAddress of the interface if call was redirected.

Values BCD (1..15)

ATTRIBUTE originalServiceType

Description This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface Dna as accountClass.

Values Decimal (0..255)

ATTRIBUTE callingReceiveWindow

Description

This attribute contains the value for the local calling end receive window

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size. For SVC/PVC this field is populated by X.25 and X.75 services, all other services set it to 0.

Values Decimal (0..16)

ATTRIBUTE calledReceiveWindow

Description

This attribute contains the value for the local called end receive window size. For SVC/PVC this field is populated by X.25 and X.75 services, all other services set it to 0.

Values Decimal (0..16)

ATTRIBUTE callingSendWindow

Description

This attribute contains the value for the local calling end send window size. For SVC/PVC this field is populated by X.25 and X.75 services, all other services set it to 0.

Values Decimal (0..16)

ATTRIBUTE calledSendWindow

Description

This attribute contains the value for the local called end send window size. For SVC/PVC this field is populated by X.25 and X.75 services, all other services set it to 0.

Values Decimal (0..16)

ATTRIBUTE callingCalledThruput

Description

This attribute contains throughput class of packets sent from the calling DTE to the called end.

Values Decimal (0..16)

ATTRIBUTE calledCallingThruput

Description

This attribute contains throughput class of packets sent from the called DTE to the calling end.

Values Decimal (0..16)

ATTRIBUTE callingCalledPktSize

Description

This attribute contains the value of the packet size sent from the calling DTE to the called end. The value is base 2 of actual packet size.

Values Decimal (0..16)

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ATTRIBUTE calledCallingPktSize

Description

This attribute contains the value of the packet size sent from the called DTE to the calling end. The value is base 2 of actual packet size.

Values

Decimal (0..16)

ATTRIBUTE recordIdentifier

Description

recordIdentifier attribute indicates the contents of the accounting record.

Values

gvcVintage4
frsVintage4
frsLocalCounts
frsLocalAndRemoteCounts
frsShortLocalCounts
frsShortLocalAndRemoteCounts

ATTRIBUTE localUserResets

Description

This attribute contains the total number of user resets at the local end.

Values

Decimal (0..4294967295)

ATTRIBUTE callingTransferPriority

Description

This attribute indicates the transfer priority used in the direction towards the network.

The transfer priority is a preference configured for an application according to its time-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n is the transfer priority index, contains a default setting for routing class of service (***multimedia, delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a network operator if required.

Values

Decimal (0..255)

ATTRIBUTE calledTransferPriority

Description

This attribute indicates the transfer priority used in the direction from the network.

The transfer priority is a preference configured for an application according to its time-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

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Each transfer priority n, where n is the transfer priority index, contains a default setting for routing class of service (***multimedia, delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a network operator if required.

Values — Decimal (0..255)

RESPONSE Time Change Information

Description

This response describes the attributes specific to an event caused by change of time on the switch. When time is adjusted by more than 20 seconds, time change record is issued and sent to be part of accounting stream. It is then used to keep track of changed of clock for each switch and to explain potential inconsistencies in the accounting records related to start time and end time.

ATTRIBUTE recordType

Description

Always set to first and last.

Set of

first
last

ATTRIBUTE oldDate

Description

This attribute represents old time on the switch before time was adjusted.

Values — Time (DHMS)

ATTRIBUTE newDate

Description

This attribute represents new time on the switch after time was adjusted. Change of time may cause TODA trigger to generate accounting records if time which was adjusted spans TODA expiry. TODA expiry is defined in *Collector/Accounting* component *collectionTimes* attribute.

Values — Time (DHMS)

ATTRIBUTE namsId

Description

This attribute contains *namsId* of the switch which issued time change accounting record. Value of *namsId* is provisioned in *ModuleData* component.

Values — Decimal (256..49151)

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ATTRIBUTE recordIdentifier

Description

recordIdentifier attribute indicates the contents of the accounting record.

Values

gvcVintage4
frsVintage4
frsLocalCounts
frsLocalAndRemoteCounts
frsShortLocalCounts
frsShortLocalAndRemoteCounts
timeChangeRecord

RESPONSE Mpa Voice Accounting Information

Description

This response describes the attributes specific to an MPA voice accounting record. All items which belong to an MPA voice accounting record are defined here. This definition is translated into Service Data Description files - sdd file. Multiservice Data Provider (MDP) uses the sdd file to decode accounting records.

ATTRIBUTE recordIdentifier

Description

This attribute distinguishes the Voice accounting record from other types of accounting records.

Values

mpaVoAccRecord

ATTRIBUTE recordType

Description

This attribute indicates the type of the record. For the first record in the accounting period, only ***first*** is set. For the last record, only ***last*** is set. For intermediate records, neither ***first*** nor ***last*** is set. If there is only one record in the accounting period, then both ***first*** and ***last*** are set.
first, ***~last*** (recordType_first 1, recordType_last 0) - first record
~first, ***~last*** (recordType_first 0, recordType_last 0) - intermediate record.
~first, ***last*** (recordType_first 0, recordType_last 1) - final record.
first, ***last*** (recordType_first 1, recordType_last 1) - first and last record (one only).

Set of

first
last

ATTRIBUTE callCorrelationIdentifier

Description

This attribute indicates a unique value assigned to all accounting records generated by calling and called nodes for this call. The *callCorrelationId* is used during post processing of accounting records to correlate records generated by different nodes. The *callCorrelationId* is always unique in the network with respect to *callCorrelationIds* generated by other function processors. The value of *callCorrelationId* repeats after 2^{24} calls on the same, continually active function processor.

Values

String (13, Hex)

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ATTRIBUTE startTime

Description	This attribute indicates the start time of the accounting record. For the first record, this is the time when the setup message was received. On subsequent accounting records, the *startTime* will be equal to the *endTime* of the previous record. If Time of Day Accounting (TODA) is used, *startTime* is the time of the TODA (set in *Col/accounting collectionTimes* attribute).
Values	Time (DHMS)

ATTRIBUTE endTime

Description	This attribute indicates end time of the accounting record. In the final accounting record for a call, *endTime* is the time when the disconnect packet was received. If TODA is used, *endTime* in non-final records is the time of the TODA. For 12-hour accounting, *endTime* in non-final records is the time when the 12-hour timer expires.
Values	Time (DHMS)

ATTRIBUTE elapsedTime

Description	This attribute indicates the duration of the call in 0.1 second increments. This time interval is started when the call request is processed. *elapsedTime* indicates the true measure of the accounting period. It is measured independent of *startTime* and *endTime*. Since *startTime* and *endTime* can be changed externally by adjusting the clock, *elapsedTime* can be shorter or longer than the difference between *startTime* and *endTime*. When 12 hour accounting is used, *elapsedTime* is exact or differs by a few seconds from a 12 hour duration.
Values	Decimal (0..16777215)

ATTRIBUTE localNodeIdentifier

Description	This attribute identifies the *nodeId* of the node that generated the accounting record. *nodeId* is assigned to each node in the *ModuleData* component.
Values	Decimal (1..4095)

ATTRIBUTE localLogicalProcessor

Description	This attribute indicates the logical processor used by the service issuing the accounting record.
Values	Decimal (0..15)

ATTRIBUTE localPort

Description	This attribute indicates the port used by the service issuing the accounting record.
Values	Decimal (0..1024)

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ATTRIBUTE localMpanlInstanceNo

Description	This attribute indicates the MPANL instance number issuing the accounting record.
Values	Decimal (1..65535)

ATTRIBUTE callingNumber

Description	This attribute indicates the calling number signalled to the node. This may have a length of 0 if the calling number was not provided.
Values	String (0..16, ASCII)

ATTRIBUTE localDlci

Description	This attribute indicates the local dlci number of the interface. This number is assigned to the call request by the node generating this accounting record.
Values	Decimal (0; 16..1007)

ATTRIBUTE calledNumber

Description	This attribute indicates the called number signalled to the node. If *Mpanl/n Voice Acct digitsSuppressed* was provisioned with a non-zero value, that number of trailing digits in *calledNumber* are replaced with “X”s.
Values	String (1..32, ASCII)

ATTRIBUTE connectedNumber

Description	This attribute indicates the connected number signalled to the node. This may have a length of zero if the connected number was not provided.
Values	String (0..16, ASCII)

ATTRIBUTE sourceNpi

Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *sourceDna*. This is the value sent by the source accounting node to the destination accounting node during call setup. The *sourceDna* may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Values	x121 e164

ATTRIBUTE sourceDna

Description	This attribute indicates the data network address (the unique identifier) of the calling addressable switched voice application. This is the value sent by the source accounting node to the destination accounting node during call setup. It is valid in accounting records generated by both ends of the call.
Values	BCD (0..15)

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ATTRIBUTE destinationNpi

Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *destinationDna*. This is the value sent by the destination accounting node to the source accounting node during call setup. The *destinationDna* may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Values	x121 e164

ATTRIBUTE destinationDna

Description	This attribute indicates the data network address (the unique identifier) of the called addressable switched voice application. This is the value sent by the destination accounting node to the source accounting node during call setup. It is valid in accounting records generated by both ends of the call.
Values	BCD (0..15)

ATTRIBUTE clearCause

Description	This attribute indicates the reason the call was cleared. If the call was cleared in the subnet, this attribute contains a Q931 value regardless of the source protocol. If the call was cleared by the MPA, this attribute may contain other information conforming to the specifications of the used protocol. It is set to 0 for intermediate records.
Values	Decimal (0..127)

ATTRIBUTE diagnosticCode

Description	This attribute indicates the diagnostic code signalled at the end of connection. It is set to 0 for intermediate records.
Values	Hex (H.0..H.ffffff)

ATTRIBUTE localServiceType

Description	This attribute indicates the service supported by the port used by the local interface. This number is provisioned on each interface as *accountClass*.
Values	Decimal (0..255)

ATTRIBUTE localCollectReason

Description	This attribute indicates the reason the accounting record was generated (The reason can be any combination of ***audit***, ***study***, ***test***, ***bill***).
Set of	bill test study audit

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ATTRIBUTE localDse

Description — This attribute defines the local end Data Service Exchange provisioned as an arbitrary number in *serviceExchange* attribute.

Values — Decimal (0..255)

ATTRIBUTE localCustomerIdentifier

Description — This attribute indicates the number assigned in each service to a customer. It identifies the customer in the Customer Network Management on the end which generated the accounting record.

Values — Decimal (0; 1..8191)

ATTRIBUTE mpaVoiceFlags

Description — This attribute indicates values for call characteristics.
answered (mpaVoFlags_answered 1) - The call was answered
originating (mpaVoFlags_originating 1) - The local end originated the call.
~originating (mpaVoFlags_originating 0) - The far end originated the call.
unique (mpaVoFlags_unique 1) - If this is set to 1, it guarantees that only the local end generated one or more accounting records for this call.
clearedInSubnet (mpaVoFlags_clearedInSubnet 1) - This flag is only valid in the final accounting record. The value 1 indicates the call was cleared from within the subnet side of this MPANL instance.
~clearedInSubnet (mpaVoFlags_clearedInSubnet 0) - This flag is only valid in the final accounting record. The value 0 indicates the call was cleared from outside the subnet side of this MPANL instance.

Set of — answered
originating
unique
clearedInSubnet

ATTRIBUTE callAnswerTime

Description — This attribute indicates the time in seconds between the setup indication and the call answered indication for answered calls. For unanswered calls, this attribute indicates the time between the setup indication and the call release indication. For values greater than 255 seconds it reports 255 seconds.

Values — Decimal (0..255)

RESPONSE ATM Accounting Record Information

Description — This response describes the attributes specific to the ATM accounting record. All items that belong to an ATM accounting record are defined here.

ATTRIBUTE recordIdentifier

Description — This attribute distinguishes the ATM accounting record from other types of accounting records.

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Values atmAccRecord

ATTRIBUTE recordType

Description The *recordType* attribute indicates the position of the accounting record in a sequence of records generated by a given interface for a given call.

The attribute is a set that contains the value ***first*** for the first record of the call and the value ***last*** for the last record of a call; for calls that generate only one accounting record, both ***first*** and ***last*** are present.; for intermediate records, neither ***first*** nor ***last*** are present.

Set of
first
last

ATTRIBUTE callConnId

Description This attribute may be used by downstream processing systems to correlate the accounting records issued for the same call at different interfaces (nodes) in the network. For SVCs (switched virtual connections) and S-PVCs (soft permanent virtual connections), the *callConnId* is generated by the switch and is unique for every call in the network. For PVCs (permanent virtual connections), the *callConnId* is provisioned in the *correlationTag* attribute of the *AtmIf Vcc Vcd* or *AtmIf Vpc Vpd* component.

Values String (64, Hex)

ATTRIBUTE callingCollectReason

Description This attribute indicates the reason(s) for accounting collection at the ATM interface. It can be any combination of the following reasons: ***Billing, Test, Study, Audit,*** or ***Force***. For SVCs and SPVCs, it indicates the value provisioned in attribute *accountCollection* of component *AtmIf Uni* or *Atmif Iisp*. For PVCs, it indicates the value provisioned in attribute *accountCollection* of *NAcct*.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledCollectReason* is present for both incoming and outgoing calls.

Set of
bill
test
study
audit
force

ATTRIBUTE calledCollectReason

Description This attribute indicates the reason(s) for accounting collection at the ATM interface. It can be any combination of the following reasons: ***Billing, Test, Study, Audit,*** or ***Force***. For SVCs and SPVCs, it indicates the value provisioned in attribute *accountCollection* of component *AtmIf Uni* or *AtmIf Iisp*. For PVCs, it indicates the value provisioned in attribute

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accountCollection of component *AtmIf NAcct*.

For SVCs and SPVCs, this attribute is present only for outgoing calls.

For PVCs, only *calledCollectReason* is present for both incoming and outgoing calls.

Set of
bill
test
study
audit
force

ATTRIBUTE callingServiceType

Description

This attribute indicates the service type of the interface that generated the accounting record. For SVCs and SPVCs, the value is provisioned in attribute *accountClass* for each ATM interface (under the *AtmIf Uni* or *AtmIf Iisp* component). For PVCs, it indicates the value provisioned in attribute *accountClass* of component *AtmIf NAcct*.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledServiceType* is present for both incoming and outgoing calls.

Values

Decimal (0..255)

ATTRIBUTE calledServiceType

Description

This attribute indicates the service type of the interface that generated the accounting record. For SVCs and SPVCs, the value is provisioned in attribute *accountClass* for each ATM interface (under the *AtmIf Uni* or *AtmIf Iisp* component). For PVCs, the value is provisioned in attribute *accountClass* for each ATM interface (under the *AtmIf NAcct* component).

For SVCs and SPVCs, this attribute is present only for outgoing calls.

For PVCs, only *calledServiceType* is present for both incoming and outgoing calls.

Values

Decimal (0..255)

ATTRIBUTE callingDse

Description

This attribute indicates the Data Service Exchange associated with the ATM interface. For SVCs and SPVCs, it indicates the value provisioned in attribute *serviceExchange* of component *AtmIf Uni* or *AtmIf Iisp*. For PVCs, it indicates the value provisioned in attribute *serviceExchange* of component *AtmIf NAcct*.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledDse* is present for both incoming and outgoing calls.

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Values	Decimal (0..255)

ATTRIBUTE calledDse

Description	This attribute indicates the Data Service Exchange associated with the ATM interface. For SVCs and SPVCs, it indicates the value provisioned in attribute *serviceExchange* of component *AtmIf Uni* or *AtmIf Iisp*. For PVCs, it indicates the value provisioned in attribute *serviceExchange* of component *AtmIf NAcct*. For SVCs and SPVCs, this attribute is present only for outgoing calls. For PVCs, only *calledDse* is present for both incoming and outgoing calls.
Values	Decimal (0..255)

ATTRIBUTE callOrigMethod

Description	This attribute indicates whether the call is point-to-point, point-to-multipoint, multipoint-to-multipoint, or multipoint-to-point.
Values	pointToPoint pointToMultipt multiptToPoint multiptToMultipt

ATTRIBUTE callType

Description	This attribute indicates the type of call. It is one of the following values: ***pvcChannel*** (switched virtual connection) ***spvcChannel*** (soft permanent virtual connection) ***pvcChannel*** (permanent virtual channel transporting a nailed up connection) ***pvcPath*** (permanent virtual path transporting a nailed up connection)
Values	pvcChannel pvcPath svcChannel spvcChannel

ATTRIBUTE connPointType

Description	This attribute indicates what type of connection point generated the call record: ***originating***, ***intermediate***, or ***terminating***. It can be used by downstream processing systems when correlating two or more records for the same call.
Values	originating intermediate terminating

ATTRIBUTE atmInterfaceNumber

Description	This attribute indicates the number of the ATM interface that generates the accounting record.

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Values	Decimal (1..4095)

ATTRIBUTE callVpi

Description	This attribute indicates the VPI of the connection point at the interface where the accounting record is generated.
Values	Decimal (0..4095)

ATTRIBUTE callVci

Description	This attribute indicates the VCI of the connection point at the interface where the accounting record is generated.
Values	Decimal (0..65535)

ATTRIBUTE atmCallTermCauseValue

Description	This attribute indicates the call termination cause value as defined by the ATM Forum AtmIf UNI 3.1 specification. It is set to 0 for non-final records.
Values	Decimal (0..255)

ATTRIBUTE callTermInSetup

Description	This attribute indicates whether or not the call was terminated in setup (unsuccessful call attempt).
Values	false true

ATTRIBUTE cellCountValidityFlag

Description	This attribute indicates whether or not the cell counts in this accounting record are valid.
Values	invalid valid

ATTRIBUTE startTime

Description	In the first accounting record for a call, this attribute indicates the time the call was set up. In subsequent records, this attribute represents the time the current accounting collection interval started. When TODA (time of day accounting) is enabled, the collection intervals are delimited by the entries in the TODA schedule (the *Col/accounting collectionTimes* attribute). When TODA is disabled, they are delimited by a timer that expires every 12-hours (per call).
Values	Time (DHMS)

ATTRIBUTE endTime

Description	In non-final accounting records, this attribute indicates the time the current accounting collection interval ended. In the final record for a call, this attribute represents the time the call was cleared.

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When TODA is enabled, the collection intervals are delimited by the entries in the TODA schedule (the *Col/accounting collectionTimes* attribute). When TODA is disabled, they are delimited by a timer that expires every 12-hours (per call).

Values — Time (DHMS)

ATTRIBUTE elapsedTime

Description — This attribute indicates the length of time, in 0.1 second increments, the connection was enabled during the reported accounting interval. It is the true duration of the accounting interval, measured independently of the start and end time (since start time and end time can be affected by the adjustment of the clock, elapsed time can be shorter or longer than the difference between them).

Values — Decimal (0..16777215)

ATTRIBUTE callingNsapAddr

Description — This attribute indicates the NSAP address of the calling party.

This attribute is not present in accounting records for PVCs.

Values — String (20, Hex)

ATTRIBUTE calledNsapAddr

Description — This attribute indicates the NSAP address of the called party.

This attribute is not present in accounting records for PVCs.

Values — String (20, Hex)

ATTRIBUTE callingNsapSubAddr

Description — This attribute indicates the saved NSAP address of the calling party (which is restored when leaving the public network).

This attribute is not present in accounting records for PVCs.

Values — String (20, Hex)

ATTRIBUTE calledNsapSubAddr

Description — This attribute indicates the saved NSAP address of the called party (which is restored when leaving the public network).

This attribute is not present in accounting records for PVCs.

Values — String (20, Hex)

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ATTRIBUTE callForwPcrClp0

Description — This attribute indicates the Peak Cell Rate (PCR) for the connection in the forward direction, for high-priority cells (with CLP=0). The value is in cells per second.

Values — Decimal (0..4294967295)

ATTRIBUTE callForwPcrClp01

Description — This attribute indicates the Peak Cell Rate (PCR) for the connection in the forward direction, for all cells (with CLP=0 or CLP=1). The value is in cells per second.

Values — Decimal (0..4294967295)

ATTRIBUTE callForwScrClp0

Description — This attribute indicates the Sustained Cell Rate (SCR) for the connection in the forward direction, for high-priority cells (with CLP=0). The value is in cells per second.

Values — Decimal (0..4294967295)

ATTRIBUTE callForwScrClp01

Description — This attribute indicates the Sustained Cell Rate (SCR) for the connection in the forward direction, for all cells (with CLP=0 or CLP=1). The value is in cells per second.

Values — Decimal (0..4294967295)

ATTRIBUTE callForwMbsClp0

Description — This attribute indicates the Maximum Burst Size (MBS) for the connection in the forward direction, for high-priority cells (with CLP=0). The value is in cells.

Values — Decimal (0..4294967295)

ATTRIBUTE callForwMbsClp01

Description — This attribute indicates the Maximum Burst Size (MBS) for the connection in the forward direction, for all cells (with CLP=0 or CLP=1). The value is in cells.

Values — Decimal (0..4294967295)

ATTRIBUTE callForwQos

Description — This attribute indicates the quality of service (QoS) for the connection in the forward direction. The values of the QoS are conforming to the ATM Forum Atmif UNI 3.1 specification.

Values — Decimal (0..4)

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ATTRIBUTE callBackPcrClp0

Description — This attribute indicates the Peak Cell Rate (PCR) for the connection in the backward direction, for high-priority cells (with CLP=0). The value is in cells per second.

Values — Decimal (0..4294967295)

ATTRIBUTE callBackPcrClp01

Description — This attribute indicates the Peak Cell Rate (PCR) for the connection in the backward direction, for all cells (with CLP=0 or CLP=1). The value is in cells per second.

Values — Decimal (0..4294967295)

ATTRIBUTE callBackScrClp0

Description — This attribute indicates the Sustained Cell Rate (SCR) for the connection in the backward direction, for high-priority cells (with CLP=0). The value is in cells per second.

Values — Decimal (0..4294967295)

ATTRIBUTE callBackScrClp01

Description — This attribute indicates the Sustained Cell Rate (SCR) for the connection in the backward direction, for all cells (with CLP=0 or CLP=1). The value is in cells per second.

Values — Decimal (0..4294967295)

ATTRIBUTE callBackMbsClp0

Description — This attribute indicates the Maximum Burst Size (MBS) for the connection in the backward direction, for high-priority cells (with CLP=0). The value is in cells.

Values — Decimal (0..4294967295)

ATTRIBUTE callBackMbsClp01

Description — This attribute indicates the Maximum Burst Size (MBS) for the connection in the backward direction, for all cells (with CLP=0 or CLP=1). The value is in cells.

Values — Decimal (0..4294967295)

ATTRIBUTE callBackQos

Description — This attribute indicates the quality of service (QoS) for the connection in the backward direction. The values of the QoS are conforming to the ATM Forum Uni 3.1 specification.

Values — Decimal (0..4)

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ATTRIBUTE ingressCellCountClp0

Description — This attribute contains the number of high priority cells (with CLP=0) received from the link during the accounting interval.

Values — Long Integer

ATTRIBUTE ingressCellCountClp01

Description — This attribute indicates the total number of cells (with CLP=0 or CLP=1) received from the link during the accounting interval.

Values — Long Integer

ATTRIBUTE egressCellCountClp0

Description — This attribute contains the number of high priority cells (with CLP=0) transmitted on the link during the accounting interval.

Values — Long Integer

ATTRIBUTE egressCellCountClp01

Description — This attribute indicates the total number of cells (with CLP=0 or CLP=1) transmitted on the link during the accounting interval.

Values — Long Integer

ATTRIBUTE ingressDiscardedClp0

Description — This attribute indicates the number of high priority cells or frames (with CLP=0) received from the link and discarded (not transmitted to the switch) during the accounting interval.

For consistency with other operational measurements for various applications, the count is expressed either as number of cells or as number of frames.

For applications: Loop, CES, Wireless, PVG, and ABS, the count is expressed in cells.

For applications: FrAtm, PORS, ATMMPE, and control channels for SVCs, the count is expressed in frames.

For applications: Test, SVCs, SVPs, and MPLS, the count is expressed in cells unless AAL5 is used. When AAL5 is used, the count is expressed in frames.

Values — Long Integer

ATTRIBUTE ingressDiscardedClp01

Description — This attribute indicates the total number of cells or frames (with CLP=0 or CLP=1) received from the link and discarded (not transmitted to the switch) during the accounting interval.

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For consistency with other operational measurements for various applications, the count is expressed either as number of cells or as number of frames.

For applications: Loop, CES, Wireless, PVG, and ABS, the count is expressed in cells.

For applications: FrAtm, PORS, ATMMPE, and control channels for SVCs, the count is expressed in frames.

For applications: Test, SVCs, SVPs, and MPLS, the count is expressed in cells unless AAL5 is used. When AAL5 is used, the count is expressed in frames.

Values — Long Integer

ATTRIBUTE egressDiscardedClp0

Description — This attribute indicates the number of high priority cells or frames (with CLP=0) received from the switch and discarded (not transmitted on the link) during the accounting interval.

For consistency with other operational measurements for various applications, the count is expressed either as number of cells or as number of frames.

For applications: Loop, CES, Wireless, PVG, and ABS, the count is expressed in cells.

For applications: FrAtm, PORS, ATMMPE, and control channels for SVCs, the count is expressed in frames.

For applications: Test, SVCs, SVPs, and MPLS, the count is expressed in cells unless AAL5 is used. When AAL5 is used, the count is expressed in frames.

Values — Long Integer

ATTRIBUTE egressDiscardedClp01

Description — This attribute indicates the total number of cells or frames (with CLP=0 or CLP=1) received from the switch and discarded (not transmitted on the link) during the accounting interval.

For consistency with other operational measurements for various applications, the count is expressed either as number of cells or as number of frames.

For applications: Loop, CES, Wireless, PVG, and ABS, the count is expressed in cells.

For applications: FrAtm, PORS, ATMMPE, and control channels for SVCs, the count is expressed in frames.

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For applications: Test, SVCs, SVPs, and MPLS, the count is expressed in cells unless AAL5 is used. When AAL5 is used, the count is expressed in frames.

Values — Long Integer

ATTRIBUTE callTrafficMgmt

Description — This attribute indicates the traffic management policy in effect for the call: tagging (setting CLP=1) or dropping cells.
If ***tagFwd*** is present, then tagging is enabled in the forward direction, otherwise cells are dropped; if ***tagBkwd*** is present, then tagging is enabled in the backward direction, otherwise cells are dropped.

Set of — tagFwd
tagBwd

ATTRIBUTE callBestEffort

Description — This attribute indicates whether the “best effort” request was specified in the call setup message.

Values — false
true

ATTRIBUTE callingCustomerIdentifier

Description — This attribute contains the number assigned in each service to a customer and it identifies the customer at the calling end of the call in the Customer Network Management.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledCustomerIdentifier* is present for both incoming and outgoing calls.

Values — Decimal (0..8191)

ATTRIBUTE calledCustomerIdentifier

Description — This attribute contains the number assigned in each service to a customer and it identifies the customer at the called end of the call in the Customer Network Management.

For SVCs and SPVCs, this attribute is present only for outgoing calls.

For PVCs, only *calledCustomerIdentifier* is present for both incoming and outgoing calls.

Values — Decimal (0..8191)

ATTRIBUTE callingNodeIdentifier

Description — This attribute identifies the calling node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the

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component *ModuleData*.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledNodeIdentifier* is present for both incoming and outgoing calls.

Values — Decimal (256..49151)

ATTRIBUTE calledNodeIdentifier

Description — This attribute identifies the called node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData*

For SVCs and SPVCs, this attribute is present only for outgoing calls.

For PVCs, only *calledNodeIdentifier* is present for both incoming and outgoing calls.

Values — Decimal (256..49151)

ATTRIBUTE minimumCtd

Description — This attribute indicates the minimum calculated cell transfer delay value in microseconds for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

This value is visible only for SPVC and SPVP connections when the *ctdCalculation* attribute of the *AtmIf* component is ***on*** and the *segSwitchSideLoopback* attribute value is ***on*** for the connection.

The value is 0 when the switch-side loopback is not working.

Values — Decimal (0..2147483647)

ATTRIBUTE maximumCtd

Description — This attribute indicates the maximum calculated cell transfer delay value in microseconds for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

This value is visible only for SPVC and SPVP connections when the *ctdCalculation* attribute of the *AtmIf* component is ***on*** and the *segSwitchSideLoopback* attribute value is ***on*** for the connection.

The value is 0 when the switch-side loopback is not working.

Values — Decimal (0..2147483647)

ATTRIBUTE averageCtd

Description — This attribute indicates the average of all calculated cell transfer delay in microseconds for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

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This value is visible only for SPVC and SPVP connections when the *ctdCalculation* attribute of the *AtmIf* component is ***on*** and the *segSwitchSideLoopback* attribute value is ***on*** for the connection.

The value is 0 when the switch-side loopback is not working.

Values — Decimal (0..2147483647)

ATTRIBUTE sampleSizeCtd

Description — This attribute indicates the number of loopback cells sampled for cell transfer delay calculations.

This value is included only for SPVC and SPVP connections when the *ctdCalculation* attribute of the *AtmIf* component is ***on*** and the *segSwitchSideLoopback* attribute value is ***on*** for the connection.

Values — Decimal (0..16384)

ATTRIBUTE lFwdTotalUserCellTxClp0

Description — This attribute indicates the total number of user cells with CLP=0 transmitted from the local side in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values — Long Integer

ATTRIBUTE lFwdTotalUserCellTxClp01

Description — This attribute indicates the total number of user cells with CLP=0+1 transmitted from the local side in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values — Long Integer

ATTRIBUTE lFwdTotalUserCellRxClp0

Description — This attribute indicates the total number of user cells with CLP=0 received on the Remote Side in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values — Long Integer

ATTRIBUTE lFwdTotalUserCellRxClp01

Description — This attribute indicates the total number of user cells with CLP=0+1 received on the Remote Side in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values — Long Integer

ATTRIBUTE lFwdTotalPmCellDiscardCount

Description — This attribute indicates the total number of Performance Monitoring cells discarded in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

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Values Decimal (0..4294967295)

ATTRIBUTE IBwdTotalUserCellTxClp0

Description This attribute indicates the total number of user cells with CLP=0 transmitted from the Remote Side in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE IBwdTotalUserCellTxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 transmitted from the Remote Side in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE IBwdTotalUserCellRxClp0

Description This attribute indicates the total number of user cells with CLP=0 received on the local side in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE IBwdTotalUserCellRxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 received on the local side in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE IBwdTotalPmCellDiscardCount

Description This attribute indicates the total number of Performance Monitoring cells discarded in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Decimal (0..4294967295)

ATTRIBUTE IArTotalTime

Description This attribute indicates the total time in seconds that is used to calculate the Availability Ratio. This value is included only when Performance Monitoring is provisioned on the link side.

Values Decimal (0..4294967295)

ATTRIBUTE IArAvailableTime

Description This attribute indicates the total time in seconds that a connection was available. This value is included only when Performance Monitoring is provisioned on the link side.

Values Decimal (0..4294967295)

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ATTRIBUTE sFwdTotalUserCellTxClp0

Description — This attribute indicates the total number of user cells with CLP=0 transmitted from the local side in the forward direction. This value is included only when performance Monitoring is provisioned on the switch side.

Values — Long Integer

ATTRIBUTE sFwdTotalUserCellTxClp01

Description — This attribute indicates the total number of user cells with CLP=0+1 transmitted from the local side in the forward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values — Long Integer

ATTRIBUTE sFwdTotalUserCellRxClp0

Description — This attribute indicates the total number of user cells with CLP=0 received on the Remote Side in the forward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values — Long Integer

ATTRIBUTE sFwdTotalUserCellRxClp01

Description — This attribute indicates the total number of user cells with CLP=0+1 received on the Remote Side in the forward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values — Long Integer

ATTRIBUTE sFwdTotalPmCellDiscardCount

Description — This attribute indicates the total number of Performance Monitoring cells discarded in the forward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values — Decimal (0..4294967295)

ATTRIBUTE sBwdTotalUserCellTxClp0

Description — This attribute indicates the total number of user cells with CLP=0 transmitted from the Remote Side in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values — Long Integer

ATTRIBUTE sBwdTotalUserCellTxClp01

Description — This attribute indicates the total number of user cells with CLP=0+1 transmitted from the Remote Side in the backward direction. This value is

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included only when Performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sBwdTotalUserCellRxClp0

Description This attribute indicates the total number of user cells with CLP=0 received on the local side in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sBwdTotalUserCellRxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 received on the local side in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sBwdTotalPmCellDiscardCount

Description This attribute indicates the total number of Performance Monitoring cells discarded in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Decimal (0..4294967295)

ATTRIBUTE sArTotalTime

Description This attribute indicates the total time in seconds that is used to calculate the Availability Ratio. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Decimal (0..4294967295)

ATTRIBUTE sArAvailableTime

Description This attribute indicates the total time in seconds that a connection was available. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Decimal (0..4294967295)

ATTRIBUTE atmServiceCategory

Description This attribute indicates the ATM service category for both directions of the connection.

Values
UBR
CBR
rt-VBR
nrt-VBR
ABR

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ATTRIBUTE circuitId

Description

This attribute indicates a unique string, set by the operator allowing the customer to assign a meaningful name to identify and manage the VCC/ VPC level components that make up a circuit. It is provisioned in the *correlationTag* attribute of the *AtmIf Vcc Vcd* or *AtmIf Vpc Vpd* component. Downstream processing may use this attribute to correlate accounting records issued at different nodes in the network.

Values

String (64, ASCII)

ATTRIBUTE rxUpcViolationOnEnforcer1

Description

This attribute counts the UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored. This attribute is not applicable for standard *VPT VCC* components.

This attribute is not applicable on CQC-based, APC-based, and QRD-based ATM cards.

When the value of the *rxTrafficDescType* attribute for this connection. is 3, 4, 5, 6, 7 or 8, Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1.

If UPC is enforced, all non-conforming cells are discarded by this enforcer. These discarded cells are included in *rxCellDiscard* attribute value.

For basic *Vpt* components, this attribute indicates the aggregated total of all *rxUpcViolationOnEnforcer1* attribute values for the *Vcc* components associated with the *Vpt* component.

The counter wraps to zero when it exceeds its maximum value.

Values

Long Integer

ATTRIBUTE rxUpcViolationOnEnforcer2

Description

This attribute counts the UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored. This attribute is not applicable for standard *VPT VCC* components.

This attribute is not applicable on CQC-based, APC-based, and QRD-based ATM cards.

Enforcer 2 is applicable only if the *rxTrafficDescType* attribute value for this connection is 4, 5, 6, 7 or 8.

When the value of *rxTrafficDescType* attribute is 4 or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0.

When the value of *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces

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conformance of traffic received from the interface to SCR CLP0+1.

When the value of *rxTrafficDescType* attribute is 7 or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0.

If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* attribute values of 4, 6 and 7. It tags non-conforming cells for *rxTrafficDescType* attribute values of 5 and 8. Discarded cells are counted in the *rxCellDiscard* attribute value.

For basic *Vpts* component, this attribute indicates the aggregated total of all *rxUpcViolationOnEnforcer2* attribute values for the *Vcc* components associated with the *Vpt* component.

The counter wraps to zero when it exceeds its maximum value.

Values — Long Integer

RESPONSE Voice Networking Accounting Information

Description — This response describes the attributes specific to a voice networking accounting record. All items that belong to a voice networking accounting record are defined here. This definition is translated into Service Data Description files - sdd file. The Multiservice Data Provider (MDP) uses the sdd file to decode accounting records.

ATTRIBUTE recordIdentifier

Description — This attribute distinguishes the Voice Networking accounting record from other types of accounting records.

Values — vnetAccRecord

ATTRIBUTE recordType

Description — This attribute indicates the type of the record. For the first record in the accounting period, only ***first*** is set. For the last record, only ***last*** is set. For intermediate records, neither ***first*** nor ***last*** is set. If there is only one record in the accounting period, then both ***first*** and ***last*** are set.
first, ***~last*** (recordType_first 1, recordType_last 0) - first record
~first, ***~last*** (recordType_first 0, recordType_last 0) - intermediate record.
~first, ***last*** (recordType_first 0, recordType_last 1) - final record.
first, ***last*** (recordType_first 1, recordType_last 1) - first and last record (one only).

Set of — first
last

ATTRIBUTE callCorrelationIdentifier

Description — This attribute indicates a unique value assigned to all accounting records generated by calling and called nodes for this call. The *callCorrelationId* is used during post processing of accounting records to correlate records generated by different nodes. The *callCorrelationId* is always unique in the

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network with respect to *callCorrelationIds* generated by other function processors. The value of *callCorrelationId* repeats after 2 to the power of 24 calls on the same, continually active function processor.

Values — String (13, Hex)

ATTRIBUTE startTime

Description — This attribute indicates the start time of the accounting record.

For the first record, this is the time when the setup message was received. On subsequent accounting records, the *startTime* is equal to the *endTime* of the previous record. If Time of Day Accounting (TODA) is used, *startTime* is the time of the TODA (set in *Col/accounting collectionTimes* attribute).

Values — Time (DHMS)

ATTRIBUTE endTime

Description — This attribute indicates end time of the accounting record. In the final accounting record for a call, *endTime* is the time when the disconnect packet was received. If TODA is used, *endTime* in non-final records is the time of the TODA. For 12-hour accounting, *endTime* in non-final records is the time when the 12-hour timer expires.

Values — Time (DHMS)

ATTRIBUTE elapsedTime

Description — This attribute indicates the duration of the call in 0.1 second increments. This time interval is started when the call request is processed. *elapsedTime* indicates the true measure of the accounting period. It is measured independent of *startTime* and *endTime*. Since *startTime* and *endTime* can be changed externally by adjusting the clock, *elapsedTime* can be shorter or longer than the difference between *startTime* and *endTime*. When 12 hour accounting is used, *elapsedTime* is exact or differs by a few seconds from a 12 hour duration.

Values — Decimal (0..16777215)

ATTRIBUTE localNodeIdentifier

Description — This attribute identifies the *nodeId* of the node that generated the accounting record. *nodeId* is assigned to each node in the *ModuleData* component.

Values — Decimal (1..4095)

ATTRIBUTE localLogicalProcessor

Description — This attribute indicates the logical processor used by the service issuing the accounting record.

Values — Decimal (0..15)

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ATTRIBUTE localPort

Description — This attribute indicates the port used by the service issuing the accounting record.

Values — Decimal (0..7)

ATTRIBUTE localTimeslots

Description — This attribute indicates the time slots used by the node issuing the accounting record. Note that in ISDN multiple time slots may be assigned to a single call. Accounting records are not generated for call attempts that fail to get a time slot.

Set of — Decimal (1..31)

ATTRIBUTE callingNumber

Description — This attribute indicates the calling number signalled to the node. This may have a length of 0 if the calling number was not provided. The maximum length is 16 digits.

Values — String (0..16, ASCII)

ATTRIBUTE localDlci

Description — This attribute indicates the local DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request by the node generating this accounting record.

Values — Decimal (0; 16..1007)

ATTRIBUTE calledNumber

Description — This attribute indicates the called number signalled to the node. If *Vroute/n Acct digitsSuppressed* was provisioned with a non-zero value, that number of trailing digits in *calledNumber* are replaced with “X”s.

Values — String (1..32, ASCII)

ATTRIBUTE connectedNumber

Description — This attribute indicates the connected number signalled to the node. This may have a length of zero if the connected number was not provided.

Values — String (0..16, ASCII)

ATTRIBUTE sourceNpi

Description — This attribute indicates the Numbering Plan Indicator (NPI) of the *sourceDna*. This is the value sent by the source accounting node to the destination accounting node during call setup. The *sourceDna* may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.

Values — x121
e164

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ATTRIBUTE sourceDna

Description	This attribute indicates the data network address (the unique identifier) of the calling addressable switched voice application. This is the value sent by the source accounting node to the destination accounting node during call setup. It is valid in accounting records generated by both ends of the call.
Values	BCD (0..15)

ATTRIBUTE destinationNpi

Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *destinationDna*. This is the value sent by the destination accounting node to the source accounting node during call setup. The *destinationDna* may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Values	x121 e164

ATTRIBUTE destinationDna

Description	This attribute indicates the data network address (the unique identifier) of the called addressable switched voice application. This is the value sent by the destination accounting node to the source accounting node during call setup. It is valid in accounting records generated by both ends of the call.
Values	BCD (0..15)

ATTRIBUTE callVncs

Description	This attribute identifies the *VoiceNetworkingCallServer* used locally for this call by its instance value. This will have a value of 0 in an accounting record generated by a terminating end node.
Values	Decimal (0; 1..16)

ATTRIBUTE callProfile

Description	This attribute identifies the *VoiceProfile* instance used locally for this call. *VoiceProfile* instance values are only unique with respect to a particular *Vncs* instance. This will have a value of 0 in an accounting record generated by a terminating end node.
Values	Decimal (0; 1..16)

ATTRIBUTE vnetCallType

Description	This attribute defines the type of call for which this accounting record is issued. ***data*** - ISDN data call ***modem*** - a 2100 Hz tone was detected during the call ***faxRelay*** - fax relay was applied to this call ***modemRelay*** - modem relay was applied to this call ***voice*** - all other calls

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Values	voice data modem faxRelay modemRelay

ATTRIBUTE clearCause

Description	This attribute indicates the reason the call was cleared. If the call was cleared in the subnet, this attribute contains a Q931 value regardless of the source protocol. If the call was cleared by the PBX, this attribute may contain other information conforming to the specifications of the used protocol. It is set to 0 for intermediate records.
Values	Decimal (0..127)

ATTRIBUTE diagnosticCode

Description	This attribute indicates the diagnostic code signalled at the end of connection. It is set to 0 for intermediate records.
Values	Hex (H.0..H.ffffff)

ATTRIBUTE localServiceType

Description	This attribute indicates the service supported by the port used by the local interface. This number is provisioned on each interface as *accountClass*.
Values	Decimal (0..255)

ATTRIBUTE localCollectReason

Description	This attribute indicates the reason the accounting record was generated (The reason can be any combination of ***audit***, ***study***, ***test***, ***bill***, ***force***).
Set of	bill test study audit force

ATTRIBUTE localDse

Description	This attribute defines the local end Data Service Exchange provisioned as an arbitrary number in *serviceExchange* attribute.
Values	Decimal (0..255)

ATTRIBUTE localCustomerIdentifier

Description	This attribute indicates the number assigned in each service to a customer. It identifies the customer in the Customer Network Management on the end that generated the accounting record.
Values	Decimal (0; 1..8191)

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ATTRIBUTE vnetFlags

Description	This attribute indicates values for call characteristics. ***bumped*** (vnetFlags_bumped 1) - The call was bumped to another path by a higher priority call in the accounting interval reported by this record. ***optimized*** (vnetFlags_optimized 1) - The path of the call was altered in the accounting interval reported by this record. ***answered*** (vnetFlags_answered 1) - The call was answered ***frameCountsValid*** (vnetFlags_frameCountsValid 1) - The frame counts in this accounting record are valid. ***originating*** (vnetFlags_originating 1) - The local end originated the call. ***~originating*** (vnetFlags_originating 0) - The far end originated the call. ***tandemPassThrough*** (vnetFlags_tandemPassThrough 1) - The node that generated this record used tandem pass through for this call. ***faxRelayDownspeed*** (vnetFlags_faxRelayDownspeed 1) - The fax relay call accounted by this record lowered the relay rate in the accounting interval reported by this record. ***unique*** (vnetFlags_unique 1) - If this is set to 1, it guarantees that only the local end generated one or more accounting records for this call. ***clearedInSubnet*** (vnetFlags_clearedInSubnet 1) - This flag is only valid in the final accounting record. The value 1 indicates the call was cleared from within the subnet. ***~clearedInSubnet*** (vnetFlags_clearedInSubnet 0) - This flag is only valid in the final accounting record. The value 0 indicates the call was cleared from outside the subnet.
Set of	bumped optimized answered frameCountsValid originating tandemPassThrough faxRelayDownspeed unique clearedInSubnet

ATTRIBUTE callRingTime

Description	This attribute indicates the time in seconds between the setup indication and the call answered indication for answered calls. For unanswered calls, this attribute indicates the time between the setup indication and the call release indication. For values greater than 255 seconds it reports 255 seconds.
Values	Decimal (0..255)

ATTRIBUTE framesAtRate1ToNetwork

Description	This attribute indicates the total number of rate 1 frames sent to the network.
Values	Decimal (0..4294967295)

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ATTRIBUTE framesAtRate2ToNetwork

Description	This attribute indicates the total number of rate 2 frames sent to the network.
Values	Decimal (0..4294967295)

ATTRIBUTE framesAtRate3ToNetwork

Description	This attribute indicates the total number of rate 3 frames sent to the network.
Values	Decimal (0..4294967295)

ATTRIBUTE framesAtRate1FromNetwork

Description	This attribute indicates the total number of rate 1 frames received from the network.
Values	Decimal (0..4294967295)

ATTRIBUTE framesAtRate2FromNetwork

Description	This attribute indicates the total number of rate 2 frames received from the network.
Values	Decimal (0..4294967295)

ATTRIBUTE framesAtRate3FromNetwork

Description	This attribute indicates the total number of rate 3 frames received from the network.
Values	Decimal (0..4294967295)

ATTRIBUTE rate1

Description	This attribute indicates the bit rate of the rate 1 statistics in bit/s.
Values	Decimal (0..1920000)

ATTRIBUTE rate2

Description	This attribute indicates the bit rate of the rate 2 statistics in bit/s.
Values	Decimal (0..1920000)

ATTRIBUTE rate3

Description	This attribute indicates the bit rate of the rate 3 statistics in bit/s.
Values	Decimal (0..1920000)

ATTRIBUTE rate1CompressionAlgorithm

Description	This attribute indicates the compression algorithm used for the rate 1 statistics. If no compression algorithm was used, the value is ***none***.

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Values	none g711 g726 g728 g729 faxRelay modemRelay

ATTRIBUTE rate2CompressionAlgorithm

Description	This attribute indicates the compression algorithm used for the rate 2 statistics. If no compression algorithm was used, the value is ***none***.
Values	none g711 g726 g728 g729 faxRelay modemRelay

ATTRIBUTE rate3CompressionAlgorithm

Description	This attribute indicates the compression algorithm used for the rate 3 statistics. If no compression algorithm was used, the value is ***none***.
Values	none g711 g726 g728 g729 faxRelay modemRelay

ATTRIBUTE rate1FrameSize

Description	This attribute indicates the size of the rate 1 frames in bytes.
Values	Decimal (0..999)

ATTRIBUTE rate2FrameSize

Description	This attribute indicates the size of the rate 2 frames in bytes.
Values	Decimal (0..999)

ATTRIBUTE rate3FrameSize

Description	This attribute indicates the size of the rate 3 frames in bytes.
Values	Decimal (0..999)

ATTRIBUTE frmLostInNetwork

Description	This attribute indicates the number of frames lost in the network. If it is greater than 65535 then the value reported is 65535.

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Values	Decimal (0..65535)

ATTRIBUTE frmDumped

Description	This attribute indicates the number of frames that were dumped to limit the size of the egress queue. *frmDumped* may be an indication of persistent network clock synchronization problems between the interfaces involved in the calls. If it is greater than 255 then the value reported is 255.
Values	Decimal (0..255)

ATTRIBUTE frmUnderRuns

Description	This attribute indicates the number of frames that arrived late to prevent the egress queue from becoming empty. *frmUnderRuns* are an indication of network clock synchronization problems between the interfaces involved in the calls. If it is greater than 255 then the value reported is 255.
Values	Decimal (0..255)

RESPONSE FR-ATM Accounting Information

Description	This response describes the attributes specific to a FR-ATM accounting record. All items which belong to a FR-ATM accounting record are defined here.

ATTRIBUTE recordType

Description	The *recordType* attribute indicates the type of the record. For the first record in the accounting period, only ***first*** is set to 1. For the last record, only ***last*** is set to 1. For intermediate records, both ***first*** and ***last*** are set to 0. If there is only one record in the accounting period, then both ***first*** and ***last*** are set to 1. first, ~last - first record. ~first, ~last - intermediate record. ~first, last - final record. first, last - first and last record (one only).
Set of	first last

ATTRIBUTE recordIdentifier

Description	The *recordIdentifier* attribute indicates the contents of the accounting record. A value ***frAtmAccRecord*** indicates that it is a FR-ATM accounting record.
Values	frAtmAccRecord

ATTRIBUTE callConnId

Description	This attribute may be used by downstream processing systems to correlate the accounting records issued for the same call at different interfaces (nodes) in the network. For SPVCs (soft permanent virtual connections), the *callConnId* is generated by the switch and is unique for every call in the network. For NPVCs (nailed-up permanent virtual

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connections), the *callConnId* is provisioned in the *correlationTag* attribute of the *FrAtm Dlci Siwf Npvc* component.

Values — String (32, Hex)

ATTRIBUTE callType

Description — This attribute indicates the type of call. It is one of the following values:
spvcChannel (soft permanent virtual connection),
pvcChannel (permanent virtual channel transporting a nailed-up connection).

Values — pvcChannel
spvcChannel

ATTRIBUTE interworkingType

Description — This attribute indicates the type of FR-ATM interworking being accounted for.

Values — frf8
frf5

ATTRIBUTE callingNodeIdentifier

Description — This attribute identifies the calling (originating) node by a unique number assigned to each node in the *ModuleData* component.

Values — Decimal (256..49151)

ATTRIBUTE callingCustomerIdentifier

Description — This attribute contains the number assigned in each service to a customer and it identifies the customer of the FR-ATM at the calling end of the call.

Values — Decimal (0; 1..8191)

ATTRIBUTE callingNsapAddr

Description — This attribute indicates the NSAP address of the calling party.

This attribute may not be present in accounting records for FRF.8 NPVCs and FRF.5 DLCI configurations, because the provisioning of the FR-ATM address is optional. Furthermore, at the called end, if the calling address is present in the setup request, then it will be present in the accounting record.

Values — String (20, Hex)

ATTRIBUTE callingEndPointNsapAddr

Description — This attribute indicates the NSAP address of the calling End Point for FRF.5 configuration.

This attribute is only present for FRF.5. Furthermore, at the called end, if the calling address is present in the setup request, then it will be present in the accounting record.

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Values	String (20, Hex)

ATTRIBUTE callingDlci

Description	This attribute contains the calling DLCI number of the interface. This attribute does not appear in accounting records for the called end of a FRF.8 SPVC.
Values	Decimal (16..1007)

ATTRIBUTE callingVpi

Description	This attribute indicates the VPI of the calling end. For a FRF.5 configuration, this attribute is the calling VPI of the End Point, that the *FrAtm* is associated with. At the called end, if the calling address is present in the setup request, then it will be present in the accounting record.
Values	Decimal (0..4095)

ATTRIBUTE callingVci

Description	This attribute indicates the VCI of the calling end. If the calling address is present in the setup request, then it will be present at the called end. Also, for a FRF.5 configuration, this attribute is the calling VCI of the End Point that the *FrAtm* is associated with.
Values	Decimal (0..65535)

ATTRIBUTE calledNodeIdentifier

Description	This attribute identifies the called (terminating) node by a unique number assigned to each node in the *ModuleData* component.
Values	Decimal (256..49151)

ATTRIBUTE calledCustomerIdentifier

Description	This attribute contains the number assigned in each service to a customer, and it identifies the customer at the called end of the call.
Values	Decimal (0; 1..8191)

ATTRIBUTE calledNsapAddr

Description	This attribute indicates the NSAP address of the called party. For FRF.8 NPVC, this attribute will not appear in the accounting record.
Values	String (20, Hex)

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ATTRIBUTE calledEndPointNsapAddr

Description	This attribute indicates the NSAP address of the called End Point for FRF.5 configuration. This is only applicable for FRF.5.
Values	String (20, Hex)

ATTRIBUTE calledDlci

Description	This attribute contains the called DLCI of the interface. This attribute will not occur in records for FRF.8 NPVC configuration and the calling end of a FRF.8 SPVC configuration. In the case of FRF.5, this called DLCI is the DLCI in the FRF.5 End Point.
Values	Decimal (16..1007)

ATTRIBUTE calledVpi

Description	This attribute indicates the VPI of the called end. For FRF.8 NPVC, this attribute does not appear in the accounting record.
Values	Decimal (0..4095)

ATTRIBUTE calledVci

Description	This attribute indicates the VCI of the called end. This attribute will not occur in records only for FRF.8 NPVC configuration.
Values	Decimal (0..65535)

ATTRIBUTE atmCallTermCauseValue

Description	This attribute indicates the call termination cause value as defined by the ATM Forum AtmIf UNI 3.1 specification. It is set to 0 for non-final records.
Values	Decimal (0..255)

ATTRIBUTE callingCir

Description	This attribute indicates the calling end CIR (Committed Information Rate).
Values	Decimal (0..65535)

ATTRIBUTE callingEir

Description	This attribute indicates the calling end EIR (Excess Information Rate).
Values	Decimal (0..65535)

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ATTRIBUTE callingServiceType

Description — This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface *FrAtm Ca* as *accountClass*.

Values — Decimal (0..50)

ATTRIBUTE callingCollectReason

Description — This attribute indicates the reason for the accounting collection of the calling end (It can be any combination of ***audit, study, test, billing, force***).

Set of
bill
test
study
audit
force

ATTRIBUTE callingDse

Description — This attribute indicates the calling end Data Service Exchange provisioned in *FrAtm Ca* as an arbitrary number in the *serviceExchange* attribute.

Values — Decimal (0..255)

ATTRIBUTE calledCir

Description — This attribute indicates the called end CIR (Committed Information Rate).

Values — Decimal (0..65535)

ATTRIBUTE calledEir

Description

This attribute contains the called end EIR (Excess Information Rate).

Values — Decimal (0..65535)

ATTRIBUTE calledServiceType

Description — This attribute indicates the service supported by the port used by the called end-user. This number is provisioned on each interface *FrAtm Ca* as *accountClass*.

Values — Decimal (0..255)

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ATTRIBUTE calledCollectReason

Description — This attribute indicates the reason for the accounting collection of the called end (It can be any combination of ***audit, study, test, billing, force***).

Set of
bill
test
study
audit
force

ATTRIBUTE calledDse

Description — This attribute indicates the called end Data Service Exchange provisioned in *FrAtm Ca* as an arbitrary number in the *serviceExchange* attribute.

Values — Decimal (0..255)

ATTRIBUTE flags

Description — This attribute indicates values for the call characteristics.
calledGenerated - called end generated accounting record.
~calledGenerated - calling end generated accounting record.
calledCleared - call was cleared by called end.
~calledCleared - call was cleared by calling end.

Set of
calledGenerated
calledCleared

ATTRIBUTE startTime

Description — This attribute indicates the start time in the accounting interval.
On the subsequent accounting interval, the start time corresponds to the end time of the previous interval.

Values — Time (DHMS)

ATTRIBUTE endTime

Description — This attribute indicates the end time in the accounting interval.

On final accounting records, the end time is the time when the connection is disconnected.

Values — Time (DHMS)

ATTRIBUTE elapsedTime

Description — This attribute indicates the duration of the call in 0.1 second increments. This time interval is started when the call request is processed. If call does not reach data transfer, then elapsed time is set to 0. Elapsed time represents the true measure of the accounting period. It is measured independently of start time and end time. Since start time and end time can be changed externally by adjusting the clock, elapsed time can be shorter or longer than the difference between start time and end time.

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Values	Decimal (0..16777215)

ATTRIBUTE callingEgressBytes

Description	This attribute indicates the total number of bytes sent to the link at the calling end.
Values	Long Integer

ATTRIBUTE callingIngressBytes

Description	This attribute indicates the total number of bytes received from the link at the calling end.
Values	Long Integer

ATTRIBUTE callingEgressFrames

Description	This attribute indicates the total number of frames sent to the link at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingIngressFrames

Description	This attribute indicates the total number of frames received from the link at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEirEgressBytes

Description	This attribute indicates the number of EIR bytes sent to the link at the calling end.
Values	Long Integer

ATTRIBUTE callingEirIngressBytes

Description	This attribute indicates the number of EIR bytes received from the link at the calling end.
Values	Long Integer

ATTRIBUTE callingEirEgressFrames

Description	This attribute indicates the number of EIR Frames sent to the link at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEirIngressFrames

Description	This attribute indicates the number of EIR Frames received from the link at the calling end.
Values	Decimal (0..4294967295)

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ATTRIBUTE callingDiscardedBytes

Description — This attribute indicates the number of bytes discarded at the calling end.

Values — Long Integer

ATTRIBUTE callingDiscardedFrames

Description — This attribute indicates the number of frames discarded at the calling end.

Values — Decimal (0..4294967295)

ATTRIBUTE calledEgressBytes

Description — This attribute indicates the total number of bytes sent to the link at the called end.

Values — Long Integer

ATTRIBUTE calledIngressBytes

Description — This attribute indicates the total number of bytes received from the link at the called end.

Values — Long Integer

ATTRIBUTE calledEgressFrames

Description — This attribute indicates the total number of frames sent to the link at the called end.

Values — Decimal (0..4294967295)

ATTRIBUTE calledIngressFrames

Description — This attribute indicates the total number of frames received from the link at the called end.

Values — Decimal (0..4294967295)

ATTRIBUTE calledEirEgressBytes

Description — This attribute contains the number of EIR bytes sent to the link at the called end.

Values — Long Integer

ATTRIBUTE calledEirIngressBytes

Description — This attribute indicates the number of EIR bytes received from the link at the called end.

Values — Long Integer

ATTRIBUTE calledEirEgressFrames

Description — This attribute indicates the number of EIR Frames send to the link at the called end.

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Values	Decimal (0..4294967295)

ATTRIBUTE calledEirIngressFrames

Description	This attribute indicates the number of EIR Frames received from the link at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledDiscardedBytes

Description	This attribute indicates the number of bytes discarded at the called end.
Values	Long Integer

ATTRIBUTE calledDiscardedFrames

Description	This attribute indicates the number of frames discarded at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingTransferPriority

Description	This attribute indicates the transfer priority at the calling end.
Values	Decimal (0..255)

ATTRIBUTE calledTransferPriority

Description	This attribute indicates the transfer priority at the called end.
Values	Decimal (0..255)

ATTRIBUTE circuitId

Description	This attribute indicates a unique string, set by the operator as the “correlationTag” provisioned attribute, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. Typically, the attribute is provisioned, as the correlationTag, with the same value at both ends of the connection, but this is not mandatory. As a default, there is no correlationTag provisioned against the DLCI
Values	String (0..32, ASCII)

RESPONSE The following AVs will be removed if the Tidy command is issued without the query option. Some of these AVs are partial AVs.

Description	This response is issued only when the query option is used for the *Tidy* command. It lists the AVs which would be tidied if the *Tidy* command was issued without the query option. This list also includes some partial AVs.

ATTRIBUTE listOfRemovedAvs

Description	This attribute is a list of the names of AVs which would be removed if the *Tidy* command was issued without the query option.
List of	String (1..30, ASCII)

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RESPONSE Only partial AVs exist on the disk. They will be removed if the Tidy command was issued without the query option.

Description — This response is returned when partial AVs exist on the disk which would be removed if the *Tidy* command was issued without the query option.

ATTRIBUTE listOfRemovedAvs

Description — This attribute is a list of the names of AVs which would be removed if the *Tidy* command was issued without the query option.

List of — String (1..30, ASCII)

RESPONSE APS request of equal or higher priority already in effect.

Description — This response is issued when the APS request invoked by the command entered is of lower priority than the APS requests already present on the *Aps* component.

ATTRIBUTE apsResponseText

Description — This response text gives the specific reason why the command was ignored. For example, “Far end is transmitting signalFail on protection”, and a suggested alternative, such as “Use ‘switch -force’ to override the signalFail”.

Values — String (0..256, ASCII)

RESPONSE Error:The component name specified by attribute... does not exist or was not specified.

Description — This error message appears in response to a *Check Prov* command if the specified component name cannot be found in the edit view.

ATTRIBUTE atmAccMissingComponent

Description — This attribute contains the numeric ID of the attribute used to specify the component name of the *atmConnection* to be used.

Values — Decimal (0..65535)

RESPONSE Error:The ATM connection specified by attribute ... is not supported.

Description — This error message appears in response to a *Check Prov* command if the *atmConnection* specified is not supported by this component.

ATTRIBUTE atmAccVCUnsupported

Description — This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which is unsupported.

Values — Decimal (0..65535)

RESPONSE Error:The component name specified by attribute ... does not exist or was not specified.

Description — This error message appears in response to a *Check Prov* command if the specified component name cannot be found in the edit view.

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ATTRIBUTE paAtmAccMissingComponent

Description — This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection to be used.

Values — Decimal (0..65535)

RESPONSE Error:The ATM connection specified by attribute ... is not supported.

Description — This error message appears in response to a *Check Prov* command if the ATM connection specified is not supported by this component.

ATTRIBUTE paAtmAccVCUnsupported

Description — This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which is unsupported.

Values — Decimal (0..65535)

RESPONSE Error: The ATM connection specified by attribute ... must have the same VPI value as its parent Trunk ATM connection.

Description — This error message appears in response to a *Check Prov* command if the ATM connection specified has a different VPI value from its parent Trunk ATM connection.

ATTRIBUTE paAtmAccVpMismatch

Description — This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which has a different VPI value from its parent Trunk ATM connection.

Values — Decimal (0..65535)

RESPONSE Error: The ATM connection specified by attribute ... must have the same AtmIf value as its parent Trunk ATM connection.

Description — This error message appears in response to a *Check Prov* command if the ATM connection specified has a different AtmIf value from its parent Trunk ATM connection.

ATTRIBUTE paAtmAccAtmifMismatch

Description — This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which has a different AtmIf instance value from its parent Trunk ATM connection.

Values — Decimal (0..65535)

RESPONSE Error: The parent Trunk ATM connection specified by its attribute ... is elastic. Pa Atm must be configured for mapped mode on inverse multiplexing Atm trunks.

Description — This error message appears in response to a *Check Prov* command if Pa Atm Mode is set to multiplexing and its parent Trunk Atm connection is elastic. Pa Atm does not support elastic Vcc. Mapped mode is recommended on inverse multiplexing Atm trunks.

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ATTRIBUTE paAtmAccMuxNotAllowed

Description — This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which is elastic.

Values — Decimal (0..65535)

RESPONSE Warning: The ATM connection specified by attribute ... is not relevant in mapped mode and will be ignored.

Description — This warning message appears in response to a *Check Prov* command if a provisioned VCC component is associated with a Pa Atm which is in map mode.

ATTRIBUTE paAtmAccMapModeWarning

Description — This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which is associated with a map-moded Pa ATM.

Values — Decimal (0..65535)

RESPONSE

Description — The following describes the attributes of loopback to be displayed when a stop loopback command is issued.

ATTRIBUTE localTotalFrm (ltf)

Description — This attribute records the number of frames looped back to the link since the loopback mode was started.

Values — Decimal (0..4294967295)

ATTRIBUTE localTotalBytes (ltb)

Description — This attribute records the number of bytes looped back to the link since the loopback mode was started.

Values — Decimal (0..4294967295)

ATTRIBUTE localFecnFrm (lff)

Description — This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the link since the loopback mode was started.

Values — Decimal (0..4294967295)

ATTRIBUTE localBecnFrm (lbf)

Description — This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the link since the loopback mode was started.

Values — Decimal (0..4294967295)

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ATTRIBUTE localDeFrm (ldf)

Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, loopback to the link since the looped back mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE localDeBytes (ldb)

Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteTotalFrm (rtf)

Description	This attribute records the number of frames looped back to the subnet since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteTotalBytes (rtb)

Description	This attribute records the number of bytes looped back to the subnet since the loopback mode was last started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteFecnFrm (rff)

Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the subnet since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteBecnFrm (rbf)

Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the subnet since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteDeFrm (rdf)

Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteDeBytes (rdb)

Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.

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Values Decimal (0..4294967295)

RESPONSE Error:The vcci attribute for the AtmTrunkConnection component must take values in the range 0-4095 when an Aal2Svc component is provisioned.

Description A *Check Prov* command produces this response if the user tries to provision a value in the range 0-4095 for the *vcci* attribute of a *AtmTConn* component, when an *Aal2SvcService* component is provisioned.

System action: no *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: provision a value between 0 and 4095 for the *vcci* attribute of the *VgsConn* component.

ATTRIBUTE relatedComponent

Description This attribute identifies the component in which the error was detected.

Values The name of the component

RESPONSE

Description This is the normal response for a *Trace* command issued against a connection. It lists the ATM components at each hop along the connection path up to the next segment OAM boundary.

An example of the complete response is:
Switch side trace result:
EM/NewYork AtmIf/10 Vcc/0.43
EM/Raleigh AtmIf/30 Vcc/0.43
EM/Raleigh AtmIf/51 Vcc/1.66
EM/Denver AtmIf/40 Vpt/1 Vcc/66
EM/Denver AtmIf/12 Vpt/4 Vcc/25
EM/Atlanta AtmIf/71 Vcc/4.25
EM/Atlanta AtmIf/70 Vcc/0.37

Note that the lines of response in the Trace command output are not necessarily in order. This is due to the fact that the Trace command requires a response from each node along the connection. The time taken to respond to the trace cell depends on the load on that processor. So in any node that has other activity, there are minor differences in the time to respond to the Trace command.

The Trace response for a *Vcc* does not show any hops of a VCC which are conveyed on a path connection (VPC). In this case the Trace command only shows the *Vcc* hop points, along with any *Virtual Path Terminators (VPTs)* that may be present.

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ATTRIBUTE switchSideResponseList

Description — This attribute is used to create a response containing the switch-side trace results.

List of — The name of the component

ATTRIBUTE linkSideResponseList

Description — This attribute is used to create a response containing the link-side trace results.

List of — The name of the component

RESPONSE Warning:Traffic will not be forwarded to any ATM FP LPs with the following LPTs, since the ppplwf or mlppplwf feature is not provisioned in the featureList of those LPTs:

Description — This response is produced by the *Check Prov* command if the user has not provisioned the ***ppplwf*** feature on any card which can be used to route an SPVC configured through a *PppIwf AtmAdaptionPoint*.

ATTRIBUTE component

Description — This attribute specifies the identity of each *Lpt* which does not have the feature ***ppplwf*** provisioned on it.

List of — The name of the component

RESPONSE Error: The ... attribute must ...

Description — This error response is generated by the *Check Prov* command when the operator attempts to provision a PVC connection and the *atmConnection* attribute is not provisioned, or the operator attempts to provision an SPVC connection and the *atmConnection* attribute is provisioned.

ATTRIBUTE invalidType

Description — This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values — Decimal (1..65535)

ATTRIBUTE invalidValue

Description — Either “be set.“ or “not be set.“.

Values — String (7..11, ASCII)

RESPONSE Error: The ... attribute must be set.

Description — This response is produced by the *Check* command if the user has not provisioned the *linkToProtocolPort* attribute.

ATTRIBUTE invalidType

Description — This attribute contains the numeric ID of the attribute which was left unprovisioned.

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Values	Decimal (1..65535)

RESPONSE Error: The ... attribute must be set.

Description	This response is produced by the *Check* command if the user has not provisioned the *ilsForwarder* attribute.

ATTRIBUTE invalidType

Description	This attribute contains the numeric ID of the attribute which was left unprovisioned.
Values	Decimal (1..65535)

RESPONSE Error: ... encapType must be llcEncap or ipVcEncap.

Description	This error message appears when the attribute *encapType* under the linked *AtmMpe* component is neither ***llcEncap*** nor ***ipVcEncap***.

ATTRIBUTE atmMpeName

Description	This attribute contains the name of the *AtmMpe* component.
Values	The name of the component

RESPONSE Failed to reach destination within the maximum of ... hops.

Description	This response indicates the *Ping -traceRoute* command cannot reach the given destination IP address within the maximum number of hops supported by IP Trace Route.

ATTRIBUTE hopCount

Description	This attribute indicates the maximum number of hops the *Ping -traceRoute* command will try to reach its destination.
Values	Decimal (1..255)

RESPONSE IP Trace Route for ...:Path taken:

Description	This response contains the header line used when the *-traceRoute* ping option was specified. It is used when the trace was unsuccessful due to a timeout. The path taken before the 10 second timer expired follows this response.

ATTRIBUTE ipAddr

Description	This attribute indicates the IP address of the remote host.
Values	IP address

RESPONSE ...Hop ...:...(failed)

Description	This response is printed as the last line of the ping *-traceRoute* command when the command fails or times out. It indicates the number hops the command had traversed before it failed.

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ATTRIBUTE hopCount

Description	This attribute indicates the number of hops the command had traversed when the command failed.
Values	Decimal (1..255)

RESPONSE .....

Description	This response contains the *hopCount*, *hopAddress* and *roundTripTime* of an intermediate node in the network to reach the IP address being traced.

ATTRIBUTE hopCount

Description	This attribute indicates the hop count of a node that was visited by the *Ping -traceRoute* command.
Values	Decimal (1..255)

ATTRIBUTE ipAddress

Description	This attribute indicates the IP address of a node that was visited by the *Ping -traceRoute* command. The value 0.0.0.0 is displayed if a transit router along the path did not respond. This might be the result of a node filtering incoming and/or outgoing ICMP messages, for example, a firewall router. In this case, the *roundTripTime* is displayed as 0 as well and should be ignored.
Values	IP address

ATTRIBUTE roundTripTime

Description	This attribute indicates the round trip time taken to reach this node. The value 0 is displayed if a transit router along the path did not respond. This might be the result of a node filtering incoming and/or outgoing ICMP messages, for example, a firewall router. In this case, the IP address is displayed as 0.0.0.0 as well and should be ignored.
Values	Decimal (0..65535)

RESPONSE Transport Connection to ... is up.

Description	This response indicates that the *Ping* issued against the enabled *Ep* has verified that the transport connection to the remote end is up. If the *Ping* issued against the Ep is disabled due to transport priority overlap, then this response indicates that the transport connection from this Ep's associated Ep to the remote end is up.

ATTRIBUTE remoteComponentName

Description	This attribute indicates the component name of the remote *Ep.*
Values	String (0..46, ASCII)

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RESPONSE Error: ... encapType must be llcEncap.

Description	This error message appears when the attribute *encapType* under the linked *AtmMpe* component is not ***llcEncap***.

ATTRIBUTE atmMpeName

Description	This attribute contains the name of the *AtmMpe* component.
Values	The name of the component

RESPONSE Warning:Traffic will not be forwarded to any AtmMpe protocol port on Lp(s) with the following Lpt(s), since the feature atmMpe is not provisioned in the featureList of those Lpt(s):

Description	This response is produced by the *Check Prov* command if the user has not provisioned the ***atmMpe*** feature on any card which has the ***ip*** feature provisioned.

ATTRIBUTE component

Description	This attribute specifies the identity of each *Lpt* which does not have the feature ***atmMpe*** provisioned on it.
List of	The name of the component

RESPONSE Error:The feature atmMpe must be provisioned in the featureList of ...

Description	This error response is generated when the feature ***atmMpe*** is not provisioned on the corresponding logical processor.

ATTRIBUTE lpt

Description	This attribute indicates the *Lpt* which should have the ***atmMpe*** feature on it.
Values	The name of the component

RESPONSE ...

Description	This response is generated as an error response to the start verb. The reasons for this response include: The FRUNI is incapable of generation traffic in its current state.

ATTRIBUTE ErrorMsg

Description	This attribute contains the error message to be displayed.
Values	String (1..81, ASCII)

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RESPONSE Error:An Lsp must have one of either a ...,or ... or ... subcomponent provisioned when a FEC MscMap is provisioned under the LspG.

Description — The *Check Prov* command produces this response when the specified component name cannot be found in the edit view.

System Action: The *Check Prov* fails.

Operator Action: Provision either an *LdpQos* or *CrLdpQos* or *RsvpQos* component under this *Lsp* component.

ATTRIBUTE mplsLspGLspMissingCrLdpQosError

Description — This attribute indicates the name of the *CrLdpQos* component to be used in the response.

Values — Decimal (0..65535)

ATTRIBUTE mplsLspGLspMissingLdpQosError

Description — This attribute indicates the name of the *LdpQos* component to be used in the response.

Values — Decimal (0..65535)

ATTRIBUTE mplsLspGLspMissingRsvpQosError

Description — This attribute indicates the name of the *RsvpQos* component to be used in the response.

Values — Decimal (0..65535)

RESPONSE Error:The total number of LSP components has exceeded the allowable limit of ... per Mpls component.

Description — The *Check Prov* command produces this response when the number of *Lsp* components provisioned has exceeded a defined constant

System Action: The *Check Prov* fails.

Operator Action: Reduce the number of *Lsp* components provisioned

ATTRIBUTE mplsLspGLspTooManyLspsError

Description — This attribute indicates the maximum number of *Lsp* components that can be provisioned on a switch under an *Mpls* component . This value is a constant set within the software.

Values — Decimal (0..65535)

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RESPONSE Error:A Te component must have the ... attribute set when the Lsp component has a CrLdpQos subcomponent.

Description — The *Check Prov* command produces this response when the *TrafficEngineering* component does not have its *pathname* attribute set.

System Action: The *Check Prov* fails.

Operator Action: Provision the *pathname* attribute under the *TrafficEngineering* component to point to a valid MPLS *Path* component.

ATTRIBUTE mplsTePathnameSetError

Description — This attribute indicates the name of the *Pathname* attribute to be used in the response.

Values — Decimal (0..65535)

RESPONSE Warning:The ... attribute will be ignored when the Lsp component has an LdpQos subcomponent.

Description — The *Check Prov* command produces this response when the *Lsp* component has an *LdpQos sub*component provisioned and the *PathOnDemand* attribute is set to ***enabled*** or when an *LdpQos* component is provisioned and the *PathName* attribute is set.

System Action: The *Check Prov* command passes.

Operator Action: No operator action required.

ATTRIBUTE mplsTeLdpQosWarning

Description — This attribute indicates the name of the attribute to be used in the response.

Values — Decimal (0..65535)

RESPONSE Error:A Te ... attribute has to be set to an existing Path component.

Description — The *Check Prov* command produces this response when the *pathname* attribute of the *TrafficEngineering* component of an *Lsp* component has been set to a non-existent *Path.*

System Action: The *Check Prov* fails.

Operator Action: Provision the *pathname* attribute to point to a valid MPLS *Path* component.

ATTRIBUTE mplsTePathnameExistError

Description — This attribute indicates the name of the *Pathname* attribute to be used in the response.

Values — Decimal (0..65535)

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RESPONSE Error: ... in the standby LSP attribute does not have Service Category as standby value.

Description — The *Check Prov* command produces this response when an *Lsp* has been added to a *standbyLsp* but has a non-standby value.

System Action: The *Check Prov* fails.

Operator Action: Either remove the *Lsp* component with a non-standby *serviceCategory* value from the *standbyLsp* attribute or change it's *serviceCategory* value to ***standby***.

ATTRIBUTE nonStandbyLsp

Description — This attribute specifies the component name of the *Lsp Msc* to be used in the response.

Values — The name of the component

RESPONSE Error:Each non-standby Lsp must have a unique serviceCategory. ... has duplicate serviceCategory.

Description — The *Check Prov* command produces this response when multiple *Lsp* components have been provisioned under the same *LspGroup* components using the same non-standby *serviceCategory.*

System Action: The *Check Prov* fails.

Operator Action: Ensure that each of the *Lsp* components provisioned under an *LspGroup* component has a unique non-standby *serviceCategory*.

ATTRIBUTE mplsMscUniqScError

Description — This attribute indicates the component name of the *Lsp Msc* to be used in the response.

Values — The name of the component

RESPONSE Error:... standby list cannot include a primary Lsp.

Description — The *Check Prov* command produces this response when a *standbyLsp* has been provisioned to include a non-standby LSP.

System Action: The *Check Prov* fails.

Operator Action: Either remove the *Lsp* instance with a non-standby *serviceCategory* value from the *standbyLsp* or change the *serviceCategory* value to ***standby***.

ATTRIBUTE mplsMscNonStandbyInListError

Description — This attribute indicates the component name of the standby list to be used in the response.

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Values — The name of the component

RESPONSE Error:A standby Lsp cannot appear in more than one standby list. ... and ... include the same Lsp.

Description — The *Check Prov* command produces this response when a standby LSP has been included in more than one *standbyLsp*.

System Action: The *Check Prov* fails.

Operator Action: Remove the *Lsp* component instance value from one of the *standbyLsp*.

ATTRIBUTE firstStandbyInOnePlusListError

Description — This attribute indicates the component name of the *standbyLsp* to be used in the response.

Values — The name of the component

ATTRIBUTE secondStandbyInOnePlusListError

Description — This attribute indicates the component name of the *standbyLsp* to be used in the response.

Values — The name of the component

RESPONSE Error:Standby Lsp ... does not appear in any standby list.

Description — The *Check Prov* command produces this response when a standby LSP has not been added to any *standbyLsp*.

System Action: The *Check Prov* fails.

Operator Action: Either change the *Msc* component *serviceCategory* attribute value to a non-standby value or add it to a *standbyLsp*.

ATTRIBUTE mplsMscHangingStandbyError

Description — This attribute indicates the component name of the Lsp to be used in the response.

Values — The name of the component

RESPONSE Error:A Path component must have at least one ... subcomponent.

Description — The *Check Prov* command produces this response when no *Hop* components have been provisioned under the *Path* component.

System Action: The *Check Prov* fails.

Operator Action: Provision at least one *Hop* component under each *Path* component.

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ATTRIBUTE pathNoHopsError

Description — This attribute indicates the name of the *Hop* subcomponent used in the response.

Values — Decimal (0..65535)

RESPONSE Error:The total number of Path components has exceeded the allowable limit of ... per Mpls component.

Description — The *Check Prov* command produces this response when the number of *Path* components provisioned exceeds a preset value.

System Action: The *Check Prov* fails.

Operator Action: Reduce the number of *Path* components provisioned.

ATTRIBUTE mplsPathTooManyPathsError

Description — This attribute indicates the maximum number of *Path* components that can be provisioned on a switch under a *Mpls* component. This value is a constant set within the software.

Values — Decimal (0..65535)

RESPONSE Error:Hop ... attribute is inadmissible. Choose a valid Class A, B or C non-reserved address.

Description — The *Check Prov* command produces this response when the IpV4 address for this *Hop* component is not a valid Class A,B or C non-reserved address.

System Action: The *Check Prov* fails.

Operator Action: Provision the *IpV4address* attribute of this *Hop* component using a valid Class A,B or C non-reserved address.

ATTRIBUTE pathHopInvalidAddrError

Description — This attribute indicates the name of the *IpV4Address* attribute to be used in the response.

Values — Decimal (0..65535)

RESPONSE Error:The total number of Hop components has exceeded the allowable limit of ... per Mpls component.

Description — The *Check Prov* command produces this response when the number of *Hop* components provisioned exceeds a preset number.

System Action: The *Check Prov* fails.

Operator Action: Reduce the number of *Hop* components provisioned.

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ATTRIBUTE mplsPathHopTooManyHopsError

Description — This attribute indicates the maximum number of *Hop* components that can be provisioned on a switch under a *Virtual Router*. This value is a constant set within the software.

Values — Decimal (0..65535)

RESPONSE Error:An LspGroup component must have one ... subcomponent.

Description — The *Check Prov* command produces this response when a *ForwardingEquivalenceClass* component has not been provisioned under the *LspGroup* component.

System Action: The *Check Prov* fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Provision a *ForwardingEquivalenceClass* component under the *LspGroup* component.

ATTRIBUTE lspGroupMissingIpFwdError

Description — This attribute indicates the name of the *ForwardingEquivalenceClass* component to be used in the response.

Values — Decimal (0..65535)

RESPONSE Error:The total number of LspGroup components has exceeded the allowable limit of ... per VirtualRouter.

Description — The *Check Prov* command produces this response when the number of *LspGroup* components provisioned exceeds a preset number.

System Action: The *Check Prov* fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Reduce the number of *LspGroup* components provisioned.

ATTRIBUTE mplsLspGTooManyLspGsError

Description — This attribute indicates the maximum number of *LspGroup* components that can be provisioned on a switch under a *VirtualRouter* component. This value is a constant set within the software.

Values — Decimal (0..65535)

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RESPONSE Error:Duplicate ipv4Elem value or masked Ipv4 address with another LspGroup component. The duplicate address and length is ...,....

Description — The *Check Prov* command produces this response when the provisioned *ipv4Element* instance value of the *Ipv4Epa* subcomponent or the IP address defined by the combination of *ipv4Element* and *ipv4Pref* values (masked IP address) is duplicated under another *LspGroup* component.

System Action: The *Check Prov* command fails.

Operator Action: Ensure that the IP address represented by each *Ipv4Epa* component is unique under the *Mpls* component. This includes both uniqueness of the *ipv4Element* instance value along and the IP address defined by combining *ipv4Element* and *ipv4Pref* instance values.

ATTRIBUTE ipV4DuplicateAddrError

Description — This attribute indicates the *ipv4Element* to be used in the response.

Values — IP address

ATTRIBUTE ipV4DuplicateAddrLengthError

Description — This attribute indicates the *ipv4Pref* to be used in the response.

Values — Decimal (1..32)

RESPONSE Error:The timeslot provisioned for Ccst has not been provisioned in the Channel timeslot list.

Description — A *Check Prov* command produces this error response if the *Channel timeslot* attribute does not contain the timeslot provisioned for the *Ccst* component. Note that if the *Ccst timeslot* attribute is set to ***autoConfigure***, then the *Channel timeslot* attribute must contain ***16*** for E1 or ***24*** for DS1.

System action: No *Activate Prov* command will be accepted until a subsequent *Check Prov* completes without errors.
Operator action: Provision the *Channel timeslot* attribute to include the timeslot used by *Ccst*.

ATTRIBUTE conflictingComponent

Description — This attribute identifies the *Channel* component for which the incorrect *timeslot* provisioning has been detected.

Values — The name of the component

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RESPONSE Error:PModule subcomponent instance numbers must range contiguously from 1 to ... if the Shelf Card cardType attribute is ....

Description

A *Check Prov* command produces this error response when a *Vsp* component has an incorrect number of *PModule* subcomponent instances for the provisioned card type.

12 *PModule* instances are required on a ***12mVspAal*** or ***Vsp2*** card.

24 *PModule* instances are required on a ***2pGeMmSrVsp3*** card.

23 *PModule* instances are required on a ***2pOC3ChSmIrVsp3*** card.

53 *PModule* instances are required on a ***2pVS*** card.

45 *PModule* instances are required on a ***2pOC3ChSmIrVsp4e*** card.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Provision the number of *PModule* components appropriately for the card type.

ATTRIBUTE vspPModuleCount

Description

This attribute indicates the required number of *PModule* subcomponents.

Values

12
24
23
53
45

ATTRIBUTE vspCardType

Description

This attribute indicates the card type for the *Vsp* component.

Values

12mVspAal
Vsp2
2pGeMmSrVsp3
2pOC3ChSmIrVsp3
2pVS
2pOC3ChSmIrVsp4e

RESPONSE Error: The value specified for the ... attribute is invalid for this card type.

Description

A *Check Prov* command produces this response when a semantic check fails concerning an MSA card.

ATTRIBUTE attribute

Description

This is the attribute involved in the response.

Values

Decimal (1..65535)

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RESPONSE Error:.....Reason: on MSA cards, ...

Description	A Check Prov command produces this response when a semantic check escape fails on an MSA card

ATTRIBUTE attribute

Description	This is the main attribute involved in the response.
Values	Decimal (1..65535)

ATTRIBUTE attributeHexValueMustBe

Description	This is the hex value that must be applied to the attribute
Values	Hex (H.0..H.ffffffff)

RESPONSE Warning:Traffic using LANE service will not be forwarded to any Lp with the following Lpt(s), since the laneClient feature is not provisioned in the feature list of those Lpt(s):

Description	A *CHECK* command produces this response if the 'laneClient' feature is not provisioned on an ATM *Lpt* that has any of the features: atmUni, atmIisp, atmPnni; or an *Lpt* that has any of the features: ip, ipx, bridge.

ATTRIBUTE component

Description	This attribute specifies the identity of each *Lpt* that does not have the feature 'laneClient' provisioned on it.
List of	The name of the component

RESPONSE IpPing: Rx ... from ... for ...: icmpSeq=... ...

Description	This response indicates that the ping to the specified IP address was unsuccessful due to an ICMP error.

ATTRIBUTE type

Description	This attribute indicates the type of ICMP error received that correlates to an outstanding echo request. ICMP errors that are reported include all variations of unreachable errors, and the time exceeded error. Refer to RFC 792 for details on ICMP.
Values	String (0..20, ASCII)

ATTRIBUTE sourceIpAddr

Description	This attribute indicates the IP address of which the unreachable ICMP packet was originated.
Values	IP address

ATTRIBUTE destIpAddr

Description	This attribute indicates the IP address of the intended destination of the echo request.
Values	IP address

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ATTRIBUTE sequence

Description	This attribute indicates the sequence number of the failed echo request.
Values	Decimal (0..4294967295)

ATTRIBUTE data

Description	This attribute indicates any other relevant data in the ICMP error, such as the MTU in an 'unreachable - need fragment' ICMP error.
Values	String (0..20, ASCII)

RESPONSE Reconnect command successful, connection ....

Description	The *Reconnect* command produces this response to indicate that the connection was successfully established using the requested path.

ATTRIBUTE currentPath

Description	This attribute specifies the path in use after the *Reconnect* command.
Values	with primary path with alternate path using PNNI routing

RESPONSE Reconnect not successful, connection ....

Description	The *Reconnect* command produces this response to indicate that the connection could not be established using the requested path.

ATTRIBUTE currentPath

Description	This attribute specifies the path in use after the *Reconnect* command.
Values	with primary path with alternate path using PNNI routing not established

RESPONSE .....

Description	This indicates the number of components which generated warnings and the number of components which generated errors that could not be displayed due to volume limitations.

ATTRIBUTE warningCount

Description	This attribute indicates the number of components that have generated warnings that have not been displayed.
Values	Decimal (0..4294967295)

ATTRIBUTE errorCount

Description	This attribute indicates the number of components that have generated errors that have not been displayed.

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Values Decimal (0..4294967295)

RESPONSE Error:An Lsp component must have a ... subcomponent provisioned.

Description The *Check Prov* command produces this response when the specified component name cannot be found in the edit view.

System Action: The *Check Prov* command fails.

Operator Action: Provision the component indicated as missing component under this *Lsp* component.

ATTRIBUTE mplsLspGLspMissingSubCompError

Description This attribute indicates the name of the missing subcomponent to be used in the response.

Values Decimal (0..65535)

RESPONSE Error:A ... subcomponent must be provisioned under the Fec component.

Description The *Check Prov* command produces this response when the specified component name cannot be found in the edit view.

System Action: The *Check Prov* fails.

Operator Action: Provision an *IpV4Epa* subcomponent under this *Fec* component.

ATTRIBUTE ipFwdPolMissingSubCompError

Description This attribute contains the name of the *IpV4Epa* subcomponent to be used in the response.

Values Decimal (0..65535)

RESPONSE Error:When the frequency attribute is set to veryFrequent, ... must equal ....

Description The *Check Prov* command produces this response when the *frequency* attribute has been set to ***veryFrequent*** and either the *peakDataRate* does not equal the *committedDataRate* or the *peakBurstSize* does not equal the *committedBurstSize*.

System Action: The *Check Prov* fails.

Operator Action: Alter the attributes to meet the required conditions.

ATTRIBUTE mplsCrLdpQosDataPeakError

Description This attribute indicates the name of one of the *CrLdpQos* attributes to be used in the response.

Values Decimal (0..65535)

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ATTRIBUTE mplsCrLdpQosDataCommittedError

Description	This attribute indicates the name of one of the *CrLdpQos* attributes to be used in the response.
Values	Decimal (0..65535)

RESPONSE Error: The following have duplicate IP addresses. (At most 20 components are shown.)

Description	A *Check Prov* command generates this response if two or more linked components have the same IP address. The first component has this Ip address will be recognized. But the second and more with same Ip address will be listed under this response.

ATTRIBUTE illegalFriDuplicated

Description	This attribute contains a list of the offending Frame Relay interfaces.
List of	The name of the component
List Size	20

RESPONSE Warning:This will disrupt all the BNX Dlcis under ....

Description	The *Check Prov* command generates this response when the attribute *linkToIpServer* and/or *ipAddress* have been changed.

ATTRIBUTE frUniName

Description	This attribute indicates the component name of its parent: *FrUni* or *FrNni*.
Values	The name of the component

RESPONSE Cannot Unlock - attribute ... is not set to unlocked.

Description	This error response is generated when an operator attempts to *Unlock* a component whose currently provisioned administrative status is ***permLocked***. **System action**: the *Unlock* command is ignored. **Operator action**: if desired, change the value provisioned for the indicated attribute to ***unlocked***, then retry the original *Unlock* command. Note that doing this will cause the component to attempt to go into service whenever a FP reload occurs.

ATTRIBUTE attribute

Description	This attribute identifies the provisioned administrative status attribute.
Values	Decimal (0..65535)

RESPONSE node id = ... port id = ...

Description	This response contains the information for one hop in a computed route returned as the result of issuing the *Run* command on the *RouteFinder* component.

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ATTRIBUTE nodeId

Description	This attribute specifies the node ID of a logical node at the near end of the hop.
Values	String (22, Hex)

ATTRIBUTE portId

Description	This attribute indicates the port ID of the PNNI interface leaving the node identified by the *nodeId* attribute.
Values	Decimal (0..4294967295)

RESPONSE node id = ...

Description	This response contains the information for one hop with an unknown port ID in a computed route returned as the result of issuing the Run verb on the RouteFinder component.

ATTRIBUTE nodeId

Description	This attribute specifies the node ID of a logical node at the near end of the hop.
Values	String (22, Hex)

RESPONSE Route ...: Optimal Path Metric Value : ...

Description	This response contains the header line for one computed route returned as the result of issuing the *Run* command on the *RouteFinder* component.

ATTRIBUTE route

Description	This attribute specifies the route number of one of the routes returned as the result of issuing the *Run* command on the *RouteFinder* component.
Values	Decimal (1..15)

ATTRIBUTE optMetricValue

Description	This attribute indicates the results of the optimization metric for the best routing path found.
Values	Decimal (0..4294967295)

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RESPONSE Error:Duplicated remote end is found in ....

Description — The *Check Prov* command generates this response when there are duplicated *calledIpAddress* and *calledDlci* pairs or *backupCalledIpAddress* and *backupCalledDlci* pairs in *BnxIwf* components under the same *FrUni* or *FrNni*.

System action: No *Activate* command is accepted until the provisioning information is corrected.

Operator action: Change one or more of the attributes of the duplicated *BnxIwf* components (*calledIpAddress*, *calledDlci*, *backupCalledIpAddress,* or *backupCalledIpAddress*) to make the remote ends unique.

ATTRIBUTE illegalFriDuplicated

Description — This attribute contains an offending *BnxIwf* component.

Values — The name of the component

RESPONSE Error: The aggregateNet ... is a host address. Use network address for the corresponding aggregateMask

Description — This response is generated when host address is used to aggregate routes

ATTRIBUTE ospfAggregateNetAddress

Description — This attribute contains the net address

Values — IP address

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RESPONSE DPRS MCS switched path associated with McsMgr ... ...

Description

This response is returned when the operator issued a *ping* command without the -rtd option and the data path currently being used for this FR VC is a pre-determined DPRS MCS switched path.

When data traffic of this FR VC is carried over a DPRS MCS switched path, the *ping* command should be issued with the -rtd option and meant to get the round-trip-delay information of this switched path.

However, if information about this switched path is needed, please refer to the component “McsMgr DprsMcsEpG/<x> Ep/<y> EpD” associated with this switched path. The steps are as follow (please note that <x> and <y> should be replaced using the actual values displayed in this response):
1) Display the attribute “transportConnectionPreference” under this component to see how this path is setup (using PORS or ATM).
2) If the value is “porsOnly”, the path information can be obtained using “display McsMgr DprsMcsEpG/<x> Ep/<y> LCo” and looking at the value of attribute “path”. Otherwise, the value for attribute “transportConnectionPreference” is “atmOnly”. In this case, you have to check the attribute “nextHop” under component: “McsMgr DprsMcsEpG/<x> Ep/<y> AtmCon” and trace the same attribute manually hop-by-hop to get the path information.

ATTRIBUTE vcsEpG

Description

This attribute indicates the group number of the DPRS MCS endpoint associated with the switched path.

Values

Decimal (1..8191)

ATTRIBUTE vcsEp

Description

This attribute indicates the Ep number of the DPRS MCS endpoint associated with the switched path.

Values

Decimal (1..256)

RESPONSE

Description

The *Trace* command produces this response when the command completes normally. This is only the initial part of the complete response. The complete response includes multiple instances of *AtmTracePartialResponse* as well.

The following is an example of the complete response:

Trace status = Trace Completed Normally
Src port Id=001e0001
Src port name =EM/PARIS Atmif/30

Node Id =60A0391111111111111111111111110090CF55E80060
Node name = PARIS
Port Id =0700001

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Port name= EM/PARIS Atmif/112

...

Node Id =60A039111111111111111111111110090CF55E81163
Node name = ENGLAND
Port Id =0700001
Port name= EM/ENGLANG Atmif/112

...

Node Id = 60A039111111111111111111111110090CF55E81163
Node name = MOSCOW
Port Id =0700001
Port name= EM/MOSCOW Atmif/112

ATTRIBUTE status

Description — This attribute indicates the status of the trace. The string should be one of the following:

***Completed normally**:* The trace completed normally.

***Incomplete**:* Partial trace returned.

***Exceeded information element length limitations**:* The number of traced nodes exceeded the maximum number of hops.

***Exceeded message length limitations**:* The message length exceeded the maximum allowed size.

Values
Completed normally
Incomplete
Exceeded information element length limitations
Exceeded message length limitations

ATTRIBUTE srcPortId

Description — This attribute indicates the trace source port identifier used for this connection.

Values — Decimal (0..4294967295)

ATTRIBUTE srcPortName

Description — This attribute indicates the node name and the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.

Values — String (40, ASCII)

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RESPONSE Error: The policy described by this component duplicates or conflicts with the policy described by ....

Description — A *Check Prov* command produces this response if the addition, deletion, or change of an *EgressPolicy* or *NetworkAddress* component results in an inconsistent set of egress policies.

ATTRIBUTE netAddrDupName

Description — This attribute contains the name of the conflicting *NetworkAddress* component.

Values — The name of the component

RESPONSE Error: ... encapType must be llcEncap.

Description — A *Check Prov* command produces this response when the *encapType* attribute of the linked *AtmMpe* is not ***llcEncap***.

ATTRIBUTE atmMpeName

Description — This attribute contains the name of the *AtmMpe* component.

Values — The name of the component

RESPONSE Error: The combination of attributes ... and ... is invalid because there are non-zero bits in the address which lie outside the mask.

Description — A *Check Prov* command produces this response when there are non-zero bits in the *sourceAddress* or *destinationAddress* which lie outside the corresponding mask.

ATTRIBUTE invalidAddress

Description — This attribute contains the numeric ID of the attribute with the invalid address.

Values — Decimal (1..65535)

ATTRIBUTE invalidMask

Description — This attribute contains the numeric ID of the attribute with the invalid mask.

Values — Decimal (1..65535)

RESPONSE Error: More than one Virtual Media Interface component linked to Vr/....

Description — The *Check* command produces this response if more than one *Interface* of the given *VirtualMedia* is linked to a given *VirtualRouter*. Delete any additional *VirtualMedia Interfaces*, or link them to another *VirtualRouter*

ATTRIBUTE vrId

Description — This attribute indicates the name of the *VirtualRouter*.

Values — String (1..8, ASCII)

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RESPONSE The install version ... does not exist.

Description

The *Install* command generates this response when the install file version specified for the fabric application does not exist.
System action: The command was not accepted.
Operator action: Specify another fabric application version to install, or download the version first from the SDS site.

ATTRIBUTE file

Description

This attribute is the name of the install file to be loaded.

Values

String (1..50, ASCII)

RESPONSE Switch side trace result:

Description

The *Trace* command produces this response when the command completes normally. This is only the initial part of the complete response. The complete response includes multiple instances of *AtmTracePartialResponse* as well.

An example of the complete response is:
Switch side trace result:

Trace status = Trace Completed Normally.
Src port Id=001e0001
Src port name = EM/PARIS Atmif/30

Node Id=60A03911111111111111111111111110090CF55E80060
Node name = PARIS
Port Id =0700001
Port name = EM/PARIS Atmif/112

...

Node Id=60A03911111111111111111111111110090CF55E81163
Node name = ENGLAND
Port Id =0700001
Port name= EM/ENGLANG Atmif/112

...

Node Id=60A03911111111111111111111111110090CF55E81163
Node name = MOSCOW
Port Id =0700001
Port name= EM/MOSCOW Atmif/112

ATTRIBUTE status

Description

This attribute indicates the status of the trace. The string is one of the following:

Completed normally*:* The trace completed normally.

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***Incomplete**:* Partial trace returned.

***Exceeded information element length limitations**:* The number of traced nodes exceeded the maximum number of hops.

***Exceeded message length limitations**:* The message length exceeded the maximum allowed size.

Values

Completed normally
Incomplete
Exceeded information element length limitations
Exceeded message length limitations

ATTRIBUTE srcPortId

Description

This attribute indicates the port identifier value used for this connection.

Values

Decimal (0..4294967295)

ATTRIBUTE srcPortName

Description

This attribute indicates the node name and the name of the source port used for this connection on the ingress side. This attribute only appears in the trace results for the trace source hop.

Values

String (40, ASCII)

RESPONSE Linkside trace result:

Description

The *Trace* command produces this response when the command completes normally. This is only the initial part of the complete response. The complete response includes multiple instances of *AtmTracePartialResponse* as well.

The following is an example of the complete response:
Linkside trace result:

Trace status = Trace Completed Normally.
Src port Id=001e0001
Src port name =EM/PARIS Atmif/30

Node Id =60A039111111111111111111111110090CF55E80060
Node name = PARIS
Port Id =0700001
Port name = EM/PARIS Atmif/112

...

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Node Id =60A039111111111111111111111110090CF55E81163
Node name = ENGLAND
Port Id =0700001
Port name= EM/ENGLANG Atmif/112

...

Node Id =60A039111111111111111111111110090CF55E81163
Node name = MOSCOW
Port Id =0700001
Port name = EM/MOSCOW Atmif/112

ATTRIBUTE status

Description

This attribute indicates the status of the trace. The string is one of the following:

***Completed normally**:* The trace completed normally.

***Incomplete**:* Partial trace returned.

***Exceeded information element length limitations**:* The number of traced nodes exceeded the maximum number of hops.

***Exceeded message length limitations**:* The message length exceeded the maximum allowed size.

Values

Completed normally
Incomplete
Exceeded information element length limitations
Exceeded message length limitations

ATTRIBUTE srcPortId

Description

This attribute indicates the port identifier value used for this connection.

Values

Decimal (0..4294967295)

ATTRIBUTE srcPortName

Description

This attribute indicates the node name and the name of the source port used for this connection on the ingress side. This attribute only appears in the trace result for the trace source hop.

Values

String (40, ASCII)

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RESPONSE

Description

The *Trace* command produces this response, or multiple instances of this response, when the path trace test connection completes normally. This partial response is also used by the connection trace to produce the complete response.

Multiple instances of this response are part of the complete response as show below:

Node Id=60A039111111111111111111111110090CF55E80060
Node name = PARIS
Port Id =0700001
Port name= EM/PARIS Atmif/112
...

Node Id=60A039111111111111111111111110090CF55E81163
Node name = ENGLAND
Port Id =0700001
Port name= EM/ENGLANG Atmif/112
...

Node Id=60A039111111111111111111111110090CF55E81163
Node name = MOSCOW
Port Id =0700001
Port name= EM/MOSCOW Atmif/112

ATTRIBUTE vpiVci

Description

This attribute indicates the VPI.VCI values are used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only.

For the connection trace, the VPI.VCI values are included in the trace when the *-s* option is specified.

For the test connection, as defined by the specification, the VPI.VCI values are never included when the connection is released at the destination.

Values

Integer Sequence (0..4095; 0..65535)

ATTRIBUTE dlci

Description

This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for FrAtm interfaces only.

For the connection trace, the VPI.VCI values are included in the trace when the *-s* option is specified.

For the test connection, as defined by the specification, the VPI.VCI values are never included when the connection is released at the destination.

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Values Decimal (0..1023)

ATTRIBUTE callReference (callref)

Description This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages.

For the connection trace, the call reference value is included in the trace when the *-a* option is specified.

For the test connection, as defined by the specification, the call reference value is never included when the connection is released at the destination.

Values Hex (H.0..H.ffffff)

ATTRIBUTE endPointReference

Description This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages.

For the connection trace, the end point reference value is included in the trace when the *-a* option is specified.

For the test connection, as defined by the specification, the end point reference value is never included when the connection is released at the destination.

Values Hex (H.0..H.ffff)

ATTRIBUTE nodeId

Description This attribute indicates the lowest level node Id traversed for this hop.

Values String (22, Hex)

ATTRIBUTE nodeName

Description This attribute indicates the *nodeName* under the *ModuleData* component for this hop. Only Nortel Networks Multiservice Switches provide this information by including it in the Vendor Specific group.

Values String (15, ASCII)

ATTRIBUTE portId

Description This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.

Values Decimal (0..4294967295)

ATTRIBUTE portName

Description This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. Only Nortel

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Networks Multiservice Switches provide this information by including it in the Vendor Specific group.

Values — String (55, ASCII)

ATTRIBUTE pnniTraceContRefusalIndPresent (refusal)

Description — This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.

This is not applicable for a connection trace because this connection has already been established.

Values — absent
present

ATTRIBUTE crankbackDestNodeIndPresent (dest)

Description — This attribute indicates whether the “PNNI Crankback Received at Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node and has received a crankback for this call from a non-PNNI interface.

This is not applicable for a connection trace because this connection has already been established.

Values — absent
present

ATTRIBUTE pnniCrankbackGapIndPresent (gap)

Description — This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call has been subjected to a crankback, however, no Trace Transit List IE was returned by the node initiating the crankback.

This is not applicable for a connection trace because this connection has already been established.

Values — absent
present

ATTRIBUTE crankBackCause (cause)

Description — This attribute indicates the crankback cause. Please refer to the Private-Network-to-Network-Interface Specification Version 1.0 for more information.

This is not applicable for a connection trace because this connection has already been established.

For the test connection, this attribute is present when the *traceCrankback* is set to ***Yes.***

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Values Decimal (0..1000)

ATTRIBUTE blockedTransitType (type)

Description This attribute indicates the blocked transit type.

This is not applicable for a connection trace because this connection has already been established.

For the test connection, this attribute is present when the *traceCrankback* is set to ***Yes***.

Values Succeeding end block
Blocked node
Blocked link

ATTRIBUTE blockedNodeId (bNodeId)

Description This attribute indicates the blocked node Id during the call setup request. The blocked node Id identifies the logical node where the connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is the ***Blocked node.***

Values String (22, Hex)

ATTRIBUTE blockedLinkPrecedingNodeId (pNodeId)

Description This attribute indicates the blocked link's preceding node Id during the call setup request. The blocked link's preceding node Id identifies the logical node preceding a link where the connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.

Values String (22, Hex)

ATTRIBUTE blockedLinkPortId (bPortId)

Description This attribute indicates the blocked link's port identifier value used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Values Decimal (0..4294967295)

ATTRIBUTE blockedLinkSucceedingNodeId (sNodeId)

Description This attribute indicates the blocked link's succeeding node Id during the call setup request. The blocked link's succeeding node Id identifies the logical node succeeding a link where the connection or party has been

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blocked.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Values — String (22, Hex)

ATTRIBUTE dstVpiVci

Description — This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is displayed for ATM interfaces only.

For the connection trace, the VPI.VCI values are included in the trace when the *-s* option is specified.

For the test connection, as defined by the specification, the VPI.VCI values are never included when the connection is released at the destination.

Values — Integer Sequence (0..4095; 0..65535)

ATTRIBUTE dstDlci

Description — This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces.

For the connection trace, the VPI.VCI values are included in the trace when the *-s* option is specified.

For the test connection, as defined by the specification, the VPI.VCI values are never included when the connection is released at the destination.

Values — Decimal (0..1023)

ATTRIBUTE dstCallReference

Description — This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node.

For the connection trace, the call reference value is included in the trace when the *-a* option is specified.

For the test connection, as defined by the specification, the call reference value is never included when the connection is released at the destination.

Values — Hex (H.0..H.ffffff)

ATTRIBUTE dstEndPointReference

Description — This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node.

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For the connection trace, the end point reference value is included in the trace when the *-a* option is specified.

For the test connection, as defined by the specification, the end point reference value is never included when the connection is released at the destination.

Values — Hex (H.0..H.ffff)

ATTRIBUTE specifiedPath

Description — This attribute indicates whether this hop is the originator of this manually configured path. Only Nortel Networks Multiservice Switches provide this information by including it in the Vendor Specific group.

Values — no
yes

RESPONSE Syntax Error(s):

Description — A *Set* command produces this response when a syntax error is detected in an attribute whose value is a regular expression.

ATTRIBUTE errorString3

Description — This attribute contains the syntax error when an invalid character is detected in the expression.

Values — String (1..255, ASCII)

ATTRIBUTE errorString30

Description — This attribute contains the syntax error when duplicate special characters are found.

Values — String (1..255, ASCII)

RESPONSE Connection failed or not enough resources.

Description — The *Trace* command produces this response to indicate that there are not enough resources and displays the cause identifier for the operator to look at.

System action: None.

Operator action: Look at the cause identifier, change the proper parameters, and try this command again.

ATTRIBUTE causeId

Description — This attribute indicates the cause code value to identify the failure.

Values — Decimal (0..1000)

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RESPONSE

Description — The *Trace* command produces this response when the vendor specific information exists for one hop in the trace record. This is part of the complete response. The complete response may include multiple instances of this response.

ATTRIBUTE length

Description — This attribute indicates the length of a vendor specific information group.

Values — Decimal (0..11)

ATTRIBUTE organizationUniqueId (oui)

Description — This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.

Values — String (3, Dashed Hex)

ATTRIBUTE data

Description — This attribute indicates the contents of a vendor specific information group.

Values — String (1..8, Hex)

RESPONSE Error: The value of ripInterface, ..., does not match any RIP interface address provisioned on this routing component.

Description — A *Check Prov* command produces this response when the attribute *ripInterface* is set to an address that does not match any *logicalIf* address on this routing component (*Vr*, *Rtr* or *Vrf*) that has a *RipIf*.

ATTRIBUTE invalidRipInterfaceAddress

Description — This attribute contains value of the invalid *ripInterface* address.

Values — IP address

RESPONSE Error: The value of ripNeighbor, ..., is not a valid IP address for a RIP neighbor.

Description — A *Check Prov* command produces this response when the attribute *ripNeighbor* is set to an address that does not belong to any Class A, B or C network.

ATTRIBUTE invalidRipNbrAddress

Description — This attribute contains value of the invalid *ripNeighbor* address.

Values — IP address

RESPONSE Error: The value of routeReflectorCluster should not be ....

Description — The *Check Prov* command produces this response when attribute *routeReflector* of *Bgp* component is ***true*** and the *routeReflectorCluster* attribute is ***0.0.0.0*** or ***255.255.255.255***.

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ATTRIBUTE invalidBgpRouteReflectorClusterId

Description — This attribute contains the invalid route reflector cluster identifier.

Values — IP address

RESPONSE Error: Peer ... cannot be a client if the routeReflector attribute of BGP is false.

Description — A *Check Prov* command produces this response when the peer is specified as a client but the attribute *routeReflector* of *Bgp* component is not ***true***

ATTRIBUTE inwIpBgpRouteReflectorClient

Description — This attribute contains the IP address of the peer that is provisioned as a client

Values — IP address

RESPONSE Extenal peer ... cannot be a client of a routeReflector.

Description — A *Check Prov* command produces this response when an external peer is provisioned as a client of a Route Reflector.

ATTRIBUTE inwIpBgpRrExternalClientAddress

Description — This attribute contains the IP address of the external peer that is provisioned as a client

Values — IP address

RESPONSE There are ... records available for storage.

Description — The *Start* command produces this response indicating the number of records available to be stored.

System action: None.

Operator action: If the number of records available is zero, the operator should stop and clear some of the existing filters on this *Lp* or increase the value of *Lp/n Eng PTrace Ov maxTraceRecords*.

ATTRIBUTE recordsAvailable

Description — This attribute indicates the number of available records stored on this *Lp.*

Values — Decimal (0..200)

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RESPONSE Error:The encryption key length must be ... hex digits.

Description

A *Check Prov* command produces this response when *encAlgorithm* attribute is set to ***des***, ***3des*** or ***aes*** but the length of *encKey* attribute is not correct.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Ensure the length of *encKey* attribute is correct for the *encAlg* attribute.

ATTRIBUTE encKeySize

Description

The attribute indicates the correct length for the encryption key.

Values

Decimal (0; 16; 48)

RESPONSE Error:The authentication key length must be ... hex digits.

Description

A *Check Prov* command produces this response when *authAlgorithm* attribute is set to ***md5*** or ***sha1***, but the length of *authKey* attribute is not correct (32 or 40).

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Ensure the length of *authKey* attribute is valid for the *authAlg* attribute.

ATTRIBUTE authKeySize

Description

The attribute indicates the correct length for the authentication key.

Values

Decimal (0; 32; 40)

RESPONSE Warning:You must now set the key(s) for the new component:...

Description

A *Copy Prov* command produces this warning when a new *Vr/<string> Ip Spd/<string> Policy/<string> Sa/<secDestination, secProtocol, spi> ManualEspSa* component is created from an existing one. All attribute values are copied to the new component, except for the *authKey* and/or *encKey* attributes. For security reasons, those attribute values are not copied from one component to another.

System action: The *authKey* and/or *encKey* attributes for the new *ManEspSa* component are set to empty strings. Any subsequent *Check Prov* command involving the new component will fail unless the keys have been set to new values by the operator.

Operator action: *Set* the *authKey* and/or *encKey* attributes for the new *ManEspSa* component.

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ATTRIBUTE componentName

Description — The attribute indicates the component whose keys must be set.

Values — The name of the component

RESPONSE Error:The Ip Address ... must be a subnet address given provisioned netMask.

Description — A *Check Prov* command produces this response when it detects that the IP address of this *IpLogicalInterface* or *Interface* is not a subnet address given the provisioned *netMask*, and this *ProtocolPort* or *Interface* is linked to a *VirtualMedia Interface* or *Loopback Interface* component whose *mode* is set to ***alwaysUpSummaryInterface***.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Change the value of IP address to a subnet address given the provisioned *netMask*.

ATTRIBUTE invalidAddress

Description — This attribute contains the value of invalid IP address.

Values — IP address

RESPONSE Released with :

Description — The Trace command produces this response to indicate the cause and diagnostic code for why the connection was relaesed.

System action: None.

Operator action: To debug why the connection failed.

ATTRIBUTE causeCode

Description — This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.

Values — Decimal (0..255)

ATTRIBUTE diagCode

Description — This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.

Values — String (0..8, ASCII)

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RESPONSE Error:echoCancellationTailLength on a ... card must be set to one of the following values:...

Description

A *Check Prov* command produces this response if the user sets the *echoCancellationTailLength* attribute to an inappropriate value for the card in use.

A value of ***32*** or ***autoConfigure*** is allowed on a ***12mVspAal*** card.

A value of ***32***, ***48*** or ***autoConfigure*** is allowed on a ***Vsp2*** card.

A value of ***64***, ***128*** or ***autoConfigure*** is allowed on a ***2pGeMmSrVsp3*** card.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *echoCancellationTailLength* attribute is set to the appropriate value for the card being used

ATTRIBUTE vgsCardType

Description — This attribute indicates the card type being used.

Values
12mVspAal
Vsp2
2pGeMmSrVsp3

ATTRIBUTE vgsBragEcanTailLength

Description — This attribute indicates the allowed values for the *echoCancellationTailLength* attribute.

List of
autoConfigure
32
48
64
128

List Size — 4

RESPONSE

Description — This collected event represents the security logs for an SNMP set request. Several such logs may be required for a single set PDU.

ATTRIBUTE managerIpAddress

Description — This attribute is the IP address and port of the SNMP Management station (Manager) that issued the set request. It is in the format of IPaddress-162.

Values — String (1..255, ASCII)

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ATTRIBUTE snmpCommand

Description	This attribute is the command that was received by the SNMP Agent (for example, Set mscLpDS1ChanTimeslotDataRate.8.0.0 1).
Values	String (1..255, ASCII)

ATTRIBUTE cliCommand

Description	This attribute is the command line interface (CLI) equivalent of the command that was received by the SNMP Agent (for example, set lp/8 ds1/0 chan/0 timeslotDataRate doNotOverride). There is no equivalent CLI command for a Standard MIB variable set request.
Values	String (1..255, ASCII)

ATTRIBUTE response

Description	This attribute is the success/failure indicator of the command that was entered. In the case of a failure, a meaningful response message will be provided when possible. In most cases, this is the same message received if the command is entered via the CLI interface. Otherwise the message may be one of these responses defined under the *SNMP* component: SnmpAgentResourceUnavailable, SnmpAgentForcedOutProvMode, SnmpAgentReqFullSemantic, SnmpAgentUnknownCommunity, SnmpAgentReadonlyCommunity, SnmpAgentReadonlyManager, SnmpAgentUnknownManager, SnmpAgentRespPDUTooBig, SnmpAgentViewInvalidOid, SnmpAgentViewExcluded, SnmpAgentViewNotLeafNode, SnmpAgentViewNotWritable, SnmpAgentViewWrongType, SnmpAgentAddCompError, SnmpAgentSetAttrError, SnmpAgentGeneralErrors, SnmpAgentCpResetErr
Values	String (1..275, ASCII)

RESPONSE Error:...An invalid object identifier found in VarBind ....

Description	An SNMP set request produces this response when the SNMP set request has an invalid object identifier. **System action**: the command terminates without having done anything. **Operator action**: Validate the object identifier.

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ATTRIBUTE attributeInError

Description — This attribute contains the index of the SNMP VarBind that caused this error.

Values — Decimal (1..1000)

RESPONSE Error:...The object identifier specified in VarBind ... is excluded by the view.

Description — An SNMP set request produces this response when the SNMP set request has an object identifier that is excluded by the SNMP view.

This can represent a security breach.

System action: the command terminates without having done anything.

Operator action: Use an appropriate view or reconfigure the current one.

ATTRIBUTE attributeInError

Description — This attribute contains the index of the SNMP VarBind that caused this error.

Values — Decimal (1..1000)

RESPONSE Error:...The object identifier specified in VarBind ... is not a leaf node.

Description — An SNMP set request produces this response when the SNMP set request has an object identifier that is not a leaf node.

System action: the command terminates without having done anything.

Operator action: none.

ATTRIBUTE attributeInError

Description — This attribute contains the index of the SNMP VarBind that caused this error.

Values — Decimal (1..1000)

RESPONSE Error:...The object identifier spcified in VarBind ... is not writable.

Description — An SNMP set request produces this response when the SNMP set request has an object identifier that is not writable.

System action: the command terminates without having done anything.

Operator action: Validate the object identifier.

ATTRIBUTE attributeInError

Description — This attribute contains the index of the SNMP VarBind that caused this error.

Values — Decimal (1..1000)

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RESPONSE Error:...The value specified in VarBind ... has the wrong type.

Description

An SNMP set request produces this response when the SNMP set request has an object identifier with a wrong type.

System action: the command terminates without having done anything.

Operator action: Validate the type of the object identifier.

ATTRIBUTE attributeInError

Description

This attribute contains the index of the SNMP VarBind that caused this error.

Values

Decimal (1..1000)

RESPONSE Error:...Set failed on VarBind ... with the error status: ....

Description

An SNMP set request produces this response when the SNMP set request failed on a Standard MIB variable.

System action: the command terminates without having done anything.

Operator action: Check the logs for the SNMP error status.

ATTRIBUTE snmpVarBindIndex

Description

This attribute contains the index of the SNMP VarBind that caused this error.

Values

Decimal (1..1000)

ATTRIBUTE snmpErrorCode

Description

This attribute contains the SNMP error status (RFC1905).

Values

tooBig
noSuchName
badValue
readOnly
genErr
noAccess
wrongType
wrongLength
wrongEncoding
wrongValue
noCreation
inconsistenValue
resourceUnavailable
commitFailed
undoFailed
authorizationError
notWritable
inconsistenName
lastError

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RESPONSE Error:...Set failed on Component ... with the error status: ....

Description — An SNMP set request produces this response when the SNMP set request failed on adding a component.

System action: the command terminates without having done anything.

Operator action: Check the logs for the SNMP error status.

ATTRIBUTE snmpFailedCompName

Description — This attribute contains the component name the set request failed on.

Values — The name of the component

ATTRIBUTE snmpAddErrorCode

Description — This attribute contains the SNMP error status (RFC1905).

Values — genErr
wrongValue
inconsistenName

RESPONSE Error:...Set failed on Attribute ..... with the error status: ....

Description — An SNMP set request produces this response when the SNMP set request failed on setting an attribute.

System action: the command terminates without having done anything.

Operator action: Check the logs for the SNMP error status.

ATTRIBUTE snmpFailedSetCompName

Description — This attribute contains the component name the set request failed on.

Values — The name of the component

ATTRIBUTE snmpFailedAttrName

Description — This attribute contains the attribute name the set request failed on.

Values — Decimal (1..65535)

Replication — The name of the component

ATTRIBUTE snmpSetErrorCode

Description — This attribute contains the SNMP error status (RFC1905).

Values — genErr
wrongLength
wrongValue
inconsistenName

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RESPONSE Error:The dscpToMatch attribute must contain at least one value.

Description

A *Check Prov* command produces this response if the *dscpToMatch* attribute of the *BehaviorAggregate* component does not contain at least one value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *dscpToMatch* attribute contains at least one value.

ATTRIBUTE ba1

Description

This attribute specifies the *BehaviorAggregate* component where the *dscpToMatch* attribute is empty.

Values

The name of the component

RESPONSE Error:The following BehaviorAggregate components contain conflicting dscpToMark values:

Description

A *Check Prov* command produces this response if the *dscpToMark* attribute of any two *BehaviorAggregate* subcomponents of the same *IngressServices* or the same *EgressServices* specify the same DSCP value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the two conflicting *BehaviorAggregate* components, or ensure that the two *dscpToMark* attributes specify different DSCP values.

ATTRIBUTE ba1

Description

This attribute specifies the first of two conflicting *BehaviorAggregate* components.

Values

The name of the component

ATTRIBUTE ba2

Description

This attribute specifies the second of two conflicting *BehaviorAggregate* components.

Values

The name of the component

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RESPONSE Error:The following BehaviorAggregate components contain conflicting dscpToMatch values:

Description

A *Check Prov* command produces this response if any value specified by the *dscpToMatch* attribute appears in two different *BehaviorAggregate* subcomponents of the same *IngressServices* or of the same *EgressServices*.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the two conflicting *BehaviorAggregate* components, or ensure that the two *dscpToMatch* attributes specify disjoint sets of DSCP values.

ATTRIBUTE ba1

Description

This attribute specifies the first of two conflicting *BehaviorAggregate* components.

Values

The name of the component

ATTRIBUTE ba2

Description

This attribute specifies the second of two conflicting *BehaviorAggregate* components.

Values

The name of the component

RESPONSE Error:One of the following two PerHopBehavior subcomponent instances must be removed:

Description

A *Check Prov* command produces this response if two *PerHopBehavior* subcomponents instance values are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the two conflicting *PerHopBehavior* components.

ATTRIBUTE phb1

Description

This attribute specifies the first of two conflicting *PerHopBehavior* components.

Values

The name of the component

ATTRIBUTE phb2

Description

This attribute specifies the second of two conflicting *PerHopBehavior* components.

Values

The name of the component

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RESPONSE Error:The media ... is not supported for a Virtual Router that is linked to a VpnXc card.

Description

The *Check Prov* command produces this response when a *VirtualRouter* is linked to a ***VpnXc*** card, and it has a *ProtocolPort* that is linked to a media which is not supported for a ***VpnXc*** based Virtual Router.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: One of the following actions should be taken:
- delete the *ProtocolPort* that is linked to the unsupported media, or
- set the value of the *virtualRouterProcessor* attribute for the *VirtualRouter* to ***Lp/0***, or
- move the *ProtocolPort* to a *VirtualRouter* whose *virtualRouterProcessor* attribute value is ***Lp/0***.

ATTRIBUTE media

Description

This attribute indicates the component name of the unsupported media.

Values

The name of the component

RESPONSE Error:The ... feature does not support ... trace receiver.

Description

The *Start* command produces this response when attempted against a service trace receiver that is not supported by the targeted trace service.

System action: The *Start* command has no effect.

Operator action: Check the specified receiver type against the type of service trace as following, correct the receiver name in service *SrvTrace rcvr* attribute, then enter *Start* command again.

Currently, Frame Relay Trace features support ***X25***, ***FrameRelay*** and ***ATM*** receivers, and ATM Trace features support ***FrAtm*** and ***ATM*** receivers.

ATTRIBUTE serviceTraceFeature

Description

This attribute indicates the name of service trace feature.

Values

String (0..20, ASCII)

ATTRIBUTE rcvrFeature

Description

This attribute indicates the name of trace receiver feature.

Values

String (0..20, ASCII)

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RESPONSE Error:The dscpToMark attribute is not equal to the instance value of a PerHopBehavior subcomponent of the Vr DifferentiatedServicesDomain

Description

A *Check Prov* command produces this response if the *dscpToMark* attribute value of the *BehaviorAggregate* subcomponent of the *IngressServices* is not equal to the instance value of a *PerHopBehavior* subcomponent under the *VirtualRouter DifferentiatedServicesDomain.*

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *dscpToMark* attribute of the *BehaviorAggregate* subcomponent of the *IngressServices* is equal to the instance value of a *PerHopBehavior* subcomponent under the *VirtualRouter DifferentiatedServicesDomain*.

ATTRIBUTE ba1

Description

This attribute specifies the *BehaviorAggregate* component where the *dscpToMark* attribute is out of range.

Values

The name of the component

RESPONSE Error:The following component,..., is incompatible with the use of a VrAp component in this Nsta/n Vgs hierarchy.

Description

A *Check Prov* command produces this response if a user tries to provision one of the following components under the same *Nsta/n Vgs* component tree where the *VrAp* component is provisioned: *Nap, Aap, Pap, SpvcAp, IpIf* and *VCac*.

System action: The *Check Prov* command fails. No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no such component is provisioned within a *Nsta/n Vgs* component hierarchy which contains a *VrAp* component.

ATTRIBUTE disallowedCompName

Description

This attribute contains the name of the disallowed component.

Values

The name of the component

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RESPONSE Error:Duplicate IP addresses are assigned to the following components:...

Description

A *Check Prov* command generates this response if the same IP address is assigned to two or more components which have *VrAp* subcomponents associated with the same *Vr/n* component instance.

System action: The *Check Prov* command fails. No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the IP addresses are unique for all components with *VrAp* subcomponents associated with the same *Vr/n* component instance.

ATTRIBUTE vgsCheckDuplicateErrCmpnt

Description

This attribute contains the names of the components for which this check fails.

List of

The name of the component

RESPONSE Error:The ... component must have its mode attribute set to alwaysUpInterface.

Description

A *Check Prov* command generates this response if the *Vm/n If/m* instance has a *Mode* attribute value other than ***alwaysUpInterface***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *Vm/n If/m* instance associated with this *VrAp* component has the *mode* attribute set to ***alwaysUpInterface***.

ATTRIBUTE vrapCheckVmIfMode

Description

This attribute contains the name of the *Vm/n If/m* component for which this check fails.

Values

The name of the component

RESPONSE Error:The udpPortBase attribute must equal 16384, 32768 or 49152 when provisioned on a ... card.

Description

A *Check Prov* command produces this response if the user tries to provision a *udpPortBase* value other than ***16384***, ***32768*** or ***49152*** when the *Shelf Card cardType* attribute is of the specified type.

System action: no *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision the *udpPortBase* attribute with a value of ***16384***, ***32768*** or ***49152***.

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ATTRIBUTE vgsCardType

Description — This attribute indicates the card type being used.

Values
2pGeMmSrVsp3
2pOC3ChSmIrVsp3
2pVS
2pOC3ChSmIrVsp4e

RESPONSE Error:The tosMask attribute of the following components are not equal:

Description — A *Check Prov* command produces this response if the *tosMask* attribute of all *EgressCosTreatment* subcomponents of the *CosPolicyGroup* are not equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *tosMask* attribute of all *EgressCosTreatment* subcomponents of the *CosPolicyGroup* are equal.

ATTRIBUTE inwIpPolEgressCosTmtTosMask1

Description — This attribute specifies the first of two *EgressCosTreatment* components where the *tosMask* attributes are not equal.

Values — The name of the component

ATTRIBUTE inwIpPolEgressCosTmtTosMask2

Description — This attribute specifies the second of two *EgressCosTreatment* components where the *tosMask* attributes are not equal.

Values — The name of the component

RESPONSE Error:The provisioned IP address must not be a broadcast address within the provisioned subnetMask.

Description — A *Check Prov* command produces this response if the IP Address is a broadcast address with in the *subnetMask*.

System Action: no *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Provision a non-broadcast IP address.

ATTRIBUTE broadcastIpAddress

Description — This attribute contains the value of the broadcast IP address.

Values — IP address

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RESPONSE The following patched AVs reference the AV that you are attempting to remove. To remove the AV in question,first remove the patched AVs.

Description — The *Remove* command produces this response when the *AV* cannot be removed because there is a dependent patched *AV* present on the disk. Because of the relationship between a patched *AV* and its parent *AV*, the parent *AV* cannot be removed while it has patched *AV*s present on the disk, regardless of whether the patched *AV*s are currently in use.

System action: The *AV* is not removed.

Operator action: If the patched *AV*s are no longer in use, remove these *AV*s, and then remove the original *AV*. If the patched *AV*s are still in use, this *AV* cannot be removed.

ATTRIBUTE listOfFileNames

Description — This attribute is a list of patched *AV*s that are based on the AV that the user is attempting to remove.

List of — String (1..30, ASCII)

RESPONSE Warning:The discardPriority attribute of the following components specify different drop precedence selection methods:

Description — A *Check Prov* command produces this response if the *discardPriority* attribute of one or more, but not all, of the *IngressCosTreatment* subcomponents of the *CosPolicyGroup* is set to ***unchanged***.

System Action: The *Check Prov* will complete if there are no errors, however if the *CosPolicyGroup* component is used and the view is activated, then the Class of Service (CoS) to drop precedence mapping will not always apply.

Operator Action: Ensure that the *discardPriority* attribute of all *IngressCosTreatment* subcomponents of the *CosPolicyGroup* are either all set to ***unchanged*** or each set individually to ***high***, ***medium***, or ***low***.

ATTRIBUTE inwIpIngressCosTmtPortDp1

Description — This attribute specifies the first of two *IngressCosTreatment* components where the *discardPriority* attributes conflict.

Values — The name of the component

ATTRIBUTE inwIpIngressCosTmtPortDp2

Description — This attribute specifies the second of two *IngressCosTreatment* components where the *discardPriority* attributes conflict.

Values — The name of the component

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RESPONSE Warning:The ... attribute will be ignored when the ClsDef component is provisioned.

Description — The *Check Prov* command produces this response when the *ClsDef* component is provisioned.

System Action: The *Check Prov* passes.

Operator Action: No operator action required.

ATTRIBUTE mplsRsvpQosClsBwWarning

Description — This attribute indicates the name of the *Bandwidth* attribute to be used in the response.

Values — Decimal (0..65535)

RESPONSE The following patches are mutually exclusive and cannot beprovisioned together:

Description — The check Prov command produces this response when two or more Reset patches provisioned in the *Sw patchList* are found to be patching the same object file. Such patches cannot be activated together and are mutually exclusive.

System action: Semantic check is failed. No patches are loaded. The current view is unchanged.

Operator action: If a patch is required that reflects all the solutions found in the patches in question, contact your customer support representative in order to obtain a composite patch. If only one of the patches is required, remove all of the other flagged patches from the *Sw Patchlist*.

ATTRIBUTE duplicatePatchObjList

Description — This attribute indicates a list of Reset patches that cannot be provisioned together because they patch the same object file.

List of — String (1..30, ASCII)

RESPONSE The following Reset patches in the Sw patchList are incompatible with the patched AVs in the Sw Avl:

Description — The check prov command produces this response when a conflict is detected between a patched *AV* (new application version based on an existing, released *AV*) and a Reset patch provisioned in the *Sw patchList*. Such conflicts arise when both patches are patching the same object file.

System action: Semantic check is failed. No patches are loaded. The current view is unchanged.

Operator action: If a patch is required that reflects all the solutions found in the patches in question, contact your customer support representative in order to obtain a composite patch. If only the patched *AV* is required, remove all of the flagged patches from the Sw *Patchlist*.

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ATTRIBUTE patchPdAvConflictList

Description	This attribute indicates a list of patches (patched *AV*s and Reset patches from the *Sw patchList*) that cannot be provisioned together because they patch the same object file.
List of	String (1..30, ASCII)

RESPONSE Warning:The cpEquipmentProtection attribute has been changed.Standby CP (card ...) will restart when this view is activated.

Description	This response is issued when the standby CP will be restarted due to a change in the *cpEquipmentProtection* attribute.

ATTRIBUTE cpepCardNumberReset

Description	The card number of the standby CP card which will be reset when the provisioning view is activated.
Values	Decimal (0..15)

RESPONSE Error:An Lsp component must have a ... or a ... subcomponent provisioned when an AtmSap component is provisioned under the LspG component.

Description	The *Check Prov* command produces this response when one of the specified components cannot be found in the edit view. **System Action**: The *Check Prov* fails. **Operator Action**: Provision the component indicated as missing component under this *Lsp* component.

ATTRIBUTE mplsLspGLspOneOfTwoSubCompError

Description	This attribute indicates the name of the missing subcomponent to be used in the response.
Values	Decimal (0..65535)

ATTRIBUTE mplsLspGLspOneOfTwoRsvpQosError

Description	This attribute indicates the name of the other component to be used in the response.
Values	Decimal (0..65535)

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RESPONSE Error: The value of peerIpAddress, ..., does not match the address of any peer of the associated VCG virtual router.

Description

A *Check Prov* command produces this response when the value of attribute *peerIpAddress* does not match the address of any BGP peer of the associated VCG virtual router.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the value of the *peerIpAddress* attribute of the *MBgp ImportPolicy/n* subcomponent under this *VirtualRouter* matches the instance value of one of the *Bgp Peer/<peerIpAddress>* subcomponents under the associated VCG *VirtualRouter*.

ATTRIBUTE invalidPeerAddress

Description

This attribute contains the invalid *peerIpAddress* value.

Values

IP address

RESPONSE Error: The address ... is not a valid IP network address prefix.

Description

A *Check Prov* command produces this response when the address prefix defined by the *Network* component is not a valid IP network address prefix. Examples include all 0's (***0.0.0.0***) or all 1's (***255.255.255.255***).

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Provision the *prefix* and *length* attributes of the specified *Network* component to be a valid non-reserved address prefix.

ATTRIBUTE invalidAddress

Description

This attribute contains the value of the invalid address prefix.

Values

IP address

RESPONSE Warning:The ... attribute will be ignored when the Lsp component has an RsvpQos subcomponent.

Description

The *Check Prov* command produces this response when the *Lsp* component has an *RsvpQos* component provisioned and the *PathOnDemand* attribute has been set to ***enabled***.

System Action: The *Check Prov* command passes.

Operator Action: No operator action required.

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ATTRIBUTE mplsTeRsvpQosWarning

Description	This attribute indicates the name of the attribute to be used in the response.
Values	Decimal (0..65535)

RESPONSE Error:An Lsp component must not have a ... subcomponent provisioned when a StaticRoute subcomponent is provisioned.

Description	The *Check Prov* command produces this response when the specified component name is found in the edit view. **System Action**: The *Check Prov* fails. **Operator Action**: Remove the component indicated under this *Lsp* component.

ATTRIBUTE mplsLspGLspNotAllowedCompError

Description	This attribute indicates the name of the component to be used in the response.
Values	Decimal (0..65535)

RESPONSE Warning:Duplicate IP addresses are assigned to the following components:...

Description	A *Check Prov* command generates this response if the same IP address is assigned to two or more components within any *Nsta/n Vgs* components hierarchy. **System action:** None. **Operator action:** Ensure that the duplication of IP addresses do not cause a problem.

ATTRIBUTE vgsCheckDuplicateWngCmpnt

Description	This attribute contains the names of the components for which duplicate IP addresses are identified by this check.
List of	The name of the component

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RESPONSE Warning:tdmLogLaw is recommended to take one of the following values:...

Description

A *Check Prov* command produces this response if the user sets the *tdmLogLaw* attribute to an inappropriate value for the card in use.

A value of ***aLaw*** or ***autoConfigure*** is recommended for an ***E1*** port.

A value of ***muLaw*** or ***autoConfigure*** is recommended for an ***DS1*** port.

System action: An *Activate Prov* command will be accepted with a warning being generated.

Operator action: Ensure that the *tdmLogLaw* attribute is set to the appropriate value for the TDM interface being used.

ATTRIBUTE vgsBragTdmLogLaw

Description — This attribute indicates the allowed values for the *tdmLogLaw* attribute.

List of
muLaw
aLaw
autoConfigure

List Size — 2

RESPONSE Warning:The provisioned ATM Sustained Cell Rate may be too small if all timeslots are active.

Description — A *Check Prov* command produces this response if the user tries to provision a sustained cell rate which is less than the minimum value that would be required for a given connection. This value is altered when fax idle suppression or silence suppression is enabled.

System action: None.
Operator action: Ensure that the Sustained Cell Rate is acceptable.

ATTRIBUTE subComponent

Description — The name of the related component which contains the Sustained Cell Rate. It may be one of the following:

AtmIf/n Vcc/m Vcd Tm.
Nsta/n Conn/m Aap
Nsta/n Conn/m SpvcAp"

Values — The name of the component

ATTRIBUTE nstaSustainedCellRate

Description — The calculated value of the sustained cell rate.

Values — Decimal (0..2147483647)

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RESPONSE Error: FrUni DirectConnection and Dlci ... are mutually exclusive.

Description

The *Check Prov* command generates this response when a *DirectConnection* component is provisioned under the *FrUni* component, and a *BnxIwf* or *IpConnection* subcomponent is provisioned under a *Dlci* subcomponent of the same *FrUni*.

System Action: The *Check Prov* command fails. An *Activate Prov* command will not be accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Delete the *DirectConnection* component under the *FrUni*.
or
Delete the *Dlci* with the *BnxIwf* or *IpConnection* subcomponent provisioned under it.
or
Replace the *BnxIwf* or *IpConnection* component under the indicated *Dlci* with a *DirectCall* component.

ATTRIBUTE frUniDlciMutualExclusiveNetCmpnt

Description

This attribute indicates the *Dlci* subcomponent that is mutually exclusive to the *DirectConnection* subcomponent.

Values

Decimal (1..65535)

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

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ATTRIBUTE flow1

Description — This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values — The name of the component

ATTRIBUTE flow2

Description — This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values — The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, the same port numbers, and the same protocol:

Description — A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description — This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values — The name of the component

ATTRIBUTE flow2

Description — This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values — The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal and not zero.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of the *portNumberRange* attributes are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal and not zero.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of the *portNumberRange* attributes are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, all port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes are not specified.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, all port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes are not specified.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, all port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of *portNumberRange* attributes are not specified.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

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RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, all port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of *portNumberRange* attributes are not specified.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The ... attribute does not conform to required syntax.

Description

A *Check Prov* command produces this response if the value of one of the termination identifier format attributes does not comply with the relevant termination identifier syntax.

The termination identifier syntax is described in NTP NN10600-780.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision the attribute to comply with the termination identifier syntax.

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ATTRIBUTE formatAttribute

Description — The name of the *Mgc* termination ID format attribute which is at fault.

Values
ds3Format
e1Format
stmnVc4Vc12Format
stsnOcnVt15Format
ipFormat
aal2Format

RESPONSE Error:stateChangeSignalingMode on a ... card must be set to ....

Description — A *Check Prov* command produces this response if the user tries to provision the *stateChangeSignalingMode* attribute with a value incompatible with the current VSP card type.

System action: The *Check Prov* command fails. No *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *stateChangeSignalingMode* attribute is set to the appropriate value for the current VSP card being used.

ATTRIBUTE vgsCardType

Description — This attribute indicates the VSP card type currently being used by PVG.

Values
12mVspAal
Vsp2
2pOC3ChSmIrVsp3
Vsp2W
2pOC3ChSmIrVsp4e

ATTRIBUTE vgsStateChangeSignalingMode

Description — This attribute indicates the current setting of *Mgc stateChangeSignalingMode* attribute.

Values
proprietary
itu

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RESPONSE Error:The expanded form of ... may exceed 64 characters in length.

Description

A Check Prov command produces this response if the maximum possible length of a termination ID is greater than 64 characters.

Expansion of the termination ID formats is described in NTP NN10600-780.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision the format attribute to produce termination IDs whose maximum length is no greater than 64 characters.

ATTRIBUTE formatAttribute

Description

The name of the *Mgc* termination ID format attribute, which is at fault.

Values

ds3Format
e1Format
stmnVc4Vc12Format
stsnOcnVt15Format
ipFormat
aal2Format

RESPONSE Error:The following format attributes will result in identical termination IDs:...

Description

A *Check Prov* command produces this response if any of the following attributes result in identical termination IDs when expanded:

ds3Format
e1Format
stmnVc4Vc12Format
stsnOcnVt15Format
ipFormat
aal2Format

Expansion of the termination ID formats is described in NTP NN10600-780.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision the relevant termination ID format attributes to produce unique termination IDs.

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ATTRIBUTE equalAttributes

Description — A list of *Mgc* termination ID format attribute names.

List of
ds3Format
e1Format
stmnVc4Vc12Format
stsnOcnVt15Format
ipFormat
aal2Format

RESPONSE Error:The Rd or Rt instance value ... specified is not valid.

Description — A *Check Prov* command produces this response when the *Rd* or *Rt* value specified for this VRF is not valid. Valid syntax values can be one of two types, type 0 or type 1.

Type 0 syntax is represented as AS:index, where AS is a valid 2 byte autonomous system number and index is a valid 4 byte integer.

Type 1 syntax is represented as IPAddr:index, where IPADDR is a valid non-zero IP Address and index is a valid 2 byte integer.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Delete the *RouteDistinguisher* or *RouteTarget* component which is causing the semantic check to fail. Add the *RouteDistinguisher* or *RouteTarget* value to be a valid value as specified above.

ATTRIBUTE invalidRdRtValue

Description — This attribute contains the instance value of the invalid *RouteDistinguisher* or *RouteTarget*.

Values — String (3..21, ASCII)

RESPONSE Error:The Rd instance value ... specified must be unique across all Vrfs.

Description — A *Check Prov* command produces this response when the *Rd* instance value specified for this *VpnRouteForwarder* already exists for another *Vrf*.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *RouteDistinguisher* instance value specified is unique across all *Vrfs*.

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ATTRIBUTE nonUniqueRdValue

Description — This attribute contains the instance value of the duplicate *RouteDistinguisher*.

Values — String (3..21, ASCII)

RESPONSE Provisioned file is saved under a new version .... Use -force to attempt loading.

Description — A *Load* command generates this response when the application version in the provisioning file is newer than the current running software version on the shelf. The saved data of some components may be lost while loading this file.

System action: The *Load* command is not executed.
Operator action: Use *-force* to attempt loading.

ATTRIBUTE versionName

Description — This attribute indicates the application version in the provisioning file being loaded.

Values — String (1..30, ASCII)

RESPONSE Warning:The type of component ... has changed.The provisioned data for this component will be lost.

Description — The *Load* command generates this response when the component type in the current running software is different from the component type in the software being loaded. The saved provisioned data for the component will be lost upon activation.

System action: Display partial warning message and continue loading.
Operator action: Note that the component has changed its type; therefore, its attributes will have default values.

ATTRIBUTE component

Description — This attribute contains the name of the component which has changed its type.

Values — The name of the component

RESPONSE Error:...

Description — This error response is generated during the *CheckProv* command. It is generated if the framingType of the framer for the *TdmaIwfBearerChannel* does not match the card type to which the *TdmaIwfBearerChannel* is being provisioned or the *TdmaIwfBearerChannel* is being placed on an unknown
card type.

ATTRIBUTE tdmaIwfBcUnknownCardType

Description — This attribute indicates the *TdmaIwfBearerChannel* has an unknown card type.

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Values Decimal (0)

ATTRIBUTE tdmaIwfMvpFramingTypeError

Description This attribute indicates that the *TdmaIwfBearerChannel*'s framing type does not match its DS1Mvp or E1Mvp card type.

Values Decimal (0)

ATTRIBUTE tdmaIwfMtxFramingTypeError

Description This attribute indicates that the *TdmaIwfBearerChannel*'s framing type does not match its DS1C or E1C card type.

Values Decimal (0)

RESPONSE Error:...

Description This error response is generated when an IP address is not set for this *TdmaIwfCallServer* or the IP address is already being used by another *TdmaIwfCallServer*.

ATTRIBUTE tdmaIwfCsIpAddressUnset

Description This attribute indicates the *TdmaIwfCallServer* added a *TdmaIwfLogicalProcessor* that is being used by another *TdmaIwfCallServer*.

Values Decimal (0)

ATTRIBUTE tdmaIwfCsIpAddressInUse

Description This attribute indicates the *TdmaIwfCallServer* added a *TdmaIwfLogicalProcessor* that is being used by another *TdmaIwfCallServer*.

Values Decimal (0)

RESPONSE Error:...

Description This error response is generated when a *virtualRouterName* set for this *TdmaIwfCallServer* is not set or is set to a non-provisioned *virtualRouterName*.

ATTRIBUTE tdmaIwfVrAttrUnset

Description A *CheckProv* command produces this response if the *virtualRouterName* attribute of this *TdmaIwfCallServer* is not set or references a nonexistent *virtualRouterName*.

Values Decimal (0)

ATTRIBUTE tdmaIwfInvalidVrSet

Description This attribute indicates the *virtualRouterName* set for this *TdmaIwfCallServer* has not been provisioned.

Values Decimal (0)

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RESPONSE Error:...

Description — This error response is generated when the *TdmaIwfCallServer TdmaIwfLogicalProcessor* instance is not added , another *TdmaIwfCallServer* already has that *TdmaIwfLogicalProcessor*, or the user is attempting to provision a service other than TDMA asynchronous data call.

ATTRIBUTE tdmaIwfLpInUse

Description — This attribute indicates the *TdmaIwfCallServer* added a *TdmaIwfLogicalProcessor* that is being used by another *TdmaIwfCallServer*.

Values — Decimal (0)

ATTRIBUTE tdmaIwfAsyncDataOnlySupported

Description — This attribute indicates the supported service provisioned for the *TdmaIwfCallServer* includes another service or services other than asynchronous data only.

Values — Decimal (0)

ATTRIBUTE tdmaIwfTdmaOnlySupported

Description — This attribute indicates the supported technology provisioned for the *TdmaIwfCallServer* includes something other than TDMA only.

Values — Decimal (0)

RESPONSE Error:...

Description — This error response is generated during the *CheckProv* command. It is generated if the following occurs:
1) the *TdmaIwfBearerChannel* has no corresponding *TdmaIwfCallServer*.
2) the *TdmaIwfLogicalProcessor* between corresponding *TdmaIwfBearerChannel* and *TdmaIwfCallServer* does not match.
3) the *LogicalProcessor* and its main card do not match.
The correspondence between the two components is established by way of the first index of the *TdmaIwfBearerChannel* and the index of the *TdmaIwfCallServer*.

ATTRIBUTE tdmaIwfCallServerNotProvisioned

Description — This attribute indicates the corresponding *TdmaIwfCallServer* is not provisioned.

Values — Decimal (0)

ATTRIBUTE tdmaIwfLpConflict

Description — This attribute indicates the *TdmaIwfLogicalProcessor* linked by the corresponding *TdmaIwfCallServer* and *TdmaIwfBearerChannel* is not the same.

Values — Decimal (0)

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ATTRIBUTE tdmaIwfLpError

Description — This attribute indicates that the *LogicalProcessor*'s instance number does not match the card number to which it is provisioned. The user must reprovision the LogicalProcessor so that it matches the card number.

Values — Decimal (0)

RESPONSE Error: ...

Description — The *CheckProv* command produces this response if the *timeslots* attribute of the *Channel* component associated with this bearer channel contains more than one timeslot." This error message is used to specify an *applicationFramerName* for the *TdmaIwfFramer* subcomponent of the *TdmaIwfBearerChannel* that specifies a *Channel,* which has its timeslots set to more than one timeslot. An error is also generated when the *TdmaIwfFramer* subcomponent of the *TdmaIwfBearerChannel* that specifies a *Channel* which has its timeslot set to 16 on an E1 MVP card. Since *timeslot* 16 is reserved for signalling on an E1 MVP card, the *TdmaIwfBearerChannel* cannot be provisioned against this channel.

ATTRIBUTE tdmaIwfMoreThanOneChannel

Description — This attribute indicates the more than one timeslot is attempting to be provisioned against a channel.

Values — Decimal (0)

ATTRIBUTE tdmaIwfChan16

Description — This attribute indicates timeslot 16 is attempting to be provisioned on the E1 MVP or the E1C card.

Values — Decimal (0)

ATTRIBUTE tdmaIwfTimeslotNotOneGreater

Description — This attribute indicates the timeslot selected is not one greater than the channel provisioned in the Framer interfaceName.

Values — Decimal (0)

RESPONSE Error:...

Description — This error response is generated when a *Virtual Router* set for *this GsmIwfCallServer* is not set or is set to a non-provisioned *Virtual Router*.

ATTRIBUTE gsmIwfVrAttrUnset

Description — This attribute indicates the Virtual Router attribute for GsmIwfCallServer is not set.

Values — Decimal (0)

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ATTRIBUTE gsmIwfInvalidVrSet

Description — This attribute indicates the *Virtual Router* set for this *GsmIwfCallServer* has not been provisioned or is inconsistent across other *GsmIwfCallServers*. *GsmIwfCallServers* on a centralized IWF (Interworking Function) must all share the same *Virtual Router*.

Values — Decimal (0)

RESPONSE Error:...

Description — This error response is generated when the *GsmIwfCallServer* Logical Processor subcomponent is not added or another *GsmIwfCallServer* already has that Logical Processor.

ATTRIBUTE gsmIwfNoCallServerLp

Description — This attribute indicates the *GsmIwfCallServer* has no Logical Processor subcomponent.

Values — Decimal (0)

ATTRIBUTE gsmIwfLpInUse

Description — This attribute indicates the *GsmIwfCallServer* added a Logical Processor that is being used by another *GsmIwfCallServer*.

Values — Decimal (0)

RESPONSE Error:...

Description — This error response is generated when
1) the *GsmIwfBearerChannel* has no corresponding *GsmIwfCallServer*.
2) the logical processor between corresponding *GsmIwfBearerChannel* and *GsmIwfCallServer* does not match.
The correspondence between the two components is established by way of the first index of the *GsmIwfBearerChannel* and the index of the *GsmIwfCallServer*.

ATTRIBUTE gsmIwfCallServerNotProvisioned

Description — This attribute indicates the corresponding *GsmIwfCallServer* is not provisioned. The corresponding *GsmIwfCallServer* must have the same trunk group number as *GsmIwfBearerChannel*.

Values — Decimal (0)

ATTRIBUTE gsmIwfLpConflict

Description — This attribute indicates the logical processor linked by the corresponding *GsmIwfCallServer* and *GsmIwfBearerChannel* is not the same.

Values — Decimal (0)

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RESPONSE ERROR:...

Description — The IP address cannot be 0.0.0.0 because devices that wants to communicate with IPI system requires the IP address.

ATTRIBUTE ipiInvalidIpAddrAttr

Description — The Ip Address must have a valid IP value.

Values — Decimal (0..2147483647)

ATTRIBUTE ipiInvalidSubnetMaskAttr

Description — There cannot be 1's after 0's in IPIFR subnet mask value because this is what distinguish a subnet mask from a host address. For example, 255.255.0.0 is a valid subnet mask, while 255.255.0.1 is a host address and therefore invalid as a subnet mask.

Values — Decimal (0..2147483647)

RESPONSE LAPS request of equal or higher priority already in effect.

Description — This response is issued when the APS request invoked by this command entered is of lower priority than the APS requests already present on the *Laps*.
System Action: None
Operation Action: The *clear Laps/n* command clears the current outstanding value of the *nearEndRequest* attribute. The command can be re-issued with a higher *nearEndRequest* attribute value.

ATTRIBUTE lapsResponseText

Description — This response text gives the specific reason why the command was ignored. For example, "Far end is transmitting ***signalFail*** on protection", and a suggested alternative, such as "Use '*switch -force*' to override the ***signalFail***'.

Values — String (0..256, ASCII)

RESPONSE Error: All AtmTConn subcomponents must have a unique combination of remoteAddress and vcci attributes.

Description

A *Check Prov* command produces this response if the user has added at least two *AtmTConn* subcomponents under a *Vgs* component which have the same value for their *remoteAddress* attribute and also have the same value for their *vcci* attribute.

System action: no *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Use unique *remoteAddress* and *vcci* attribute pairing under this *Vgs* component.

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ATTRIBUTE relatedComponent

Description — This attribute identifies the component in which the error was detected.

Values — The name of the component

RESPONSE .....

Description

This response describes the attributes specific to an Alarm Event.

ATTRIBUTE activeListStatus

Description — This mandatory attribute is the active alarm list status. This is equivalent to the DPN-100 Alarm Type field and is used by the MDM to add (upon receiving a SET alarm) and delete (on receiving a CLEAR alarm) alarms from the alarm displays.

Values
message (MSG)
set (SET)
clear (CLR)

ATTRIBUTE severity

Description — This mandatory attribute is the severity of the alarm which should indicate what priority that fixing this problem should be given. All values are OSI-defined; refer to CCITT X.733 for a more complete description.

Values
indeterminate
critical
major
minor
warning
cleared

ATTRIBUTE alarmType

Description — This mandatory attribute is the alarm type field as defined by OSI which is used to indicate a broad category of what is wrong. The first 6 values are OSI-defined; refer to CCITT X.733 (for the first 5) and CCITT X.736 (for the last) for a more complete description.

The value *operator* is used when an alarm is issued due to an operator command. The values *debug* and *unknown* are for compatibility with DPN-100 and are used for debugging alarms and for those which do not fit any of the above, respectively.

Values
communications
qualityOfService
processing
equipment
environmental
security
operator

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debug
unknown

ATTRIBUTE probableCause

Description

This mandatory attribute is the probable cause for the alarm which usually qualifies the Alarm Type field. Most values are OSI-defined; refer to CCITT X.733 and X.736 for a more complete description. Some Nortel Networks proprietary causes are added to be more descriptive in cases where no OSI-defined cause is appropriate.

Values

lossOfSignal
lossOfFrame
framingError
localTransmissionError
remoteTransmissionError
callEstablishmentError
degradedSignal
commSubsystemFailure
commProtocolError
lanError
dteDceInterfaceError
responseTimeExcessive
queueSizeExceeded
bandwidthReduced
retransmissionRateReduced
thresholdCrossed
performanceDegraded
congestion
atOrNearCapacity
storageCapacityProblem
versionMismatch
corruptData
cpuCyclesLimitExceeded
softwareError
softwareProgramError
softwareProgramTermination
fileError
outOfMemory
underlyingResourceUnavailable (underlyingResourceUnavail)
applicationSubsystemFailure
configurationError
powerProblem
timingProblem
processorProblem
datasetModemError
multiplexorProblem
receiverFailure
transmitterFailure
outputDeviceError
inputDeviceError
ioDeviceError

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equipmentFailure
adapterError
duplicateInfo
infoMissing
infoModification
infoOutOfSequence
unexpectedInfo
denialOfService
outOfService
proceduralError
otherOperational
cableTamper
intrusionDetection
otherPhysical
authenticationFailure
breachOfConfidence
nonRepudiationFailure
unauthorizedAccess
otherSecurityService
delayedInfo
keyExpired
outOfHoursActivity
enclosureDoorOpen
excessiveVibration
fireDetected
floodDetected
heatVentCoolingProblem
humidityUnacceptable
leakDetected
materialSupplyExhausted
pressureUnacceptable
pumpFailure
temperatureUnacceptable
toxicLeakDetected
operationalCondition
debugging
unknown
inactiveVirtualCircuit
networkServerIntervention
activeVirtualCircuit

ATTRIBUTE ntpIndex

Description	This mandatory attribute is an 8-digit code that is an index into NTP NN10600-230 which provides a more detailed description of the alarm and possible actions to take. The first 4 digits indicate a “grouping” of alarms (a set of alarms common to a particular subsystem or component, etc.). The last 4 digits are a subindex arbitrarily assigned by the application which is responsible for the “group”.
Values	BCD (8)

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ATTRIBUTE notificationId

Description	This mandatory attribute is the notification Id of the alarm. The high-order byte is the slot number of the *Card* from which this alarm originated. The low-order 24 bits contain a sequence number which increases each time an alarm is generated. Thus, this id provides a simple way of uniquely identifying an alarm as well as the order in which alarms are generated on a card. For cross-card ordering, one would have to look at the time stamp (see ***dateAndTime***).
Values	Hex (H.0..H.ffffff)

ATTRIBUTE relatedComponentNames

Description	This mandatory attribute is a list of the names of any components related to the component (that is, the one in the header FIELD) against which this alarm is raised. It typically contains at least the *LP* and possibly the *Card* on which the originating component resides.
List of	The name of the component

ATTRIBUTE operatorData

Description	This optional attribute is additional hexadecimal information for the network operator to use. Other than for software alarms, it should be described in NTP NN10600-230.Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.
Values	String (0..750, Hex)

ATTRIBUTE pid

Description	This optional attribute is a string representation of the internal process id (PID) of the process that generated the alarm (for internal use only).
Values	String (0..25, ASCII)

ATTRIBUTE fileName

Description	This optional attribute is an internal file name (for internal use only).
Values	String (0..255, ASCII)

ATTRIBUTE fileLineNumber

Description	This optional attribute is an internal line number in the file (see **fileName**) referred to above (for internal use only).
Values	Decimal (0..4294967295)

ATTRIBUTE fileVersion

Description	This optional attribute is a version indicator of the file (**filename**) referred to above (for internal use only).
Values	String (0..255, ASCII)

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ATTRIBUTE internalData

Description — This optional attribute is additional internal hexadecimal information for internal use only. It does not have to be described in NTP NN10600-230.
Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values — String (0..750, Hex)

ATTRIBUTE commentData

Description — This optional attribute is additional textual information for the network operator to use. Other than for software alarms, if it is not self-explanatory, it should be described in NTP NN10600-230.
Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values — String (0..750, ASCII)

RESPONSE The software migration is paused, pause reason:...To resume, type Continue Prov. To stop, type Stop Prov.

Description — The *Activate Prov* command generates this message during a Hitless Software Migration when issued without the -noPause option and when certain software errors are generated or when the list of LPs participating in the Hitless Software Migration is changed before the migration shelf is ready.
Activate Prov command always generates this message during a Hitless Software Migration when issued with *-pause* option.
This response indicates that the software migration is paused. The operator can decide to resume by typing *Continue Prov* or to roll back to the existent software version by typing *Stop Prov.* The migration will pause as long as no action is taken by the operator.

ATTRIBUTE pcsString

Description — This attribute indicates the different reasons for a pause in Hitless Software Migration. Listed are different pause reasons for the corresponding LPs listed in the *PcsProvisioningActivateSwMigWillPause* response.

If the *Activate Prov* command is issued with the *-pause* option, a pause reason is displayed indicating that the migration is paused due to an operator request.

Values — String (0..968, ASCII)

RESPONSE Error: The specified mask ... is not a valid contiguous mask.

Description — This error message appears in response to a Check Prov command when the value of a specified mask is provisioned with an invalid discontiguous mask.
1. The semantic check function will check for the contiguity of the mask by checking if there are contiguous 1's.

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ATTRIBUTE invalidMask

Description — This attribute contains the value of the invalid mask.

Values — IP address

RESPONSE RpHash: RP address of group ... is ..., where the first attribute is the group address, and the second one is the RP address.

Description — This response indicates the Rp for the given multicast group.

ATTRIBUTE gAddr

Description — This attribute represents the multicast group address for which RP is sought.

Values — IP address

ATTRIBUTE rpAddr

Description — This attribute indicates the IP address of the RP.

Values — IP address

RESPONSE RpHash: no RP address was found for group ...

Description — This response indicates that *RpHash* to the given multicast group (IP) address was unsuccessful.

ATTRIBUTE gAddr

Description — This attribute specifies the group IP address for which no RP was found.

Values — IP address

RESPONSE Error: There is no Domain component of instance ... provisioned under Mcast.

Description — A *Check* Prov command produces this response when an attempt is made to add a Domain under PimSm component without provisioning a Domain component of the same instance under *Mcast*.

ATTRIBUTE domainInstance

Description — This attribute indicates the domain instance.

Values — Decimal (0..3)

RESPONSE Error:The ... attribute must be set.

Description — A *Check* Prov command produces this response if the user has not provisioned the *candidateBsrAddrAssignment* attribute.

ATTRIBUTE invalidType

Description — This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values — Decimal (1..65535)

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RESPONSE Error:The ... attribute must be set.

Description — A *Check* Prov command produces this response if the user has not provisioned the *candidateRpAddrAssignment* attribute.

ATTRIBUTE invalidType

Description — This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values — Decimal (1..65535)

RESPONSE Error: The address attribute must be linked to a LogicalIf under Vr instance ... .

Description — A *Check* Prov command produces this response when an attempt is made to link the *address* attribute to a LogicalIf under different Vr instance.

ATTRIBUTE vrInstance

Description — This attribute indicates the Vr instance.

Values — String (1..8, ASCII)

RESPONSE Error: The address attribute must be linked to the LogicalIf under Vr instance ... .

Description — A *Check* Prov command produces this response when an attempt is made to link the *address* attribute to a LogicalIf under different Vr instance.

ATTRIBUTE vrInstance

Description — This attribute indicates the Vr instance.

Values — String (1..8, ASCII)

RESPONSE Error: There is no Domain component of instance ... provisioned under PimSm.

Description — A *Check* Prov command produces this response when an attempt is made to change the mcastDomain attribute under IpPort without provisioning a Domain component of the same instance under *PimSm*.

ATTRIBUTE domainInstance

Description — This attribute indicates the domain instance.

Values — Decimal (0..3)

RESPONSE Error: The specified mask ... is not a valid contiguous mask.

Description — A *Check* Prov command produces this response when an attempt is made to provision a Group component with an invalid (discontiguous) mask.

ATTRIBUTE invalidMask

Description — This attribute contains the index value of the invalid mask.

Values — IP address

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RESPONSE Error: The combination of address ... and mask ... is invalid because there are non-zero bits in the address which lie outside the mask.

Description — A *Check* Prov command produces this response when an attempt is made to provision a Group component with non-zero bits in the IP Address which lie outside the corresponding mask.

ATTRIBUTE invalidAddress

Description — This attribute contains the index value of the invalid IP address.

Values — IP address

ATTRIBUTE invalidMask

Description — This attribute contains the index value of the invalid mask

Values — IP address

RESPONSE Error: The combination of Group Address ... and Mask... for this component is not valid. The trailing zerosin the GroupAddress should match those for the Mask.

Description — A *Check* Prov command produces this response when a Group component is added with an invalid GroupAddress and Mask pair. The “anded’ value of the Group Address and Mask pair should be the same as the Group Address.

ATTRIBUTE invalidAddrInPair

Description — This attribute contains the value of the invalid group addr.

Values — IP address

ATTRIBUTE invalidMaskInPair

Description — This attribute contains the value of the invalid mask.

Values — IP address

RESPONSE The following LPs will be reset when the shelf switches over to the new software, because mate cards are unavailable: ....The software migration will be paused. The migration can be stopped by issuing the Stop Prov command.

Description — The *Activate Prov* command generates this message during a Hitless Software Migration when issued without the *-noPause* option and when the list of LPs participating in the Hitless Software Migration is changed before the migration shelf is ready. Such a change occurs when the configured mate card of an LP becomes unavailable during migration. The response indicates that the software migration will be paused. The operator can stop the migration at this point by issuing the *Stop Prov* command.

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ATTRIBUTE pcsLp

Description	This attribute lists the LPs that were participating in the Hitless Software Migration in the beginning, but they are no longer participating, because their configured mate cards are unavailable.
List of	The name of the component
List Size	8

RESPONSE Error: ... in the linkToMulStaticGp list of the LogicalIf under the IpPort must belong to the same domain as provisioned under the mcastDomain attribute of the IpPort component.

Description	his error message appears when a static route linked to the Logical If belongs to a domain other than that provisioned under the mcastDomain attribute of the IpPort.

ATTRIBUTE mulStaticRouteEntry

Description	This attribute contains the name of the *Mcast Static RouteEntry* component.
Values	The name of the component

RESPONSE Warning:IP multicast traffic will not be forwarded to any protocol port on Lp(s) with the following Lpt(s), since the feature ipMcast is not provisioned in the featureList of those Lpt(s):

Description	This response is produced by the *Check Prov* command if the user has not provisioned the ***ipMcast*** feature on any FP when the multicast component is provisioned.

ATTRIBUTE component

Description	The list of *Lpt* which does not have the feature ***ipMcast*** provisioned on it.
List of	The name of the component

RESPONSE This Ep is disabled due to transport priority overlap, pinging its associated Ep ... instead.

Description	This response indicates that a ping query packet could not be sent to the remote *Ep* because the *Ep* has been disabled due to Transport Priority overlap. **System action**: The associated Ep is pinged instead. **Operation action**: Non - wait for reply from ping.

ATTRIBUTE ComponentName

Description	This attribute indicates the component name of the associated *Ep.*
Values	String (0..46, ASCII)

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RESPONSE When the shelf switches over to the new software load, ... will experience a service outage due to provisioning reasons.

Description	The *Activate Prov* command generates this message on the service active shelf at the beginning of a hitless software migration to provide a list of Logical Processors that will be reset for provisioning reasons. The response to indicate that the software migration can be stopped at this point would follow later.

ATTRIBUTE pcsLpProv

Description	This attribute lists the LPs that are not participating in the Hitless Software Migration for configuration reasons. This includes LPs that are provisioned without a spare card and LPs in 1forN configuration.
List of	The name of the component
List Size	16

RESPONSE When the shelf switches over to the new software load, ... will experience a service outage due to operational reasons.

Description	The *Activate Prov* command generates this message on the service active shelf at the beginning of a hitless software migration to provide a list of Logical Processors that will be reset for operational reasons. This message is generated only if the list of LPs is not empty. At this point the operator can stop the migration.

ATTRIBUTE pcsLpOper

Description	This attribute lists the LPs that are not participating in the Hitless Software Migration for operational reasons. This includes LPs that have cards with standby services unavailable.
List of	The name of the component
List Size	16

RESPONSE Error:The number of instances of the AtmTConn component must not exceed ... on a ... card.

Description	A *Check Prov* command produces this response if the user tries to provision more than the maximum number of *AtmTrunkConnection* components under a *Vgs*. The limit is ***1022***. **System action:** No *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors. **Operator action:** Ensure that the number of instances of the *AtmTConn* component under a specific *Vgs* does not exceed the maximum.

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ATTRIBUTE vgsMaxNumberOfAtmTConns

Description	This attribute indicates the maximum allowed number of *AtmTConns* components
Values	1022

ATTRIBUTE vgsCardType

Description	This attribute indicates the card type being used.
Values	Vsp2 2pGeMmSrVsp3 2pOC3ChSmIrVsp3 Vsp2W 2pVS 2pOC3ChSmIrVsp4e

RESPONSE Error: The IpPort subcomponent of ... must have only a single logical interface.

Description	A *Check Prov* command generates this response if more than one *LogicalInterface*, and therefore more than one subnet, is provisioned under the *IpPort*.

ATTRIBUTE protocolPortName

Description	This attribute indicates the component name of the linked *ProtocolPort*.
Values	The name of the component

RESPONSE Error: The following are not on the same subnet as the linked ProtocolPort. (At most 20 components are shown.)

Description	A *Check Prov* command generates this response if one or more linked components are on a different subnet than the *ProtocolPort* to which the *FrIpServer* is linked. Each *FrIpServer* supports only a single subnet. This error could be caused by an incorrect *ipAddress* attribute under the linked *BnxProtocol* or by an incorrect subnet specification (*LogicalInterface* subcomponent) for the *IpPort* subcomponet of the linked *ProtocolPort*.

ATTRIBUTE illegalFri

Description	This attribute contains a list of the offending Frame Relay interfaces.
List of	The name of the component
List Size	20

RESPONSE Error: The following are not located on the same LogicalProcessor as the FrIpServer. (At most 20 applications are shown)

Description	A *Check Prov* command generates this response if one or more of the linked Frame Relay interfaces are on a different *LogicalProcessor* than the *FrIpServer*.

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ATTRIBUTE illegalFriWrongLP

Description	This attribute contains a list of the offending Frame Relay interfaces.
List of	The name of the component

RESPONSE

Description	This real-time statistics event contains the attributes for the PCS performance measurement (real-time statistics) record.

ATTRIBUTE cpuUtilAvg

Description	This attribute indicates an average processor utilization level over the specified collection interval. The CPU utilization is averaged over a set of one-minute integration intervals.
Values	Decimal (0..100)
Units	%

ATTRIBUTE localMemUsageAvg

Description	This attribute indicates the average percentage of PEV local message blocks in use over the PM time interval
Values	Decimal (0..100)
Units	%

RESPONSE

Description	This collected performance measuring component describes the attributes contained in an ATM RtStats record. These measurements are generated by the ATM interface.

ATTRIBUTE linkCapacity

Description	This attribute indicates the physical capacity of this ATM interface.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE rxTotalCell

Description	This attribute indicates the number of cells with CLP=0+1 received during the collection interval.
Values	Long Integer

ATTRIBUTE txTotalCell

Description	This attribute indicates the number of cells with CLP=0+1 transmitted during the collection interval.
Values	Long Integer

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ATTRIBUTE txCellDiscards

Description — This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval.

Values — Long Integer

ATTRIBUTE rxCellDiscards

Description — This attribute indicates the number of cells CLP=0+1 which are discarded after being received during the collection interval.

Values — Long Integer

ATTRIBUTE txCbrDiscards

Description — This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval by ATM CBR service category.

Values — Long Integer

ATTRIBUTE txRtVbrDiscards

Description — This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval by ATM RtVBR service category.

Values — Long Integer

ATTRIBUTE txNrtVbrDiscards

Description — This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval by ATM NrtVBR service category.

Values — Long Integer

ATTRIBUTE txUbrDiscards

Description — This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval by ATM UBR service category.

Values — Long Integer

ATTRIBUTE remoteAtmIfLabel

Description — This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel* attribute.

Values — String (0..60, ASCII)

ATTRIBUTE rxCbrTotalCell

Description — This attribute indicates the total number of ATM cells in the CBR service category, with CLP=0+1, received by the ATM interface during the collection interval.

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Values Long Integer

ATTRIBUTE rxRtVbrTotalCell

Description This attribute indicates the total number of ATM cells in the RtVBR service category, with CLP=0+1, received by the ATM interface during the collection interval.

Values Long Integer

ATTRIBUTE rxNrtVbrTotalCell

Description This attribute indicates the total number of ATM cells in the NrtVBR service category, with CLP=0+1, received by the ATM interface during the collection interval.

Values Long Integer

ATTRIBUTE rxUbrTotalCell

Description This attribute indicates the total number of ATM cells in the UBR service category, with CLP=0+1, received by the ATM interface during the collection interval.

Values Long Integer

ATTRIBUTE txCbrTotalCell

Description This attribute indicates the total number of ATM cells in the CBR service category, with CLP=0+1, transmitted by the ATM interface during the collection interval. This total includes conforming cells and cells that violated their traffic contract at all points in the network.

Values Long Integer

ATTRIBUTE txRtVbrTotalCell

Description This attribute indicates the total number of ATM cells in the RtVBR service category, with CLP=0+1, transmitted by the ATM interface during the collection interval. This total includes conforming cells and cells that violated their traffic contract at all points in the network.

Values Long Integer

ATTRIBUTE txNrtVbrTotalCell

Description This attribute indicates the total number of ATM cells in the NrtVBR service category, with CLP=0+1, transmitted by the ATM interface during the collection interval. This total includes conforming cells and cells that violated their traffic contract at all points in the network.

Values Long Integer

ATTRIBUTE txUbrTotalCell

Description This attribute indicates the total number of ATM cells in the UBR service category, with CLP=0+1, transmitted by the ATM interface during the

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collection interval. This total includes conforming cells and cells that violated their traffic contract at all points in the network.

Values — Long Integer

RESPONSE Continue Prov failed due to a pausable event, pause reason: ...Use -force option to continue the migration. To abort migration type Stop Prov.

Description — The *Continue Prov* command generates this error message when the Hitless Software Migration is paused and there are pausable events.
The *Continue Prov* command will succeed only if the pausable events are all cleared.
The operator can decide to force the migration switchover to resume by typing *Continue -force Prov* or to abort the software migration by typing *Stop Prov*.
The migration will pause as long as no action is taken by the operator.

ATTRIBUTE pcsString

Description — This attribute indicates the reason why the *Continue Prov* command failed. The failure is caused by some pausable events that have occurred. These events include pausable alarms, software alarms generated on the migration shelf, applications nacking the provisioning data, and applications not ready for switchover.

Values — String (0..968, ASCII)

RESPONSE Error:The interfaceName attribute must be provisioned to link to an instance of ... component local to this card.

Description — A *Check Prov* command produces this response if the *interfaceName* attribute on components existing under this *Vgs* component has not been set to link to a *Chan, DS1 or E1* component on this card.
The following Components support this response:

Tag: *interfaceName* must link to a local *Chan* Component.
Q921: *interfaceName* must link to a local *Chan* Component.
LapV5: *interfaceName* must link to a local *Chan* Component.
V5Link: *interfaceName* must link to a local *DS1* or *E1* Component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Set the *interfaceName* attribute to link to an instance of the suggested component on this card.

ATTRIBUTE interfaceNameLinkedComponent

Description — The name of the component to link to.

Values — String (0..15, ASCII)

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RESPONSE Error:The ... attribute must be provisioned to link to an instance of the ... component under this Vgs.

Description

A *Check Prov* command produces this response if the specified attribute has not been set to an instance of the specified component type existing under this *Vgs* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Set the specified attribute to link to an instance of the specified component type existing under this *Vgs* component.

ATTRIBUTE profileLinkAttribute

Description

The name of the attribute to link.

Values

profile
casDefinition

ATTRIBUTE profileLinkComponent

Description

The name of the component to link to.

Values

TdmNetworkProfile
Q921Profile
CasDefn

RESPONSE Error:Each DS1 or E1 component cannot have more than one Chan subcomponent associated with an instance of the ... component.

Description

A *Check Prov* command produces this response if a *DS1* or *E1* componenent has more that one *Chan* subcomponents linked to the specified component type.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that each *DS1* or *E1* componenent has no more than one *Chan* subcomponents linked to the specified component type.

ATTRIBUTE maxCompLinkedComponent

Description

The name of the linked component.

Values

Tag
Q921

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RESPONSE Error:The lineType attribute of the ... component provisioned in the interfaceName attribute must take one of the following values:...

Description

A *Check Prov* command produces this response if the *linetype* attribute of the indicated component is of the incorrect type.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Change the *lineType* attribute of the indicated component to one of the recommended values.

ATTRIBUTE priComponentName

Description

This attribute indicates the component for which this check fails.

Values

The name of the component

ATTRIBUTE priLineType

Description

This attribute indicates the allowed values for the *lineType* attribute.

List of

d4
esf
ccs
cas
d4Cas
esfCas

List Size

6

RESPONSE Error:The ... component may only have one of the following signaling type subcomponents provisioned:....

Description

A *Check Prov* command produces this response if the user tries to provision multiple signaling type subcomponents under the same parent component.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the parent component has only one signaling type subcomponent provisioned.

ATTRIBUTE parentComponent

Description

This attribute indicates the name of the parent component.

Values

Brag
BragS

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ATTRIBUTE vgsSignalingSubcomponent

Description	This attribute lists all the signaling type subcomponents currently provisioned under the parent component.
List of	Q921 V5Link Cas
List Size	3

RESPONSE Error:The ... component specified in the interfaceName attribute must have a Tc subcomponent.

Description	A *Check Prov* command produces this response if the indicated component specified in the *interfaceName* attribute does not have a *Tc* subcomponent. **System action**: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors. **Operator action**: Ensure the indicated component has a *Tc* subcomponent.

ATTRIBUTE chanComponentName

Description	This attribute indicates the component for which this check fails.
Values	The name of the component

RESPONSE Error: The address ... is not a valid IP network address prefix.

Description	A *Check Prov* command produces this response when the address prefix defined by the *Network* component is not a valid IP network address prefix. Examples include all 0's (***0.0.0.0***) or all 1's (***255.255.255.255***). **System action**: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors. **Operator Action**: Provision the *prefix* and *length* attributes of the specified *Network* component to be a valid non-reserved address prefix.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of the invalid address prefix.
Values	IP address

RESPONSE node id = ...node name@level = ...port id = ...interface name = ...

Description	This response contains the information for one hop in a computed route returned as the result of issuing the *Run* command on the *RouteFinder* component.

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ATTRIBUTE nodeId

Description — This attribute specifies the node ID of a logical node at the near end of the hop.

Values — String (22, Hex)

ATTRIBUTE nodeName

Description — This attribute specifies the node name of a logical node at the near end of the hop. This attribute is NULL, if the node name is not provisioned under the *ModuleData* component.

Values — String (0..19, ASCII)

ATTRIBUTE portId

Description — This attribute indicates the port ID of the PNNI interface leaving the node identified by the *nodeId* attribute.

Values — Decimal (0..4294967295)

ATTRIBUTE interfaceName

Description — This attribute indicates the name of the PNNI interface attached to the node identified by the *nodeId* attribute.

This attribute's value can take one of the following forms:
(a) ***AtmIf/<1-4095>*** - If the interface is an ATM interface.
(b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the interface is a VPT interface.
(c) Values ***<0-4294967295>*** - If the link is a logical link.

This attribute is left blank for a node that is not a Nortel Networks Multiservice Switch.

Values — String (0..19, ASCII)

RESPONSE node id = ...node name@level = ...

Description — This response contains the information for one hop with an unknown port ID in a computed route returned as the result of issuing the *Run* command on the *RouteFinder* component.

ATTRIBUTE nodeId

Description — This attribute specifies the node ID of a logical node at the near end of the hop.

Values — String (22, Hex)

ATTRIBUTE nodeName

Description — This attribute specifies the node name of a logical node at the near end of the hop. This attribute is NULL, if the node name is not provisioned under the *ModuleData* component.

Values — String (0..19, ASCII)

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RESPONSE Error:The total number of ... components must not exceed ... on a ... card.

Description

A *Check Prov* command produces this response if the user tries to provision more than the maximum allowed number of *Q921*, *LapV5* or *Cas* components in the same *Vgs hierarchy*.

A maximum of 40 *Q921* or *LapV5* component instances is allowed on a ***Vsp2*** or ***12mVspAal*** card.

A maximum of 84 *Q921* or *Cas* component instances is allowed on a ***2pGeMmSrVsp3*** card.

A maximum of 64 *LapV5* component instances is allowed on a ***2pGeMmSrVsp3*** card.

A maximum of 84 *Q921* component instances is allowed on a ***2pOC3ChSmIrVsp3*** card.

A maximum of 84 *Q921* component instances is allowed on a ***2pVS*** card.

A maximum of 168 *Q921* or *Cas* component instances is allowed on a ***2pOC3ChSmIrVsp4e*** card.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the number of *Q921, LapV5* and *Cas* component instances under a given *Vgs* component is appropriate for the card being used.

ATTRIBUTE vgsNumberOfSignalingComponents

Description

This attribute indicates the maximum allowed number of signaling components.

Values

40
64
84
168

ATTRIBUTE vgsCardType

Description

This attribute indicates the card type being used.

Values

12mVspAal
Vsp2
2pGeMmSrVsp3
2pOC3ChSmIrVsp3
Vsp2W
2pVS
2pOC3ChSmIrVsp4e

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ATTRIBUTE vgsSignalingComponent

Description	This attribute lists the names of the inappropriately provisioned signaling components.
List of	Q921 LapV5 Cas
List Size	3

RESPONSE Invalid Instance

Description	The *Add* command generates this response when the component instance has invalid characters. All printable ascii characters are valid except '<' '>' '/' ':' '*' '"' and whitespaces. **System action:** The *Add* command fails. **Operator action:** Update the software on the MDM. The *Help* command can be used to list the appropriate instance values.

ATTRIBUTE value

Description	The attribute indicates the value of a Fed as an ascii string for error details.
Values	String (0..255, ASCII)

RESPONSE Error:The noServiceResponse attribute must be set to noResponse when the lineType of the primary rate port is ....

Description	A *Check Prov* command produces this response if the *noServiceResponse* attribute is set to anything other than ***noResponse***, and the *lineType* of the primary rate port is set to ***cas***, ***d4Cas***, or ***esfCas***. This applies to the following card types: ***2pDS3cAal***, ***32pE1Aal***, ***2pOC3ChSmIrVsp3*** and *2pVS*. System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors. Operator action: Set the value of the *noServiceResponse* attribute (under the *Tc* component) to ***noResponse***.

ATTRIBUTE priLineType

Description	This attribute indicates the current value of the primary rate port's *lineType* attribute.
Values	cas d4Cas esfCas

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RESPONSE Error:The total number of Isis components provisioned (...) exceeds the allowable maximum of ... instance(s).

Description — The *Check Prov* command produces this response when the maximum supported number of *Isis* components is exceeded.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Delete sufficient *Isis* subcomponents until the provisioned number is within the specified allowable limits.

ATTRIBUTE inwIpIsisIsisCount

Description — This attribute indicates the number of provisioned *Isis* components.

Values — Decimal (0..65535)

ATTRIBUTE inwIpIsisCountLimit

Description — This attribute indicates the maximum number of *Isis* components.

Values — Decimal (1..65535)

RESPONSE Error:The total number of Net components provisioned (...) exceeds the allowable maximum of ... instances per Isis component.

Description — The *Check Prov* command produces this response when the maximum supported number of *Net* components per *Isis* instance is exceeded.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Delete sufficient *Net* subcomponents until the provisioned number is within the specified allowable limits.

ATTRIBUTE inwIpIsisNetCount

Description — This attribute indicates the number of provisioned *Net* components found for this *Isis* instance.

Values — Decimal (0..65535)

ATTRIBUTE inwIpIsisNetCountLimit

Description — This attribute indicates the maximum number of *Net* subcomponents per *Isis* instance.

Values — Decimal (1..65535)

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RESPONSE Error:The total number of IsisIf components provisioned (...) exceeds the allowable maximum of ... instances per ProtocolPort component.

Description — The *Check Prov* command produces this response when too many *IsisIf* components are provisioned under the same *ProtocolPort* component.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Delete *IsisIf* component instances until the number provisioned, under the same *ProtocolPort* component, equals or is less than the specified limit.

ATTRIBUTE inwIpIsisIfInstanceCount

Description — This attribute indicates the number of provisioned *IsisIf* components found under the associated *ProtocolPort*.

Values — Decimal (0..65535)

ATTRIBUTE inwIpIsisIfInstanceCountLimit

Description — This attribute indicates the maximum number of *IsisIf* subcomponents per *ProtocolPort* instance.

Values — Decimal (1..65535)

RESPONSE The ... component has more than one settable link attribute. The -attribute option is required.

Description — The *find* command generates this response when the component specified by the *-freelinks* option has more than one link attribute. The user must specify one of the attributes via the *-attribute* option.

System action: The *Find* command is not executed
Operator action: Reissue the command with the *-attribute* option

ATTRIBUTE component

Description — This attribute contains the name of the component that was specified in the command.

Values — The name of the component

RESPONSE The attribute ... is not a settable link.

Description — This error response is generated when the operator specifies a non-settable link attribute for the -attribute option of the *Find* command.

System action: The *Find* command is not executed
Operator action: None

ATTRIBUTE attribute

Description — This attribute identifies the invalid attribute.

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Values String (0..255, ASCII)

RESPONSE The specified attribute is ambiguous with ....

Description The *Find* command generates this error response if the attribute specified in the *-attribute* option is ambiguous for the given component class.

System action: The *Find* command is not executed
Operator action:Reenter the command, supplying an appropriate attribute name

ATTRIBUTE listOfAmbiguities

Description This attribute contains the list of attributes that are ambiguous matches with the specified attribute.

Values String (0..255, ASCII)

RESPONSE The ... component has no settable link attributes.

Description The *Find* command generates this response when the component specified in the -freelinks option has no link attributes which can be set.

System action: The *Find* command is not executed
Operator action: None

ATTRIBUTE component

Description This attribute contains the name of the component which was specified in the command.

Values The name of the component

RESPONSE Warning:When calls are in progress, changing the ... attribute may result in some loss of traffic.

Description A *Check Prov* command produces this response if the user changes the value of the *lossIntegrationPeriod* or *egressGain* attribute.

The following components support this response:
Brag
BragS
PktProf

System action: None.

Operator action: If calls are present, ensure that traffic disruption is acceptable before activating the provisioning.

ATTRIBUTE vgsPossibleTrafficLossAttribute

Description The name of the attribute.

Values lossIntegrationPeriod
egressGain

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RESPONSE Error:The ... attribute must not be provisioned with an empty value.

Description

A *Check Prov* command produces this response if the user tries to provision the specified attribute with an empty value.

The following components support this response:
CasDefn and *LocalAnnouncements. fileName* attribute may not have an empty value.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operation action: Provision the specified attribute with a non-empty value.

ATTRIBUTE vgsEmptyAttributeName

Description

The name of the attribute.

Values

Decimal (0..65535)

RESPONSE Error:The value provisioned for the ... attribute must only consist of the following characters:....

Description

A *Set* command produces this response if the user tries to provision a specified attribute with a value that does not consist entirely of the allowed characters.

The following components support this response:
CasDefn and *LocalAnnouncements*: *fileName* attribute may only contain the following characters: [a..z, A..Z, 0..9, ., _].
LocalAnnouncements and *AnnouncementLanguage*: *defaultLanguage* attribute may only contain the following characters: [a..z].

System action: The *Set* command is rejected.

Operation action: Set the specified attribute to a value that only consists of the allowed characters.

ATTRIBUTE vgsAttributeContainingChars

Description

The name of the attribute which has failed the check.

Values

Decimal (0..65535)

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ATTRIBUTE vgsCharsAllowed

Description	The list of the allowed characters.
List of	a..z A..Z 0..9 . _
List Size	4

RESPONSE Error:Standby Lsp ... must be provisioned with RsvpQ subcomponent when its primary Lsp sets serviceCategory attribute value to be diffServDomainElsp.

Description

The *Check Prov* command produces this response when a standby LSP having no *RsvpQos* subcomponent is added to the list of LSPs specified in the *StandbyLsp* attribute of a primary LSP whose value of *sc* attribute in *Msc* set to *diffServDomainElsp*.

System Action: The *Check Prov* fails.

Operator Action: Provision a *RsvpQos* subcomponent under the standby *Lsp* component.

ATTRIBUTE mplsMscDiffServStandbyLspError

Description	This attribute indicates the component name of the Lsp to be used in the response.
Values	The name of the component

RESPONSE Error:The netMask provisioned in ... forces the ipAddress value to be a broadcast address.

Description

A *Check Prov* command generates this response if the IP address provisioned in the parent component is a broadcast address.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the IP address of the parent component is not set to a broadcast address within the subnet.

ATTRIBUTE vrapBcIpAddrLogIf

Description	This attribute contains the name of the *Vr/n Pp/n Ip LogicalIf/n.n.n.n* component in which the *netMask* is provisioned.
Values	The name of the component

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RESPONSE Error:..., as specified by the subnetAccessName attribute, must have a CustSpec subcomponent.

Description

A *Check Prov* command generates this response if the *Vr/n* component specified by the *subnetAccessName* attribute does not have a *CustSpec* subcomponent provisioned.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision a *CustSpec* component under the specified *Vr/n* component instance.

ATTRIBUTE vrapCustSpecVr

Description

This attribute contains the name of the *Vr/n* component for which this check fails.

Values

The name of the component

RESPONSE Error:The featureList attribute of ... must contain ip when a VrAp component is used within this Vgs hierarchy.

Description

A *Check Prov* command generates this response if a user provisions a *VrAp* component on an *Lp* which has not been provisioned to support the ***ip*** feature.

System action: The *Check Prov* command fails. No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that ***ip*** is provisioned in the *featureList* of the *Sw Lpt* referenced from this *Vgs* hierarchy, or replace the *VrAp* with another access point type.

ATTRIBUTE vrapSwLpt

Description

This attribute contains the name of the *Sw Lpt* component.

Values

The name of the component

RESPONSE Warning:The Bgp component provisioned under ... is not supported because at least one other instance of a Vr with a CustSpec component exists. There is also an instance of a Vr with a Vr Pp linked to a 4pGe card.

Description

A *Check Prov* command generates this response if the *Vr Ip Bgp* component is provisioned on a node that has one other instance of *Vr* with *CustSpec* component. In addition, there is an instance of a *Vr Pp* linked to a **4pGe** card.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

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ATTRIBUTE invalidCustSpecVrWithBgp

Description — This attribute indicates the name of the *VirtualRouter* component instance to which the *Bgp* component is added.

Values — The name of the component

RESPONSE Error: The ... attribute must be set.

Description — This response is produced by the *Check Prov* command if the user has not provisioned the *linkToEnetIf* attribute.

System action: The *Check Prov* command is failed.

Operator action: The remedial action is to *set* the *linkToEnetIf* attribute to a *La* component

ATTRIBUTE unprovisionedAttribute

Description — This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values — Decimal (1..65535)

RESPONSE Error:One of the following two PerHopBehaviorMap subcomponent instances must be removed:

Description — A *Check Prov* command produces this response if produces this response if two *PerHopBehaviorMap* subcomponents instance values are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the two conflicting *PerHopBehaviorMap* components.

ATTRIBUTE phb1

Description — This attribute specifies the first of two conflicting *PerHopBehaviorMap* components.

Values — The name of the component

ATTRIBUTE phb2

Description — This attribute specifies the second of two conflicting *PerHopBehaviorMap* components.

Values — The name of the component

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RESPONSE Error:The following two attributes must reference DifferentiatedServicesDomain PerHopBehavior component instances that are assigned equal TrafficClass values.

Description

A *Check Prov* command produces this response if for any of the following pairs of attributes:
ubrClp0ToPhb, *ubrClp1ToPhb*
nrtVbrClp0ToPhb, *nrtVbrClp1ToPhb*
rtVbrClp0ToPhb, *rtVbrClp1ToPhb*
cbrClp0ToPhb, *cbrClp1ToPhb*
if the *TrafficClass* component assigned to the *PerHopBehavior* component instance that matches the first attribute value is not equal to the *TrafficClass* component assigned to the *PerHopBehavior* component instance that matches the second attribute value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Set the conflicting attributes to *PerHopBehavior* component instance values that satisfy the *TrafficClass* constraint.

ATTRIBUTE clp0

Description

This specifies the first of the two conflicting attributes.

Values

String (0..16, ASCII)

ATTRIBUTE clp1

Description

This specifies the second of the two conflicting attributes.

Values

String (0..16, ASCII)

RESPONSE Error:The following two attributes must reference DifferentiatedServicesDomain PerHopBehavior component instances that are assigned drop precedence values such that the drop precedence for Clp0 is not higher than that for Clp1.

Description

A *Check Prov* command produces this response if for any of the following pairs of attributes:
ubrClp0ToPhb, *ubrClp1ToPhb*
nrtVbrClp0ToPhb, *nrtVbrClp1ToPhb*
rtVbrClp0ToPhb, *rtVbrClp1ToPhb*
cbrClp0ToPhb, *cbrClp1ToPhb*
if the *dropPrecedence* assigned to the *PerHopBehavior* component instance that matches the first attribute value is higher than the *dropPrecedence* assigned to the *PerHopBehavior* component instance that matches the second attribute value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Set the conflicting attributes to *PerHopBehavior* component instance values that satisfy the *dropPrecedence* constraint.

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ATTRIBUTE clp0

Description — This specifies the first of the two conflicting attributes.

Values — String (0..16, ASCII)

ATTRIBUTE clp1

Description — This specifies the second of the two conflicting attributes.

Values — String (0..16, ASCII)

RESPONSE Error:The media ... is not supported for Interface under Vrf.

Description — A *Check Prov* command produces this response if the *Interface* is a subcomponent of a *Vrf* and an invalid media type is added as a subcomponent of the *Interface.*

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove the invalid media provisioned under the *Interface* subcomponent.

ATTRIBUTE invalidMedia

Description — Indicates the invalid media.

Values — String (1..20, ASCII)

RESPONSE Error:The media ... is not supported for Interface under Rtr.

Description — A *Check Prov* command produces this response if the *Interface* is a subcomponent of a *Router* and an invalid media type is added as a subcomponent of the *Interface.*

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove the invalid media provisioned under the *Interface* subcomponent.

ATTRIBUTE invalidMedia

Description — Indicates the invalid media.

Values — String (1..20, ASCII)

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RESPONSE Error:The total number of MplsCon components has exceeded the allowable limit of ... per shelf.

Description

The *Check Prov* command generates this response when the number of *MplsCon* components provisioned exceeds a preset number.

System Action: The *Check Prov* command fails.

Operator Action: Reduce the number of *MplsCon* components provisioned.

ATTRIBUTE atmMplsConTooManyMplsConsErr

Description

This attribute indicates the maximum number of *MplsCon* components that can be provisioned on a switch. This value is a constant, set within the software.

Values

Decimal (0..2048)

RESPONSE Error:The ... attribute must take a value within the range -12 to 12 dB.

Description

A *Check Prov* command produces this response if the specified attribute has been provisioned to take a value outside the range -12 to 12 dB and the *featureList* attribute (under the *Lpt* component) is set to ***vgsAtm*** or ***vgsIp***.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value provisioned for the specified attribute lies within the range -12 to 12 dB.

ATTRIBUTE vgsTdmNetworkProfileRange

Description

The name of the attribute requiring modification.

Values

ingressGain
egressGain

RESPONSE Error:The echoCancelTailLength attribute must be set to ....

Description

A *Check Prov* command produces this response if the *echoCancellationTailLength* attribute has been set to a value other than that specified in the response.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *echoCancellationTailLength* attribute is set to the recommended value.

ATTRIBUTE vgsTdmNetworkProfileEcanTail

Description

The value to set the *echoCancellationTailLength* attribute to.

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Values	64 128

RESPONSE Error:The moduleType attribute must take one of the following values:...

Description	A *Check Prov* command produces this response if the *moduleType* attribute is not assigned a recommended value. **System action**: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors. **Operator action**: Change the *moduleType* attribute to one of the recommended values.

ATTRIBUTE vspPModModuleType

Description	This attribute indicates the allowed values for the *moduleType* attribute.
List of	none vpm spm
List Size	2

RESPONSE Error:The NextHop Address ... can not be equal to any Interface address if it belongs to any subnets provisioned under a Vrf.

Description	This error message appears when the value of *NextHop* provisioned for a static *RouteEntry* belongs to one of the subnets provisioned under a Vrf; however, the *NextHop* address is equal to the index value of some *Interface* component. **System Action**: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors. **Operator Action**: Change the *NextHop* address not equal to the index value of any *Interface* component.

ATTRIBUTE invalidNextHopAddress

Description	This attribute contains the value of an invalid *NextHop* address.
Values	IP address

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RESPONSE Error: The NextHop Address ... does not belong to any of the subnets provisioned under the Rtr.

Description — This error message appears when the value of a *NextHop* provisioned for a static *RouteEntry* does not belong to one of the subnets provisioned under the *Rtr*. Each provisioned *NextHop* should belong to a valid subnet.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Add an *Interface* entry under *Rtr* component or change the *NextHop* address to reflect to one of the subnets provisioned by *Interface* entry.

ATTRIBUTE invalidNextHopAddress

Description — This attribute contains the value of invalid *NextHop* address.

Values — IP address

RESPONSE Error:The NextHop Address ... can not be equal to any Interface address if it belongs to any subnets provisioned under a Rtr.

Description — This error message appears when the value of *NextHop* provisioned for a static *RouteEntry* belongs to one of the subnets provisioned under a *Rtr*; however, the *NextHop* address is equal to the index value of some *Interface* component.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Change the *Nexthop* address not equal to the index value of any *Interface* component.

ATTRIBUTE invalidNextHopAddress

Description — This attribute contains the value of an invalid *NextHop* address.

Values — IP address

RESPONSE Error: The NextHop Address ... does not belong to any of the subnets provisioned under a Vrf.

Description — This error message appears when the value of a *NextHop* provisioned for a static *RouteEntry* does not belong to one of the subnets provisioned under a *Vrf*. Each provisioned *NextHop* should belong to a valid subnet.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Add an *Interface* entry under *Vrf* component or change the *NextHop* address to reflect to one of the subnets provisioned by *Interface* entry.

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ATTRIBUTE invalidNextHopAddress

Description — This attribute contains the value of invalid *NextHop* address.

Values — IP address

RESPONSE Error:Exceeded maximum number of Vrf components per Rtr.

Description — The *Check Prov* command produces this response when the maximum number of allowable *Vrfs* per *Rtr* has been exceeded.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Delete *Vrf* components which are in excess of the maximum allowed.

ATTRIBUTE maxAllowedVrfs

Description — The maximum number of provisionable *Vrf* omponents.

Values — Decimal (0..65535)

ATTRIBUTE currentProvisionedVrfs

Description — The current number of provisioned *Vrf* components.

Values — Decimal (0..65535)

RESPONSE Error:The total number of IsisIf components provisioned (...) exceeds the allowable maximum of ... instances.

Description — The *Check Prov* command produces this response when the maximum supported number of *IsisIf* components is exceeded.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Delete sufficient *IsisIf* components until the provisioned number is within the specified allowable limits.

ATTRIBUTE inwIpIsisIsisIfCount

Description — This attribute indicates the number of *IsisIf* components.

Values — Decimal (0..65535)

ATTRIBUTE inwIpIsisIsisIfCountLimit

Description — This attribute indicates the maximum number of *IsisIf* components.

Values — Decimal (1..65535)

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RESPONSE Error:The packetDelayVariationTolerance attribute can not be set to adaptive on a ... card.

Description

A *Check Prov* command produces this response if the user sets the *packetDelayVariationTolerance* attribute to ***adaptive*** on one of the following cards:

12mVspAal,
Vsp2,
Vsp2W.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *packetDelayVariationTolerance* attribute is set to a value other than ***adaptive***.

ATTRIBUTE vgsCardType

Description

This attribute indicates the card type being used.

Values

12mVspAal
Vsp2
Vsp2W

RESPONSE Error: The specified Address ... is not a valid IP interface address.

Description

This error message appears when the specified IP interface address is an address of class A, B or C. but it is not valid for the interface.

ATTRIBUTE invalidAddress

Description

This attribute contains the value of invalid IP address.

Values

IP address

RESPONSE For security reasons, ... files cannot be deleted.

Description

This response is generated when the operator tries to remove files which should not be deleted for security reasons.

ATTRIBUTE secureFileType

Description

This attribute gives the type of file that is being removed.

Values

log
commit

RESPONSE Setting the ... attribute is not allowed for this data type.

Description

This response is issued whenever a user tries to modify an attribute for a particular type of data due to security reasons.

ATTRIBUTE dataType

Description

This attribute identifies the attribute that cannot be modified by a user.

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Values	Decimal (0..4294967295)

RESPONSE For security reasons, ... files cannot be touched.

Description	This response is generated when the operator tries to touch a file which should not be touched for security reasons.

ATTRIBUTE secureFileType

Description	This attribute gives the type of file that is being touched.
Values	log

RESPONSE The following patches are superseded by the released patches listed next to them. These superseded patches need to be replaced with the newer patches in the SW patchList:

Description	This response is issued when there are new released patches that supersede patches already present in the *Sw patchList.* The patches in the *Sw patchList* need to be removed from the patch list and replaced with the patches that supersede them. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfReleasedSuper

Description	This attribute contains the list of released patch pairs. The first patch of the pair is the patch which is to be superseded, the other patch is the one that has superseded the previous patch.
List of	String (1..30, ASCII)

RESPONSE The following patches are released and can be applied, however, the prerequisite patch listed beside each patch is either not eligible for auto-application or is missing from the CP disk:

Description	This response is issued when a prerequisite patch is either missing or ineligible for automatic application, thus preventing the automatic application of the patch in question. The ineligible patch may still be in verification status, or may be in a category that is not eligible for automatic application, or may not be set to Auto-Apply, or may even have conflicting relationships that prohibit the patch from application status. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfReleasedPrereq

Description	This attribute is a list of prerequisite patch pairs that cannot be applied.
List of	String (1..30, ASCII)

RESPONSE The following patches are released and can be added to the Sw patchList:

Description	The *Check Sw AutoPatch* command produces this response when released patches are applicable to the current provisioning and need to be added in the *Sw patchList* attribute.

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ATTRIBUTE listOfReleasedPatches

Description	This attribute contains the list of released patches that can be added to the *Sw patchList*.
List of	String (1..30, ASCII)

RESPONSE The following Reset patches are released and should be added to the Sw patchList:

Description	The response is issued when Reset patches are available in released status. Reset patches are not eligible for automatic application, however, such patches that have been declared released should be strongly considered for manual application. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfReleasedResets

Description	This attribute contains the list of released Reset patches that should be added to the *Sw patchList.*
List of	String (1..30, ASCII)

RESPONSE Mutually exclusive released patches exist. Only one patch from each pair can be added to the provisioned patch list:

Description	The *Check Sw AutoPatch* command produces this response when mutually exclusive released patches exist. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command. **Operator Action:** Select one patch from each pair when updating the *SW patchList* attribute. **System Action**: Command *Check Sw AutoPatch* fails

ATTRIBUTE listOfReleasedMutex

Description	This attribute is a list of mutually exclusive released patch pairs.
List of	String (1..62, ASCII)

RESPONSE The following patches have been declared obsolete, with an emergency removal notice. These patches should be removed from the Sw patchList at the earliest opportunity:

Description	This response is issued when there are obsolete patches present in the *Sw patchList*. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfObePatches_c

Description	This attribute contains the list of Obsolete patches that should be removed from the Sw patchList.
List of	String (1..30, ASCII)

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RESPONSE The following patches are in verification status and may be manually applied if required (please see patch documentation to determine if you require any of these patches):

Description — This response is issued when there are verification patches relevant to the switch which are not in the *Sw patchList.* These patches may be either TAP or Reset. These patches may be required based on the documentation for each patch. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfVerificationPatches

Description — This attribute contains the list of verification patches relevant to the provisioned software configuration.

List of — String (1..30, ASCII)

RESPONSE The following Reset patches have been superseded by the patches listed next to them. It may be advantageous to replace these patches with the superseding ones:

Description — This response is issued when there are Reset patches in the *Sw patchList* that have been superseded. Refer to each patches' documentation to determine if it is advantageous to supersede the referred patch with the superseded one. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfResetSuper

Description — This attribute contains the list of pairs of Reset patches and the patches of which they are superseded.

List of — String (1..30, ASCII)

RESPONSE The following patches have been declared obsolete due to a defect. These patches should be removed from the Sw patchList:

Description — This response is issued when there are obsolete patches present in the *Sw patchList*. Refer to each patches' documentation to determine if it is advantageous to obsolete the referred patch. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfObsPatches

Description — This attribute contains the list of Obsolete patches that should be removed from the *Sw patchList*.

List of — String (1..30, ASCII)

RESPONSE The following released patches have been superseded by the verification patches listed next to them. It may be advantageous to replace these patches with the superseding ones:

Description — This response is issued when there are verification patches that supersede released patches. Refer to each patches' documentation to determine if it is advantageous to supersede the referred patch with the superseded one. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

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ATTRIBUTE listOfVerifSuperReleased

Description — This attribute contains the list of released patches and the verification patches by which they are superseded.

List of — String (1..30, ASCII)

RESPONSE The Sw patchList should contain the following patches:

Description — This response is issued every time the *Check Sw AutoPatch* command is run to summarize for the operator what the *Sw patchList* should contain.

ATTRIBUTE listOfFinalPatches

Description — This attribute contains the list of patches generated from the *Check Sw AutoPatch* command that should be in the *Sw patchList* attribute.

List of — String (1..30, ASCII)

RESPONSE

Description — This group contains the real-time collected statistics of the *Vgs* component.
These statistics are not collected on ***Vsp2*** or ***12mVspAal cards.***

ATTRIBUTE congestedSeconds (congSec)

Description — This attribute counts how many seconds that new media connection requests have been rejected because the Gateway was busy.

Values — Decimal (0..4294967295)

ATTRIBUTE overloadRejectedCommands (olRejCom)

Description — This attribute counts the control protocol commands that were rejected due to input message buffer overload.

Values — Decimal (0..4294967295)

ATTRIBUTE connectionsSetup (connSetup)

Description — This attribute counts the media connections successfully established by this gateway *Vgs* component and acknowledged to the Controller.

The value wraps to ***0*** when the maximum value is exceeded.

Values — Decimal (0..4294967295)

ATTRIBUTE connectionsLostToPacketNwLoss

Description — This attribute counts the connections lost to Gateway detectable network failures. This includes:
- individual connection media integrity time-outs.
-bulk connection loss due to *ATM VCC* failure or release or associated component deprovisioning.
-bulk connection loss due to local IP media link failure or associated component deprovisioning.

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The counter wraps to ***0*** when it exceeds the maximum value.

Values Decimal (0..4294967295)

ATTRIBUTE connectionsLostToTdmPortLoss

Description This attribute counts the connections lost to Gateway detectable TDM unavailability since the last DCS real-time statistics request. This includes deprovisioning of a link with active connections.

The counter wraps to ***0*** when it exceeds the maximum value.

Values Decimal (0..4294967295)

ATTRIBUTE activeConnectionsAvg

Description This attribute indicates the average number of connections since the last request.The values are sampled every 1 second and averaged over the period.

Values Decimal (0..4294967295)

ATTRIBUTE activeConnectionsMax

Description This attribute indicates the maximum number of connections at any point since the last request.

Values Decimal (0..4294967295)

ATTRIBUTE activeConnectionsMin

Description This attribute indicates the minimum number of connections at any point since the last request.

Values Decimal (0..4294967295)

ATTRIBUTE evrcConnectionsSetup

Description This attribute counts the number of EVRC media connections successfully established by this gateway Vgs component.

The counter wraps to ***0*** when it exceeds the maximum value.

Values Decimal (0..4294967295)

ATTRIBUTE evrc0ConnectionsSetup

Description This attribute counts the number of EVRC0 (Header Free EVRC) media connections successfully stablished by this gateway Vgs component.

The counter wraps to ***0*** when it exceeds the maximum value.

Values Decimal (0..4294967295)

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ATTRIBUTE trfoConnectionsSetup

Description — This attribute counts the number of TrFO connections successfully established by this gateway Vgs component.

The counter wraps to ***0*** when it exceeds the maximum value.

Values — Decimal (0..4294967295)

ATTRIBUTE connectionsLostToTrfoFailure

Description — This attribute counts the number of connections lost due to TrFO failure since component creation.

The counter wraps to ***0*** when it exceeds the maximum value.

Values — Decimal (0..4294967295)

RESPONSE No name

Description — This group contains the collected statistics of the *DigitCollection* component.

ATTRIBUTE rejectedCollectionRequests

Description — This attribute counts the digit collection requests rejected due to lack of resources. A persistent increase indicates an engineered mismatch between demand for and capacity of the digit collection resources.

This counter wraps to zero if its maximum is reached.

Values — Decimal (0..4294967295)

RESPONSE No name

Description — This group contains the real-time collected statistics for the H248 component.
These statistics are not collected on ***Vsp2*** or ***12mVspAal*** cards***.***

ATTRIBUTE failovers

Description — This attribute counts the number of times the gateway has performed failover procedures and attempted contact with another controller since the last DCS real-time statistics poll.

Values — Decimal (0..65535)

ATTRIBUTE txRetransmissions (txRetran)

Description — This attribute counts the number of media gateway control protocol retransmissions sent by the Gateway. Each retransmission of a given transaction will be individually counted.

Values — Decimal (0..4294967295)

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ATTRIBUTE rxRetransmissions (rxRetran)

Description	This attribute counts the number of media gateway control protocol retransmissions received by the Gateway. Each retransmission of a given transaction will be individually counted.
Values	Decimal (0..4294967295)

RESPONSE

Description	This collected statistics record contains the CPU resource utilization statistics collected at the real-time collection intervals for the *PBlock* component. These statistics will not be collected on ***12mVspAal*** and ***Vsp2*** cards.

ATTRIBUTE cpuUtilAvg

Description	This attribute indicates average processing utilization of this *PBlock* component. This value is calculated by taking the average of values sampled at 1 second intervals.
Values	Decimal (0..100)
Units	%

ATTRIBUTE cpuUtilAvgMin

Description	This attribute indicates the minimum average processing utilization of this *PBlock* component.
Values	Decimal (0..100)
Units	%

ATTRIBUTE cpuUtilAvgMax

Description	This attribute indicates the maximum average processing utilization of this *PBlock* component.
Values	Decimal (0..100)
Units	%

RESPONSE For security reasons, ... files cannot be unprotected.

Description	This response is generated when the operator tries to unprotect a file which should not be unprotected for security reasons.

ATTRIBUTE secureFileType

Description	This attribute gives the type of file that is being touched.
Values	log commit

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RESPONSE

Description	This RtStats record is generated at the end of each 5-minute collection interval. It contains information related to the *FabricCard* component.

ATTRIBUTE maxFabricTemperature

Description	This attribute indicates the maximum temperature which the Fabric reached during the last collection interval.
Values	Decimal (0..100)
Units	degreeC

RESPONSE

Description	This RtStats collected event record contains statistics related to IP traffic passing through this interface.

ATTRIBUTE linkCapacity

Description	This attribute indicates the maximum bandwidth of the link available to layer 3 packet services.
Values	Long Integer
Units	octet/s

ATTRIBUTE inBytes

Description	This attribute indicates the total number of bytes incoming to this physical interface during the last collection interval. This excludes overhead from layer 2 frame headers.
Values	Long Integer

ATTRIBUTE outBytes

Description	This attribute indicates the total number of bytes outgoing from this physical interface during the last collection interval. This excludes overhead from layer 2 frame headers.
Values	Long Integer

ATTRIBUTE inPackets

Description	This attribute indicates the total number of IP and ARP packets incoming to this physical interface during the last collection interval.
Values	Long Integer

ATTRIBUTE outPackets

Description	This attribute indicates the total number of IP and ARP packets outgoing from this physical interface during the last collection interval.
Values	Long Integer

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ATTRIBUTE inLocalTcpPackets

Description — This attribute indicates the total number of TCP packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards.

Values — Long Integer

ATTRIBUTE inLocalUdpPackets

Description — This attribute indicates the total number of UDP packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards.

Values — Long Integer

ATTRIBUTE inLocalIcmpPackets

Description — This attribute indicates the total number of ICMP packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards.

Values — Long Integer

ATTRIBUTE inLocalOspfPackets

Description — This attribute indicates the total number of OSPF packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards.

Values — Long Integer

ATTRIBUTE inLocalArpPackets

Description — This attribute indicates the total number of ARP packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards

Values — Long Integer

ATTRIBUTE inLocalPackets

Description — This attribute indicates the total number of packets incoming to this physical interface during the last collection interval and destined to this shelf that do not fit into the TCP, UDP, ICMP, ARP, or OSFP classification.

Values — Long Integer

ATTRIBUTE outLocalTcpPackets

Description — This attribute indicates the total number of TCP packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.

Values — Long Integer

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ATTRIBUTE outLocalUdpPackets

Description — This attribute indicates the total number of UDP packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.

Values — Long Integer

ATTRIBUTE outLocalIcmpPackets

Description — This attribute indicates the total number of ICMP packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.

Values — Long Integer

ATTRIBUTE outLocalOspfPackets

Description — This attribute indicates the total number of OSPF packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.

Values — Long Integer

ATTRIBUTE outLocalArpPackets

Description — This attribute indicates the total number of OSPF packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.

Values — Long Integer

ATTRIBUTE outLocalPackets

Description — This attribute indicates the total number of packets leaving the interface during the last collection interval, which originated on this shelf, that do not fit into the TCP, UDP, ICMP, ARP, or OSPF classification.

Values — Long Integer

ATTRIBUTE inLocalDiscarded

Description — This attribute indicates the total number of malformed IP packets incoming to the interface during the last collection interval. These are packets which are corrupted.

Values — Long Integer

ATTRIBUTE outLocalDiscarded

Description — This attribute indicates the total number of packets attempting to exit the interface during the last collection interval which were rejected. These are packets which are corrupted or lost due to congestion.

Values — Long Integer

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ATTRIBUTE inLocalExceptions

Description — This attribute indicates the total number of packets received during the last collection interval on this interface and destined for this shelf that require exception handling, with the exception of packets destined to the VSP cards.

Values — Long Integer

ATTRIBUTE inFwdExceptions

Description — This attribute indicates the total number of packets received during the last collection interval on this interface, not destined for this shelf, that require exception handling.

Values — Long Integer

RESPONSE Invalid Logical Processor: Component Lp/... is not currently provisioned.

Description — This response is generated when the user issues a *Check Prov* command against an *LpG* that is provisioned with an *Lp* that does not exist in the *Shelf*.

ATTRIBUTE lpgInvalidLpError

Description — This attribute indicates the instance value of the *Lp* that does not exist in the Shelf.

Values — Decimal (1..15)

RESPONSE Lp/... can not be provisioned under both LpG/... and LpG/... at the same time.

Description — This response is generated when the user issues a *Check Prov* command against an *LpG* that is provisioned with an *Lp* already configured under another *LpG*. Any given Lp must be associated to a maximum of one *LpG*.

ATTRIBUTE lpgDuplicateLpInUseError

Description — This attribute indicates the instance value of the *Lp* that is duplicated under more than one *LpG*.

Values — Decimal (1..15)

ATTRIBUTE lpgFirstLpGNumberError

Description — This attribute indicates the instance value of the first *LpG* provisioned with a duplicated *Lp*.

Values — Decimal (1..7)

ATTRIBUTE lpgSecondLpGNumberError

Description — This attribute indicates the instance value of the second *LpG* provisioned with a duplicated *Lp*.

Values — Decimal (1..7)

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RESPONSE Provisioning file ... has failed sanity andcannot be loaded.

Description — This response is generated by the *Load* or *Apply* commands when the specified file's sanity is failed.

System action: The command is ignored.
Operator action: Re-enter the command with properly saved provisioning file.

ATTRIBUTE file

Description — This attribute is the name of the file that has failed sanity.

Values — String (1..40, ASCII)

RESPONSE Error:When custType is pvg, and a protected route is provisioned under ... the preConfigFwdPath of ... must be set to enabled.

Description — A *Check Prov* command generates this response if the *preConfigFwdPath* attribute of the *Vr Ip* component is not set to ***enabled*** when a protected route is provisioned and the attribute *custType* of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that *preConfigFwdPath* of the *Vr Ip* component is set to ***enabled***.

ATTRIBUTE vrComponentName

Description — This attribute indicates the name of the *Vr* component instance under which the protected route is provisioned.

Values — The name of the component

ATTRIBUTE vrIpComponentName

Description — This attribute indicates the name of the *Vr Ip* component.

Values — The name of the component

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RESPONSE Error:When custType is pvg, and a protected route is provisioned under ... the defaultProtectedFailureBehavior of ... must be set to discard.

Description

A *Check Prov* command generates this response if the *defaultProtectedFailureBehavior* attribute of the *Vr Ip Static* component is not set to ***discard*** when a protected route is provisioned and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that *defaultProtectedFailureBehavior* attribute of the *Vr Ip Static* component is set to ***discard*** when a protected route is provisioned and the attribute *custType* of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vrComponentName

Description

This attribute indicates the name of the *Vr* component instance under which the protected route is provisioned.

Values

The name of the component

ATTRIBUTE vrIpStaticComponentName

Description

This attribute indicates the name of the *Vr Ip Static* component.

Values

The name of the component

RESPONSE Error:When custType is pvg, the heartbeat attribute of protected route...must be set to enabled.

Description

A *Check Prov* command generates this response if the *heartbeat* attribute of the *Vr Ip Static Route* component is not set to ***enabled*** when the route is a protected route and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that *heartbeat* of the *Vr Ip Static Route* component is set to ***enabled***.

ATTRIBUTE protectedRouteName

Description

This attribute indicates the name of the *Vr Ip Static Route* component instance which is a protected route.

Values

The name of the component

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RESPONSE Warning:When custType is pvg, setting the defaultHeartbeatFailureBehavior of ... to hard may result in removal of a protected route if the heartbeat fails.

Description

A *Check Prov* command generates this response if the *defaultHeartbeatFailureBehavior* attribute of the *Vr Ip Static* component is set to ***hard*** when a protected route is provisioned and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE vrIpStaticComponentName

Description

This attribute indicates the name of the *Vr Ip Static* component.

Values

The name of the component

RESPONSE Error:When custType is pvg, and a protected route is provisioned under ... the heartbeatDeadInterval attribute of ... must not be set to disabled.

Description

A *Check Prov* command generates this response if the *heartbeatDeadInterval* attribute of the *Vr Ip Static* component is not set to a value other than ***disabled*** when a protected route is provisioned.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that *heartbeatDeadInterval* attribute of *Vr Ip Static* component is not set to ***disabled*** when a protected route is provisioned.

ATTRIBUTE vrComponentName

Description

This attribute indicates the name of the *Vr* component instance under which the protected route is provisioned.

Values

The name of the component

ATTRIBUTE vrIpStaticComponentName

Description

This attribute indicates the name of the *Vr Ip Static* component.

Values

The name of the component

RESPONSE

Description

This real-time statistics event contains the attributes for the *Shelf* performance measurement (real-time statistics) record.

ATTRIBUTE criticalSetAlarms

Description

This attribute indicates the number of critical alarms that were set during the last collection interval.

Values

Decimal (0..4294967295)

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ATTRIBUTE majorSetAlarms

Description — This attribute indicates the number of major alarms that were set during the last collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE minorSetAlarms

Description — This attribute indicates the number of minor alarms that were set during the last collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE criticalClearAlarms

Description — This attribute indicates the number of critical alarms that were cleared during the last collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE majorClearAlarms

Description — This attribute indicates the number of major alarms that were cleared during the last collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE minorClearAlarms

Description — This attribute indicates the number of minor alarms that were cleared during the last collection interval.

Values — Decimal (0..4294967295)

RESPONSE Error:The following two PolicedPhb components conflict with each other because they have the same component instance value:

Description — Two *Meter* subcomponents of one *PolicerProfile* component must not have *PolicedPhb* subcomponents with equal component instance values.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the conflicting *PolicedPhb* components.

ATTRIBUTE phb1

Description — This attribute specifies the first of two conflicting *PolicedPhb* components.

Values — The name of the component

ATTRIBUTE phb2

Description — This attribute specifies the second of two conflicting *PolicedPhb* components.

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Values — The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection the destination of the static route...must be the IP subnet defined for a Vsp card.

Description — A *Check Prov* command generates this response if the destination of the *Vr Ip Static Route* component is not an IP subnet defined for the *Nsta Vgs IpMConn* component on a VSP card when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the destination of the *Vr Ip Static Route* component is an IP subnet defined for the *Nsta Vgs IpMConn* component on a VSP card when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description — This attribute indicates the name of the *Vm If* component instance.

Values — The name of the component

ATTRIBUTE staticRouteComponentName

Description — This attribute indicates the name of the *Vr Ip Static Route* component instance.

Values — The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection the static route...is not allowed.

Description — A *Check Prov* command generates this response if a default *RouteEntry/0.0.0.0* is provisioned when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no default *RouteEntry/0.0.0.0* is provisioned when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description — This attribute indicates the name of the *Vm If* component instance.

Values — The name of the component

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ATTRIBUTE discardDefaultStaticRouteName

Description — This attribute indicates the name of the default *Vr Ip Static Route* component instance.

Values — The name of the component

RESPONSE Error:When the custType is pvg the lacpMode of ... must be passive.

Description — A *Check Prov* command generates this response if the *lacpMode* attribute of the *Lag* component is not set to ***passive*** when the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *lacpMode* attribute of the *Lag* component is set to ***passive*** when the attribute *custType* of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE lagInstanceName

Description — This attribute indicates the name of the *Lag* component instance.

Values — The name of the component

RESPONSE Warning:When custType is pvg and there is at least one Vr Pp linked to a 4pGe card it is recommended that the phbRoutingSource of ... should be set to cs1.

Description — A *Check Prov* command generates this response if the *phbRoutingSource* attribute of the *Vr Dsd* component is not set to ***cs1*** when a *Vr Pp* component is linked to a ***4pGe*** card and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE vrDiffServDomainName

Description — This attribute indicates the name of the *Vr Dsd* component instance.

Values — The name of the component

RESPONSE Warning:When custType is pvg and there is at least one Vr Pp linked to a 4pGe card it is recommended that the phbGeneralSource of ... should be set to df.

Description — A *Check Prov* command generates this response if the *phbGeneralSource* attribute of the *Vr Dsd* component is not set to ***df*** when a *Vr Pp* component is linked to a ***4pGe*** card and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

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ATTRIBUTE vrDiffServDomainName

Description — This attribute indicates the name of the *Vr Dsd* component instance.

Values — The name of the component

RESPONSE Warning:When custType is pvg it is recommended that the baMode of ... should be set to preserve.

Description — A *Check Prov* command generates this response if the *baMode* attribute of the *Vr Ip DiffServ Is* component is not set to ***preserve*** when the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE vrIpDiffServIsName

Description — This attribute indicates the name of the *Vr Ip DiffServ Is* component.

Values — The name of the component

RESPONSE Warning:When custType is pvg the value of minimumLinks in all of the following Lag components is recommended to be the same as they are all linked to the same Vr....

Description — A *Check Prov* command generates this response if different *minimumLinks* values are assigned to *Lag* component instances which are linked to the same *Vr* component instance when the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE lagInstanceList

Description — This attribute contains the list of the *Lag* component instances which are linked to the same *Vr* but have different values of *minimumLinks*.

List of — The name of the component

RESPONSE Warning:When custType is pvg and ... is used as a protected default route the minimumLinks of ... may be too low to provide flow protection during port failures if the flow rate exceeds the throughput of the ... active links.

Description — A *Check Prov* command generates this response when the *custType* attribute of the *Vr CustSpec* component is ***pvg*** and the *Lag* is used as a protected default route but has its *minmumLinks* set to a value which is too low.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

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ATTRIBUTE lagInstanceName

Description — This attribute indicates the name of the *Lag* component instance.

Values — The name of the component

ATTRIBUTE valueOfMinimumActiveLinks

Description — This attribute indicates the value of the *minimumLinks* of the *Lag* component instance.

Values — Decimal (1..31)

ATTRIBUTE numberOfActiveLinks

Description — This attribute indicates the number of the *Lag Link* component instances.

Values — Decimal (1..31)

RESPONSE Software patching failed due to the following reason:.....

Description — The *Activate Prov* command generates this error response when an event occurs preventing hitless software patching to proceed.

ATTRIBUTE pcsHspAbortReason

Description — This attribute indicates why Hitless Software Patching has been aborted.

Values — Abort reason undetermined.
A software error occured.
HSP stopped via StopProv'command.'
LP involved in patching went offline unexpectedly:
LP could not load software:

ATTRIBUTE pcsString

Description — This attribute may be used to provide further information.

Values — String (0..320, ASCII)

RESPONSE Continue Prov failed due to a pausable event, pause reason: .....The -force option will continue the software patching, but service outages may occur. To abort type Stop Prov.

Description — The *Continue Prov* command generates this response during Hitless Software Patching when issued without the *-force* option and when certain conditions are not met. The *Continue Prov* command will succeed only if the pausable events are all cleared. The operator can decide to force the Hitless Software Patching to resume by typing *Continue -force Prov* or to abort the Hitless Software Patching by typing *Stop Prov*.
System action: The *Continue Prov* command will resume software patching if the pausable conditions have been cleared. The *Continue -force Prov* command will ignore the pausable events and resume with the software patching. The *Stop Prov* command will cause a rollback to the current view software.
Operator action: Follow appropriate procedures for software patching.

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ATTRIBUTE pcsHspTransferOfServices

Description — This attribute indicates which LPs failed to transfer their services to another processor card within the allotted time.

Values — String (0..320, ASCII)

ATTRIBUTE pcsHspCannotTransferServices

Description — This attribute indicates which LPs cannot transfer their services to another processor card.

Values — String (0..1120, ASCII)

ATTRIBUTE pcsHspProvidingServices

Description — This attribute indicates which LPs failed to indicate that they are providing service within the allotted time.

Values — String (0..320, ASCII)

ATTRIBUTE pcsHspPausibleAlarm

Description — This attribute indicates the LPs which have pausable alarms issued against it.

Values — String (0..320, ASCII)

ATTRIBUTE pcsHspAppsNotReady

Description — This attribute indicates which LPs have applications which are not ready.

Values — String (0..320, ASCII)

RESPONSE The software patching is paused because of the following reason:.....To resume, type Continue Prov. To stop, type Stop Prov.

Description — The *Activate Prov* command generates this response during Hitless Software Patching when issued without the *-noPause* option and when certain conditions are not met.
The *Activate Prov* command always generates this message during Hitless Software Patching when issued with the *-pause* option.
This response indicates that the software migration is paused. The Hitless Software Patching will pause as long as no action is taken by the operator.
System action: The *Continue Prov* command will resume software patching if the pausable conditions have been cleared. The *Stop Prov* command will cause a rollback to the current view software.
Operator action: Follow appropriate procedures for software patching.

ATTRIBUTE pcsHspTransferOfServices

Description — This attribute indicates which LPs failed to transfer their services to another processor card within the allotted time.

Values — String (0..320, ASCII)

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ATTRIBUTE pcsHspCannotTransferServices

Description	This attribute indicates which LPs cannot transfer their services to another processor card.
Values	String (0..1120, ASCII)

ATTRIBUTE pcsHspProvidingServices

Description	This attribute indicates which LPs failed to indicate that they are providing service within the allotted time.
Values	String (0..320, ASCII)

ATTRIBUTE pcsHspPausibleAlarm

Description	This attribute indicates the LPs which have pausable alarms issued against it.
Values	String (0..320, ASCII)

ATTRIBUTE pcsHspAppsNotReady

Description	This attribute indicates which LPs have applications which are not ready.
Values	String (0..320, ASCII)

ATTRIBUTE pcsHspPauseOptionIssued

Description	This attribute indicates that the *Activate Prov* command was issued with the *-pause* option.
Values	String (0..320, ASCII)

RESPONSE The following LPs will participate in software patching: ... The patching can be stopped by issuing the Stop Prov command.

Description	The *Activate Prov* command generates this response at the beginning of Hitless Software Patching, providing a list of Logical Processors that will be participating. At this point the operator can stop the Hitless Software Patching by issuing the *Stop Prov* command.

ATTRIBUTE pcsLpOper

Description	This attribute lists the LPs that are participating in the Hitless Software Patching.
List of	The name of the component
List Size	16

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RESPONSE Error:The tunnelDestinationAddress ... must be one of the public tunnel addresses of the remote tunnel endpoints.

Description — The *Check Prov* command produces this response if an invalid IP address, specified for the tunnel endpoint, is not listed with the public tunnel addrsses of the remote tunnel endpoints. The *tunnelDestinationAddress* must be specified in the *destinationAddresses* attribute of the *InwIpTunnelMsep* component or the *destinationAddress* attribute of the *InwIpTunnelSep* component in the same shared domain.

ATTRIBUTE invalidTda

Description — This attribute specifies the invalid IP address of the *tunnelDestinationAddress* attribute.

Values — IP address

RESPONSE Error: The linkDestinationAddress can not be set to ....

Description — This error message appears when the provisioned media is not *Ppp* and the attribute *linkDestinationAddress* is provisioned with a non-zero value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Change the provisioned *linkDestinationAddress* under the *Interface* component.

ATTRIBUTE invalidLinkDestAddress

Description — This attribute contains the value of the invalid *linkDestinationAddress*.

Values — IP address

RESPONSE Error: Some features in the Sw Lpt featureList attribute are not supported by the service bundle: ...

Description — This response group informs the user that not all features in the *Sw Lpt featureList* are supported by the service bundle. The features not supported by the service bundle are also listed.
System action: The *Check Prov* command has failed. No *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.
Operator action: Set the ***serviceBundleName*** attribue to a valid service bundle name. The valid bundle names for a ***16pOC3PosAtm*** card are:
allServices
mplsAtmIp
porsAtmIp
Note that service bundle ***allServices*** cannot be used with a card whose product code starts with NTHW44.

ATTRIBUTE rspNpuListOfUnsupportedFeatures

Description — This attribute indicates the names of the features that are not supported by the provisionined service bundle.

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Values String (0..255, ASCII)

RESPONSE Error:When the vgsIp feature is provisioned on a ... card, ... must be set to one of the following values:...

Description A *Check Prov* command produces this response if either of the attributes *defaultVoiceRate* or *tone2100Rate* has been set to ***32kG726*** and the feature ***vgsIp***, which is not capable of supporting G.726 on the current VSP card type, has been provisioned.

System action: No *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Check to see if the feature ***vgsIp*** is required. If so, modify the attribute *tone2100Rate* to ***64kG711***, or modify the attribute *defaultVoiceRate* to either ***64kG711*** or ***8kG729***.

ATTRIBUTE vgsCardType

Description This attribute indicates the VSP card type currently being used by PVG.

Values 2pOC3ChSmIrVsp3
2pOC3ChSmIrVsp4e

ATTRIBUTE vgsPktProfAttributeName

Description This attribute indicates which *PktProf* component attribute is being checked against the ***vgsIp*** feature.

Values defaultVoiceRate
tone2100Rate

ATTRIBUTE vgsPktProfAttributeValues

Description This attribute indicates the allowed values for the *PktProf* component attribute that is being checked against the ***vgsIp*** feature.

List of 64kG711
8kG729

List Size 2

RESPONSE

Description The following describes the attributes of the hardware diagnostic test to be displayed automatically at the end of the test.

ATTRIBUTE status

Description This attribute records the current status of the hardware diagnostic test.
passed - indicates that the hardware diagnostic test passed.
failed - indicates that the hardware diagnostic test failed.
running - indicates that the hardware diagnostic test is currently running.
notYetRun - indicates that hardware diagnostic have not yet run on this card.

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notSupported - indicates that the card does not support the running of the hardware diagnostic test.

Values
passed
failed
running
notYetRun
notSupported

ATTRIBUTE causeOfTermination

Description
This attribute records the reason the hardware diagnostic test ended. It contains one of the following values:
neverStarted: the card test has not been started.
testRunning: the card test is currently running.
testRanToCompletion: the hardware diagnostic test ran to completion.
stoppedByOperator: a *Stop* command was issued.
targetFailed: the target card became non-operational.

Values
neverStarted
testRunning
testRanToCompletion
stoppedByOperator
targetFailed

ATTRIBUTE startTime

Description
This attribute records the time at which the test was started.

Values
Time (DHMS)

ATTRIBUTE elapsedTime

Description
This attribute displays the number of minutes that the test has been running.

Values
Decimal (0..1440)

Units
minutes

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RESPONSE Warning: Lp/... will be reset due to modifications to the Lp/... Npu component if this is an NTHW44 FP. All other FP types are not affected.

Description — The *Check Prov* command generates this response after the user has made a change to the *Lp Npu* component and the change is a critical change to the *Lp* component. Activation of the provisioning data will cause the card to be reset. Currently the only critical change is that of changing the ***serviceBundleName*** attribue on an NTHW44 FP. On a card whose product code does not start with NTHW44 the card will not be reset.
System action: The *Check Prov* command has just been executed. Continuing with an *Activate Prov* command will cause the card to be reset.
Operator action: The choices are:
1) Continue with the *Activate Prov* command and allow the card to be reset.
2) Use the *Copy Prov* command to undo all the provisioning changes.
3) Undo the change to the *Lp Npu* component and then issue the *Check Prov* command and the *Activate Prov* command.

ATTRIBUTE rspNpuLpCriticalChgAttrib1

Description — This attribute indicates the *Lp* component instance that is to be reset.

Values — Decimal (0..15)

ATTRIBUTE rspNpuLpCriticalChgAttrib2

Description — This attribute indicates the *Lp* component instance that is to be reset.

Values — Decimal (0..15)

RESPONSE Opened ... files cannot be protected.

Description — This response is generated when the operator tries to protect an opened file which should not be protected.

ATTRIBUTE secureFileType

Description — This attribute gives the type of file that is being protected.

Values — log

RESPONSE Error:An Mpls component must have an RsvpTe component provisioned under the ... component.

Description — The *Check Prov* command produces this response when the *Mpls* component has been provisioned under the *Router* component but no *RsvpTe* component has been provisioned under this *Router* component.

System Action: The *Check Prov* fails.

Operator Action: Provision an *RsvpTe* component under the *Router* component.

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ATTRIBUTE noRsvpTeCompErr

Description — This attribute indicates the name of the *Router* component used in the response.

Values — The name of the component

RESPONSE Error: The ... attribute value of ... for the component ... is invalid. Use a valid Class A, B or C non-reserved address.

Description — The *Check Prov* command produces this response when an invalid IP address has been provisioned for the specified component.

System Action: The *Check Prov* fails.

Operator Action: The specified attribute value for the component should be changed to a valid Class A, B or C non-reserved address.

ATTRIBUTE lspInvalidEpaErrorAttr

Description — This attribute indicates which attribute under the *Lsp* component is in error.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE lspInvalidEpaErrorVal

Description — This attribute indicates the invalid IP address that was provisioned.

Values — IP address

ATTRIBUTE lspInvalidEpaErrorComp

Description — This attribute indicates which component contains that invalid IP address.

Values — The name of the component

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description — The *Check Prov* command produces this response when the *addToIpRdb* attribute has been set to an invalid value for the specified *Lsp* component which has been provisioned to be a primary LSP.

System Action: The *Check Prov* fails.

Operator Action: The attribute value should either be changed to a valid value or the *Lsp* component should be provisioned to be a standby LSP.

ATTRIBUTE lspPlspAddToIpRdbErrorAttr

Description — This attribute indicates which attribute under the *Lsp* component is in error.

Values — Decimal (0..65535)

Replication — The name of the component

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ATTRIBUTE IspPIspAddToIpRdbErrorComp

Description — This attribute indicates which component is in error.

Values — The name of the component

ATTRIBUTE IspPIspAddToIpRdbErrorVal

Description — This attribute indicates which *Lsp* attribute value is invalid.

Values — false
true
sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Error:The ... component has an invalid instance value. Use a valid class A, B or C non-reserved IP address.

Description — The *Check Prov* command produces this response when the specified component has been provisioned with an invalid IP address.

System Action: The *Check Prov* fails.

Operator Action: The component must be re-added using a valid class A, B or C non-reserved address.

ATTRIBUTE IspRaInvalidInstanceErrorComp

Description — This attribute indicates which component has been provisioned with an invalid instance.

Values — The name of the component

RESPONSE Error:The maximum number of ... Lsp components per Mpls component has been exceeded.

Description — The *Check Prov* command produces this response when the maximum number of allowable *Lsp* components have been exceeded for this *Mpls* component.

System Action: The *Check Prov* fails.

Operator Action: Delete some of the *Lsp* components to bring the total number below the maximum allowed value.

ATTRIBUTE IspMaxLspErrorVal

Description — This attribute indicates the maximum number of *Lsp* components allowed on the *Mpls* component.

Values — Decimal (0..65535)

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RESPONSE Error:The ... attribute for the component ... cannot have a value of ....

Description — The *Check Prov* command produces this response when *primaryLsp* attribute is set to a value of ***0***.

System Action: The *Check Prov* fails.

Operator Action: The *primaryLsp* attribute of this *Lsp* component must be provisioned with a valid *Lsp* instance value.

ATTRIBUTE IspZeroPLspErrorAttr

Description — This attribute indicates which attribute under the *Lsp* component is in error.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE IspZeroPLspErrorComp

Description — This attribute indicates which component is in error.

Values — The name of the component

ATTRIBUTE IspZeroPLspErrorValue

Description — This attribute indicates the value which is invalid for the specified attribute.

Values — Decimal (0..65535)

RESPONSE Error:An ... subcomponent cannot exist under ... when either the addToIpRdb attribute is set to false or the primaryLsp attribute is not the same as the instance value for this Lsp.

Description — The *Check Prov* command produces this response when either an *Lsp* component hase been provisioned to be a primary LSP with the *addToIpRdb* attribute set to ***false*** and provisioned with *IpV4ReachableAddress* subcomponents or the *Lsp* component has been provisioned to be a standby LSP and provisioned with *IpV4ReachableAddress* subcomponents.

System Action: The *Check Prov* fails.

Operator Action: If the *Lsp* component is a primary LSP, then the operator should either set the *addToIpRdb* attribute to ***true*** or delete the *IpV4ReachableAddress* subcomponents for this *Lsp* component.

If the *Lsp* component is a standby LSP, then the *IpV4ReachableAddress* subcomponents must be deleted for this LSP.

ATTRIBUTE IspNoRaAllowedErrorSubComp

Description — This attribute indicates which subcomponent type is not allowed to exist under this *Lsp* component.

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Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE IspNoRaAllowedErrorComp

Description	This attribute indicates which *Lsp* component is in error.
Values	The name of the component

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description	The *Check Prov* command produces this response when the *alarmControl* attribute has been set to ***sameAsPrimaryLsp*** for an *Lsp* component that has been provisioned to be a primary LSP. **System Action**: The *Check Prov* fails. **Operator Action**: The *alarmControl* attribute for the specified *Lsp* component must be changed from ***sameAsPrimaryLsp*** to some other value or the *Lsp* component must be provisioned to be a standby LSP.

ATTRIBUTE IspPIspAlarmErrorAttr

Description	This attribute indicates which attribute under the *Lsp* component is in error.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE IspPIspAlarmErrorComp

Description	This attribute indicates which component is in error.
Values	The name of the component

ATTRIBUTE IspPIspAlarmErrorVal

Description	This attribute indicates which *Lsp* attribute value is invalid.
Values	none critical (crit) major (maj) sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description	The *Check Prov* command produces this response when the specified attribute has been provisioned to use an invalid value for the specified *Lsp* component which has been provisioned to be a primary LSP. **System Action**: The *Check Prov* fails. **Operator Action**: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a standby LSP.

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ATTRIBUTE IspPIspBmOvErrorAttr

Description	This attribute indicates which attribute under the *Lsp* component is in error.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE IspPIspBmOvErrorComp

Description	This attribute indicates which *Lsp* component is in error.
Values	The name of the component

ATTRIBUTE IspPIspBmOvErrorVal

Description	This attribute indicates which *Lsp* attribute value is invalid.
Values	false true sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description	The *Check Prov* command produces this response when the *bandwidth* attribute is set to ***sameAsPrimaryLsp*** for an *Lsp* component that is provisioned to be a primary LSP. **System Action**: The *Check Prov* fails. **Operator Action**: The *bandwidth* attribute for this *Lsp* must be changed to any value other than ***sameAsPrimaryLsp***.

ATTRIBUTE IspPIspBwErrorAttr

Description	This attribute indicates which attribute under the *Lsp* component is in error.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE IspPIspBwErrorComp

Description	This attribute indicates which *Lsp* component is in error.
Values	The name of the component

ATTRIBUTE IspPIspBwErrorVal

Description	This attribute indicates the *Lsp* attribute value which is invalid.
Values	sameAsPrimaryLsp (sameAsPLsp)

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RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description — The *Check Prov* command produces this response when the specified attribute has been set to use an invalid value for the specified primary LSP component.

System Action: The *Check Prov* fails.

Operator Action: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a standby LSP.

ATTRIBUTE IspPIspSIspErrorAttr

Description — This attribute indicates which attribute under the *Lsp* component is in error.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE IspPIspSIspErrorComp

Description — This attribute indicates which *Lsp* component is in error.

Values — The name of the component

ATTRIBUTE IspPIspSIspErrorVal

Description — This attribute indicates which *Lsp* attribute value is invalid.

Values — Decimal (0..65535)

RESPONSE Error:The ... attribute under ... must be set to ... when this component is provisioned to be a standby LSP.

Description — The *Check Prov* command produces this response when the specified attribute has been set to an invalid value for the specified standby LSP component.

System Action: The *Check Prov* fails.

Operator Action: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a primary LSP.

ATTRIBUTE IspNonZeroEpaErrorAttr

Description — This attribute indicates which attribute under the *Lsp* component is in error.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE IspNonZeroEpaErrorComp

Description — This attribute indicates which *Lsp* component is in error.

Values — The name of the component

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ATTRIBUTE IspNonZeroEpaErrorVal

Description — This attribute indicates the invalid *Lsp* attribute value.

Values — IP address

RESPONSE Error:The maximum value of ... Hop components per Path component has been exceeded for this ... component.

Description — The *Check Prov* command produces this response when number of *Hop* components exceeds the maximum allowable number of *Hop* components for a *Path* component.

System Action: The *Check Prov* fails.

Operator Action: The operator will have to delete some of the *Hop* components for the specified *Path* component.

ATTRIBUTE pathMaxHopPerPathErrorVal

Description — This attribute indicates the maximum number of *Hops* components allowed for a *Path* component.

Values — Decimal (0..65535)

ATTRIBUTE pathMaxHopPerPathErrorComp

Description — This attribute indicates which *Path* component has too many *Hop* components provisioned.

Values — The name of the component

RESPONSE Error:The allowed maximum of ... Path components for an Mpls component has been exceeded.

Description — The *Check Prov* command produces this response when the number of provisioned *Path* components exceeds the maximum number of allowable *Path* components for an *Mpls* component.

System Action: The *Check Prov* fails.

Operator Action: The operator will have to delete some of the *Path* components to bring the total number of *Path* components below the maximum allowed value.

ATTRIBUTE pathMaxPathErrorAttr

Description — This attribute indicates the maximum value for the number of provisioned *Path* components.

Values — Decimal (0..65535)

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RESPONSE Warning:The component ... has changed and is specified in the pathName attribute for .... This new path will not take effect until this Lsp is locked and then unlocked.

Description — The *Check Prov* command produces this response when a provisioning change has occurred to a *Path* component which is being used by an existing *Lsp* component.

System Action: The *Check Prov* issues a warning.

Operator Action: If the operator requires the affected *Lsp* components to use the updated *Path* component then the *Lsp* components will have to be locked and then unlocked.

ATTRIBUTE pathCompNameWarningPathComp

Description — This attribute indicates which Path component has been changed.

Values — The name of the component

ATTRIBUTE pathCompNameWarningLspComp

Description — This attribute indicates which *Lsp* component is affected by the changed *Path* component.

Values — The name of the component

RESPONSE Error:The component ... must have at least one Hop subcomponent provisioned.

Description — The *Check Prov* command produces this response when the specified *Path* component does not have at least one *Hop* subcomponent provisioned.

System Action: The *Check Prov* fails.

Operator Action: Provision at least one *Hop* subcomponent for this *Path* component.

ATTRIBUTE pathNoHopsErrorComp

Description — This attribute indicates which *Path* component requires a *Hop* subcomponent.

Values — The name of the component

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RESPONSE Error:The ... component is provisioned to use ... as a ... LSP but ... is not provisioned.

Description

The *Check Prov* command produces this response when an *Lsp* component is provisioned to use another *Lsp* component as either a primary or standby LSP but the second *Lsp* component does not exist.

System Action: The *Check Prov* fails.

Operator Action: The second *Lsp* component should be provisioned to act as a primary or standby LSP for the first *Lsp* component or the first *Lsp* component should be provisioned to use another *Lsp* component as the primary or standby LSP.

ATTRIBUTE IspPIspSIspNotProvErrorComp

Description

This attribute indicates the first *Lsp* component that is in error.

Values

The name of the component

ATTRIBUTE IspPIspSIspNotProvErrorComp1

Description

This attribute indicates the second *Lsp* component that is specified in the attribute of the first *Lsp* component.

Values

The name of the component

ATTRIBUTE IspPIspSIspNotProvErrorType

Description

This attribute indicates whether the second *Lsp* component was to be used as a primary or standby LSP.

Values

primary
standby

ATTRIBUTE IspPIspSIspNotProvErrorComp2

Description

This attribute indicates the second *Lsp* component which does not exist.

Values

The name of the component

RESPONSE Error:When the ... ... attribute value is set to ..., the ... ... attribute value must be set to ....

Description

The *Check Prov* command produces this response when the *standbyLsp* attribute or the *primaryLsp* attribute has been set to a value for an *Lsp* component which does not correspond to the *primaryLsp* attribute or the *standbyLsp* attribute for another *Lsp* component.

System Action: The *Check Prov* fails.

Operator Action: The specified attribute value for the first component should match the specified attribute value for the second component.

ATTRIBUTE IspSIspPIspErrorComp

Description

This attribute indicates the first *Lsp* component that is in error.

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Values	The name of the component

ATTRIBUTE IspSIspPIspErrorAttr

Description	This attribute indicates which attribute is in error for the first *Lsp* component.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE IspSIspPIspErrorVal

Description	This attribute indicates which *Lsp* attribute value is invalid.
Values	Decimal (0..65535)

ATTRIBUTE IspSIspPIspErrorComp1

Description	This attribute indicates the second *Lsp* component that is in error.
Values	The name of the component

ATTRIBUTE IspSIspPIspErrorAttr1

Description	This attribute indicates which attribute is in error for the second *Lsp* component.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE IspSIspPIspErrorVal1

Description	This attribute indicates which Lsp attribute value is invalid.
Values	Decimal (0..65535)

RESPONSE Warning:The ... attribute under ... should be set to ... when this component is provisioned to be a standby LSP.

Description	The *Check Prov* command produces this response when the specified attribute has been set to an invalid value for the specified standby LSP component. **System Action**: The *Check Prov* issues a warning. **Operator Action**: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a primary LSP.

ATTRIBUTE IspSIspAddToIpRdbErrorAttr

Description	This attribute indicates which attribute under the *Lsp* component is associated with this warning
Values	Decimal (0..65535)
Replication	The name of the component

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ATTRIBUTE lspSlspAddToIpRdbErrorComp

Description — This attribute indicates which *Lsp* component is associated with this warning.

Values — The name of the component

ATTRIBUTE lspSlspAddToIpRdbErrorVal

Description — This attribute indicates which *Lsp* attribute value is invalid.

Values — false
true
sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Warning:The ... attribute under ... should be set to ... when this component is provisioned to be a standby LSP.

Description — The *Check Prov* command produces this response when the specified attribute has been set to an invalid value for the specified standby LSP component.

System Action: The *Check Prov* issues a warning.

Operator Action: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a primary LSP.

ATTRIBUTE lspSlspBmOvErrorAttr

Description — This attribute indicates which attribute under the *Lsp* component is associated with this warning.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE lspSlspBmOvErrorComp

Description — This attribute indicates which *Lsp* component is associated with this warning.

Values — The name of the component

ATTRIBUTE lspSlspBmOvErrorVal

Description — This attribute indicates which *Lsp* attribute value is invalid.

Values — false
true
sameAsPrimaryLsp (sameAsPLsp)

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RESPONSE Error:The ... attribute value of ... for the component ... is invalid. This value is linked to a component which either does not exist or it is not a Path component.

Description — The *Check Prov* command produces this response when the specified attribute has been set to link to a component which is either not a *path* component or has been set to link to a *path* component which does not exist.

System Action: The *Check Prov* fails.

Operator Action: The attribute value should be changed to link to a valid *path* component.

ATTRIBUTE IspPathNameInvalidAttr

Description — This attribute indicates which attribute under the *Lsp* component is in error.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE IspPathNameInvalidComp

Description — This attribute indicates the invalid component name used for the attribute in error.

Values — The name of the component

ATTRIBUTE IspPathNameInvalidComp1

Description — This attribute indicates the *Lsp* component that is in error.

Values — The name of the component

RESPONSE Error:The ... attribute under ... must not be set when this component is provisioned to be a standby LSP.

Description — The *Check Prov* command produces this response when the specified attribute has been set for the standby LSP component.

System Action: The *Check Prov* fails.

Operator Action: The specified attribute must be cleared of its provisioned value or the *Lsp* component must be provisioned to be a primary LSP.

ATTRIBUTE IspDoNotSetSIspErrorAttr

Description — This attribute indicates which attribute under the *Lsp* component is in error.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE IspDoNotSetSIspErrorComp

Description — This attribute indicates which *Lsp* component is in error.

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Values The name of the component

RESPONSE Error:The duplicate address and prefix length of ...,... was detected for components:... and ....

Description The *Check Prov* command produces this response when a duplicate address and prefix length is detected between two components. This error could result from the duplication from any combination of *endPointAddress* attribute values under the *Lsp* component and the *IpV4ReachableAddress* instance value. The address that is duplicated may or may not be a masked address.

System Action: The *Check Prov* fails.

Operator Action: The two components in question should be re-provisioned such that the IP addresses are no longer duplicated.

ATTRIBUTE lspDupIpV4AddrErrorAddr

Description This attribute indicates which IP address has been duplicated.

Values IP address

ATTRIBUTE lspDupIpV4AddrErrorAddrLen

Description This attribute indicates which prefix length is being used for this IP address.

Values Decimal (0..65535)

ATTRIBUTE lspDupIpV4AddrErrorComp

Description This attribute indicates the first component that has the duplicated IP address.

Values The name of the component

ATTRIBUTE lspDupIpV4AddrErrorComp1

Description This attribute indicates the second component that has the duplicated IP address.

Values The name of the component

RESPONSE Error:The maximum value of ... Hop components has been exceeded for this component.

Description The *Check Prov* command produces this response when the total number of *Hop* components has exceeded the maximum value allowed for the *Mpls* component.

System Action: The *Check Prov* fails.

Operator Action: Delete some of the *Hop* components to bring the total number below the maximum allowed value.

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ATTRIBUTE hopMaxHopPerMplsErrorVal

Description — This attribute indicates maximum allowed value for *Hop* components.

Values — Decimal (0..65535)

RESPONSE Error:No more than one instance of the ... component may be provisioned under the same Vgs component as this Spd component.

Description — A *Check Prov* command produces this response if more than one instance of each of the following components is provisioned under the same *Vgs* component as this *Spd*:

Mgc,
H248.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no more than a single instance of each of the above components is provisioned under the same *Vgs* component as this *Spd*.

ATTRIBUTE pvgIpSecSpdComponentType

Description — This attribute indicates the component that is in error.

Values — Mgc
H248

RESPONSE Error:The value of the ikeResponseTimerValue attribute multiplied by the value of the ikeRetryAttempts attribute must be less than 70% of the value of the saTimeToLive attribute in the ... component.

Description — A *Check Prov* command produces this response if the value of the *ikeResponseTimerValue* attribute multiplied by the value of the *ikeRetryAttempts* attribute is greater than 70% of the value of the *saTimeToLive* attribute in the specified *IkeTransform* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the *ikeResponseTimerValue* attribute multiplied by the value of the *ikeRetryAttempts* attribute is less than 70% of the value of the *saTimeToLive* attribute in the specified *IkeTransform* component.

ATTRIBUTE ikeTransformComponentName

Description — This attribute indicates the *ikeTransform* component that contains the attribute *saTimeToLive*.

Values — The name of the component

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RESPONSE Error:The ... attribute must reference an instance of the ... component under the same parent Spd as this Policy component.

Description — A *Check Prov* command produces this response if the specified attribute does not link to an instance of the specified component under the same parent *Spd* as this *Policy* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the specified attribute links to an instance of the specified component under the same parent *Spd* as this *Policy* component.

ATTRIBUTE linkAttribute

Description — This attribute indicates the attribute that is in error.

Values — ikePolicy
saProposal

ATTRIBUTE pvgIpSecSpdComponentType

Description — This attribute indicates the component that is in error.

Values — IkePolicy
SaProposal

RESPONSE Error:The value of the saTimeToLive attribute in each of the following components:...must be less than the minimum saTimeToLive attribute value of the following components:...

Description — A *Check Prov* command produces this response if any of the values of *saTimeToLive* in each of the indicated components is greater than the minimum *saTimeToLive* value of all the components listed.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Ensure that the value of *saTimeToLive* in each of the indicated components is less than the minimum *saTimeToLive* value of all the components listed.

ATTRIBUTE securityAssociationTransform

Description — This attribute indicates the list of *securityAssociationTransform* components.

List of — The name of the component

List Size — 4

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ATTRIBUTE ikeTransform

Description	This attribute indicates the list of *ikeTransform* components.
List of	The name of the component
List Size	4

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection only one NextHop is allowed under....

Description	A *Check Prov* command generates this response if more than one *NextHop* component is provisioned under the *Vr Ip Static Route* component when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***. ***System action***: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors. ***Operator action***: Ensure that no more than one *NextHop* component is provisioned under the *Vr Ip Static Route* component when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description	This attribute indicates the name of the *Vm If* component instance.
Values	The name of the component

ATTRIBUTE staticRouteComponentName

Description	This attribute indicates the name of the *Vr Ip Static Route* component instance.
Values	The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection only two Vr components can be linked to ....

Description	A *Check Prov* command generates this response if more than two *Vr* components are linked to a *Vm* when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***. ***System action***: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors. ***Operator action***: Ensure that no more than two *Vr* components are linked to a *Vm* when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

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ATTRIBUTE vmIfComponentName

Description — This attribute indicates the name of the *Vm If* component instance.

Values — The name of the component

ATTRIBUTE vmComponentName

Description — This attribute indicates the name of the *Vm* component.

Values — The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection, ... must have a CustSpec subcomponent with a custType of pvg.

Description — A *Check Prov* command generates this response when the *mode* attribute of the *Vm If* component is ***interVrConnection***, the *custType* attribute of this *Vr CustSpec* component is ***pvg*** and there is another *Vr* component linked to the *Vm* component which does not have a *CustSpec* subcomponent with a *custType* of ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *CustSpec* component is provisioned under the *Vr* component when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description — This attribute indicates the name of the *Vm If* component instance.

Values — The name of the component

ATTRIBUTE vrComponentName

Description — This attribute indicates the name of the *Vr* component instance under which the protected route is provisioned.

Values — The name of the component

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RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection the routing protocol component...is not allowed.

Description

A *Check Prov* command generates this response if *OspfInterface RipInterface* or *IsisInterface* is provisioned when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no *OspfInterface RipInterface* or *IsisInterface* is provisioned under the *Vr Pp ipPort LogicalIf* when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description

This attribute indicates the name of the *Vm If* component instance.

Values

The name of the component

ATTRIBUTE routingProtocolName

Description

This attribute indicates the routing protocol subcomponent name under the *Vr Pp ipPort LogicalIf* component.

Values

The name of the component

RESPONSE Error: The ... attribute cannot be set for SPVC type AtmMpe interfaces.

Description

This error response is generated by the *Check Prov* command when the *ilsForwarder* attribute of *AtmMpe* component is set for an SPVC type *AtmMpe* interface.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *ilsForwarder* attribute of the *AtmMpe* component is not set. Use of an IlsForwarder card when the *AtmMpe* component is configured for using SPVCs is not applicable.

ATTRIBUTE attribute

Description

This is the name of the attribute causing the error.

Values

Decimal (1..65535)

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RESPONSE Error: The ... attribute cannot be set. Set ignored.

Description — This response is used when the operator attempts to set the *instance* attribute of the *Loopback* component.

System Action: The *Set* command is ignored.

Operator Action: None. This attribute cannot be set by the operator.

ATTRIBUTE attribute

Description — This is the name of the attribute that cannot be set.

Values — Decimal (1..65535)

RESPONSE Error: The ... attribute cannot be set. Set ignored.

Description — This response is used when the operator attempts to set the *instance* attribute of the *AtmMpe* component.

System Action: The *Set* command is ignored.

Operator Action: None. This attribute cannot be set by the operator.

ATTRIBUTE attribute

Description — This is the name of the attribute that cannot be set.

Values — Decimal (1..65535)

RESPONSE The following Av(s) do not exist in the provisioned list:

Description — This response is issued when the list of Avs specified for removal does not exist in the already provisioned list. This response is also issued when the list of Avs specified by the operator does not have the right case sensitivity.

ATTRIBUTE listOfAvsNotPresent

Description — This attribute is the list of Avs not present in the already provisioned list.

List of — String (1..30, ASCII)

RESPONSE Error:The ... attribute must not contain a value of 0.0.0.0.

Description — A *Check Prov* command produces this response if the user provisions the specified attribute to contain the value ***0.0.0.0***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the specified attribute does not contain the value ***0.0.0.0***.

ATTRIBUTE directionAttribute

Description — This attribute indicates the attribute that is in error.

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Values	srcIpAddress dstIpAddress

RESPONSE Error:The ... component is not permitted under the same Vgs component as this Spd component.

Description	A *Check Prov* command produces this response if the user provisions the specified component in the same *Vgs* hierarchy as this *Spd* component. **System action:** No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors. **Operator action:** Delete the instance of the specified component.

ATTRIBUTE componentName

Description	This attribute indicates the component that must not be provisioned.
Values	The name of the component

RESPONSE Warning:This Voice Gateway as a whole is unsecured. The ... component does not have an Spd subcomponent.

Description	A *Check Prov* command produces this response if the specified *Ctrl* component does not have an *Spd* subcomponent. Note, this warning is only produced if a different *Ctrl* under this *Vgs* has been provisioned with an *Spd* subcomponent. **System action**: A warning is given. **Operator action**: It is recommended that an *Spd* subcomponent is provisioned under the specified *Ctrl* component.

ATTRIBUTE ctrlConnComponentName

Description	This attribute indicates the *Ctrl* component that does not have a *Spd* subcomponent.
Values	The name of the component

RESPONSE Error:The following Policy components must be provisioned in complementary pairs for inbound and outbound directions:...

Description	A *Check Prov* command produces this response if there are any *Policy* subcomponents under this *Spd* component that have not been provisioned with a complementary *Policy* component. **System action**: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors. **Operator action**: Ensure that all *Policy* components provisioned under this *Spd* component have been provisioned with a complementary *Policy* component.

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ATTRIBUTE policyComponentList

Description — This attribute indicates the list of *Policy* components.

List of — The name of the component

RESPONSE Error:The value of the remoteIpAddress attribute must be equal to the value of the initialMgcAddress attribute in the ... component.

Description — A *Check Prov* command produces this response if the value of the *remoteIpAddress* attribute is not be equal to the value of the *initialMgcAddress* attribute in the specified *Mgc* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the *remoteIpAddress* attribute is equal to the value of the *initialMgcAddress* attribute in the specified *Mgc* component.

ATTRIBUTE mgcComponentName

Description — This attribute indicates the *Mgc* component that contains the *initialMgcAddress* attribute.

Values — The name of the component

RESPONSE Error:When the value of the direction attribute is ... then the value of the ... attribute must not be equal to the value of the ipAddress attribute in the ... component.

Description — A *Check Prov* command produces this response if for a particular value of the *direction* attribute, the user provisions the value of the specified attribute to be equal to the value of attribute *ipAddress* in the specified *Ctrl* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the specified attribute is not equal to the value of the *ipAddress* attribute in the specified *Ctrl* component.

ATTRIBUTE direction

Description — This attribute indicates the value of the *direction* attribute.

Values — inbound
outbound

ATTRIBUTE srcDstIpAddr

Description — This attribute indicates the attribute that is in error.

Values — srcIpAddress
dstIpAddress

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ATTRIBUTE ctrlComponentName

Description — This attribute indicates the *Ctrl* component that holds the *ipAddress* attribute.

Values — The name of the component

RESPONSE Error:When the value of the direction attribute is ... then the value of the ... attribute must be equal to the value of the ipAddress attribute in the ... component.

Description — A *Check Prov* command produces this response if for a particular value of the *direction* attribute, the value of the specified attribute is provisioned to not be equal to the value of the *ipAddress* attribute in the specified *Ctrl* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the specified attribute is equal to the value of attribute *ipAddress* in the specified *Ctrl* component.

ATTRIBUTE direction

Description — This attribute indicates the value of the *direction* attribute.

Values — inbound
outbound

ATTRIBUTE srcDstIpAddr

Description — This attribute indicates the attribute that is in error.

Values — srcIpAddress
dstIpAddress

ATTRIBUTE ctrlComponentName

Description — This attribute indicates the *Ctrl* component that holds the *ipAddress* attribute.

Values — The name of the component

RESPONSE Error: The value of ... under ... is different from the value under .... All the Ethernet components associated with the same Lag must have their TM EP attributes set to the same values.

Description — This response is issued as the result of a Check Prov or Act Prov command when any of the following attributes, *minimumBandwidthGuarantee, redMode* or *txQueueSize* are not set to the same value for the *Ethernet TM EP* subcomponents. All Ethernet components associated with LAG Links under the same LAG must have their TM EP attributes set to the same values

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ATTRIBUTE tmValueId

Description — This attribute contains the numeric identifier of the attribute that does not have the same value set for the other links in the same Lag.

Values — Decimal (0..65535)

Replication — The name of the component

ATTRIBUTE etherTm1ComponentName

Description — This attribute indicates the *Ethernet TM EP* subcomponent which is associated with the *Lag Link* component under checking.

Values — The name of the component

ATTRIBUTE etherTm2ComponentName

Description — This attribute indicates which *Ethernet TM EP* subcomponent has different value setting compared to the component under checking.

Values — The name of the component

RESPONSE Error:When the protocol attribute is set to icmp then the ... attribute must be set to any.

Description — A *Check Prov* command produces this response if the specified attribute is not set to ***any*** when the *protocol* attribute is set to ***icmp***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the specified attribute is set to ***any***.

ATTRIBUTE portAttribute

Description — This attribute indicates the attribute that is in error.

Values — dstPort
srcPort

RESPONSE Error:When the action attribute is set to apply and the direction attribute is set to ... then the ... attribute must be set to equal the value of the initialMgcAddress attribute in the ... component.

Description — A *Check Prov* command produces this response if the value of the specified attribute is not equal to the value of the *initialMgcAddress* attribute in the specified *Mgc* component when the *action* attribute is set to ***apply*** and for the given value of the *direction* attribute.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the specified attribute is equal to the value of the *initialMgcAddress* attribute in the specified *Mgc* component.

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ATTRIBUTE direction

Description	This attribute indicates the value of the *direction* attribute.
Values	inbound outbound

ATTRIBUTE srcDstIpAddr

Description	This attribute indicates the attribute that is in error.
Values	dstIpAddress srcIpAddress

ATTRIBUTE mgcComponentName

Description	This attribute indicates the *Mgc* component that holds the *initialMgcAddress* attribute.
Values	The name of the component

RESPONSE Error:When the action attribute is set to apply then the ... attribute must be set to 2944.

Description	A *Check Prov* command produces this response if the specified attribute is not set to ***2944*** when the *action* attribute is set to ***apply***. **System action:** No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors. **Operator action:** Ensure that the specified attribute is set to ***2944***.

ATTRIBUTE portAttribute

Description	This attribute indicates the attribute that is in error.
Values	dstPort srcPort

RESPONSE IpPing: Rx reply of ... from ...: icmpSeq=..., time=...

Description	The *Ping* command generates this response if the specified IP address responded with a valid ICMP reply.

ATTRIBUTE bytes

Description	This attribute indicates the number of bytes contained in the ICMP echo reply packet.
Values	Decimal (0..4294967295)

ATTRIBUTE ipAddr

Description	This attribute indicates the IP address of the remote host.
Values	IP address

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ATTRIBUTE sequence

Description — This attribute indicates the sequence number contained in the ICMP echo reply packet.

Values — Decimal (0..4294967295)

ATTRIBUTE time

Description — This attribute indicates the time from the ICMP ping request being generated to the ICMP ping response being received.

Values — Decimal (0..4294967295)

RESPONSE ICMP echo request to ... failed.

Description — The *Ping* command generates this response to indicate that the ping to the specified IP address was unsuccessful because an ICMP error occurred.

ATTRIBUTE ipAddr

Description — This attribute indicates the IP address of the remote host.

Values — IP address

RESPONSE Error: The linkDestinationAddress can not be set to ... when the netmask is 255.255.255.255.

Description — This error message appears when
1) the provisioned media is *Ppp,* the value of the *netMask* attribute is ***255.255.255.255*** and the *linkDestinationAddress* is provisioned with a zero value;
2) the provisioned media is *Ppp,* the value of the *netMask* attribute is ***255.255.255.255*** and the *linkDestinationAddress* is provisioned as ***255.255.255.255***.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Change the provisioned *linkDestinationAddress* under the *Interface* component.

ATTRIBUTE invalidLinkDestAddress

Description — This attribute contains the value of the invalid *linkDestinationAddress.*

Values — IP address

RESPONSE Error:Reason: Value of ... for EP 0 cannot be less than 32.

Description — This response is issued when a semantic check is done on a *bufferLimitPerEP* attribute for EP0 element.

ATTRIBUTE bufferLimitPerEp

Description — This attribute identifies the attribute containing the error.

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Values	Decimal (0..4294967295)

RESPONSE Error:The Lmi pvcConfigParmsInFsr attribute can not be set to a value of vendorForumExtensions for a ... component.

Description	The *Check Prov* command generates this response when the value of the *Lmi pvcConfigParmsInFsr* attribute is set to ***vendorForumExtensions*** under a component that does not support Vendor Forum Extensions. System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors. Operator action: Change the value of the *Lmi pvcConfigParmsInFsr* attribute to either ***yes*** or ***no***.

ATTRIBUTE frsLmiPvcConfigVndrFrmErrCmpnt

Description	This attribute indicates the component for which the *Lmi pvcConfigParmsInFsr* attribute can not be set to ***vendorForumExtensions.***
Values	Decimal (1..65535)
Replication	The name of the component

RESPONSE Error:...The combination of the ipAddress and port attributes must have a value that is unique under the Nsta/n Vgs ... component.

Description	The *Check Prov* command produces this response if the combination of the *ipAddress* and *port* attributes has a value that is not unique under the *Nsta/n Vgs M2ua/SgV5* component. **System action**: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors. **Operator action**: Ensure that the combination of the *ipAddress* and *port* attributes has a value that is unique under the *Nsta/n Vgs M2ua/SgV5* component.

ATTRIBUTE userAdaptationComponent

Description	This describes the User Adaptation component under which this Asp has been provisioned.
Values	The name of the component

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RESPONSE Error:Only one of the following components can be provisioned under ...:FramerMlpppFramer.

Description

The *Check Prov* command generates this response if both of the following subcomponents are found under the same *Ppp* or *PppIwf* component:
Framer
MlpppFramer

The *Framer* and *MlpppFramer* are mutually exclusive.

System action: The *Check Prov* command fails. An *Activate Prov* command will not be accepted until a subsequent *Check Prov* completes without errors.

Operator action: Delete either the *Framer* or *MlpppFramer* subcomponent.

ATTRIBUTE pppBothFramersTypesComponent

Description

This attribute represents the root level component that has both a *Framer* and *MlpppFramer* subcomponent.

Values

The name of the component

RESPONSE Error:One of the following components must be provisioned under ...:FramerMlpppFramer.

Description

The *Check Prov* command generates this response if none of the following subcomponents are found under the same *Ppp* or *PppIWf* component:
Framer
MlpppFramer

One instance of *Framer* or *MlpppFramer* must exist under the *Ppp* or *PppIWf* component.

System action: The *Check Prov* command fails. An *Activate Prov* command will not be accepted until a subsequent *Check Prov* completes without errors.

Operator action: Add an instance of *Framer* or *MlpppFramer*.

ATTRIBUTE pppNoFramersTypesComponent

Description

This attribute represents the root level component that has no *Framer* or *MlpppFramer* subcomponent.

Values

The name of the component

RESPONSE The following LPs will participate in Hitless Critical Attribute Activation: ... The activation can be stopped by issuing the Stop Prov command.

Description

The *Activate Prov* command generates this response at the beginning of Hitless Critical Attribute activation, providing a list of Logical Processors that will be participating. At this point the operator can stop the Hitless Critical Attribute activation by issuing the *Stop Prov* command.

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ATTRIBUTE pcsLpOper

Description	This attribute lists the LPs that are participating in the Hitless Critical Attribute activation.
List of	The name of the component
List Size	16

RESPONSE Continue Prov failed due to a pausable event, pause reason: ...The -force option will continue the activation, but service outages may occur. To abort type Stop Prov.

Description	The *Continue Prov* command generates this response during Hitless Critical Attribute activation when issued without the *-force* option and when certain conditions are not met. The *Continue Prov* command will succeed only if the pausable events are all cleared. The operator can decide to force the Hitless Critical Attribute activation to resume by typing *Continue -force Prov* or to abort the Hitless Critical Attribute activation by typing *Stop Prov*. **System action**: The *Continue Prov* command will resume activation if the pausable conditions have been cleared. The *Continue -force Prov* command will ignore the pausable events and resume with the Hitless Critical Attribute activation. The *Stop Prov* command will cause a rollback to the current view. **Operator action**: Follow appropriate procedures for Hitless Critical Attribute activation.

ATTRIBUTE pcsHcaPausibleAlarm

Description	This attribute indicates the LPs which have pausable alarms issued against it.
Values	String (0..320, ASCII)

ATTRIBUTE pcsHcaAppsNotReady

Description	This attribute indicates which LPs have applications which are not ready.
Values	String (0..320, ASCII)

RESPONSE Activation failed due to the following reason:...

Description	The *Activate Prov* command generates this error response when an event occurs preventing Hitless Critical Attribute activation to proceed.

ATTRIBUTE pcsHcaAbortReason

Description	This attribute indicates why Hitless Critical Attribute activation has been aborted.
Values	Abort reason undetermined. A software error occured. HCA stopped via StopProv'command.' LP involved in activation went offline unexpectedly: LP could not load software:

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ATTRIBUTE pcsString

Description	This attribute may be used to provide further information.
Values	String (0..320, ASCII)

RESPONSE The activation is paused because of the following reason:...To resume, type Continue Prov. To stop, type Stop Prov.

Description	The *Activate Prov* command generates this response during Hitless Critical Attribute activation when issued without the *-noPause* option and when certain conditions are not met. The *Activate Prov* command always generates this message during Hitless Critical Attribute activation when issued with the *-pause* option. This response indicates that the activation is paused. The Hitless Critical Attribute activation will pause as long as no action is taken by the operator. **System action**: The *Continue Prov* command will resume activation if the pausable conditions have been cleared. The *Stop Prov* command will cause a rollback to the current view. **Operator action**: Follow appropriate procedures for Hitless Critical Attribute activation.

ATTRIBUTE pcsHcaPausibleAlarm

Description	This attribute indicates the LPs which have pausable alarms issued against it.
Values	String (0..320, ASCII)

ATTRIBUTE pcsHcaAppsNotReady

Description	This attribute indicates which LPs have applications which are not ready.
Values	String (0..320, ASCII)

ATTRIBUTE pcsHspPauseOptionIssued

Description	This attribute indicates that the *Activate Prov* command was issued with the *-pause* option.
Values	String (0..320, ASCII)

RESPONSE ...The hitlessActivation attribute under the ProvisioningSystem ActivationMode component must be set to disabled prior to performing service disruptive modifications.

Description	This response is issued during semantic check whenever conditions for a Hitless Critical Attribute activation or a Non-disruptive activation are not met.

ATTRIBUTE errorType

Description	This attribute indicates which type of activation is not permitted.
Values	Hitless Critical Attribute activation cannot occur. Reason(s): Non-disruptive Activation cannot occur. Reason(s):

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ATTRIBUTE addedComponents

Description	This attribute indicates the number of components added.
Values	Decimal (0..2147483647)

ATTRIBUTE deletedComponents

Description	This attribute indicates the number of components deleted.
Values	Decimal (0..2147483647)

ATTRIBUTE moduleCriticalAttributeList

Description	This attributes contains a list of modified attributes with a criticality of module.
List of	String (0..1024, ASCII)

ATTRIBUTE compOrProcCriticalAttributeList

Description	This attributes contains a list of modified attributes with a criticality of component or process.
List of	String (0..1024, ASCII)

ATTRIBUTE appRequestCriticalAttributeList

Description	This attributes contains a list of components for which software has marked critical.
List of	The name of the component

ATTRIBUTE nonHcaSupportAttributeList

Description	This attributes contains a list of modified attributes which do not support Hitless Critical Attribute Activation.
List of	String (0..1024, ASCII)

ATTRIBUTE lpsNonEquipmentProtectionSupport

Description	This attributes contains a list of LPs which do not support equipment protection.
List of	The name of the component
List Size	16

ATTRIBUTE hcaAttributeOnCpList

Description	This attributes contains a list of modified attributes which support HCA activation but reside on a Control Processor.
List of	String (0..1024, ASCII)

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RESPONSE Upon activation a Hitless Critical Attribute Activation will occur....

Description	This response is issued when a Hitless Critical Attribute activation is possible.

ATTRIBUTE lpsHcaCandidates

Description	This attributes contains a list of LPs which are HCA activation candidates. This attribute indicates the LPs which meet the configuration requirements for HCA activation.
List of	The name of the component
List Size	16

RESPONSE Error: The attribute doubleEmissionQSizes can not be set to a value of yes for ....

Description	The *Check Prov* command generates this response if the *doubleEmissionQSize* attribute is set to ***yes,*** and the Frame Relay interface is not *FrUni*. System action: An *Activate Prov* command will not be accepted until a subsequent check completes without errors. Operator action: *Set doubleEmissionQSize* to ***no***.

ATTRIBUTE frsDoubleEmissionQSizeUnSupportErrCmpnt

Description	This attribute indicates the component for which the *doubleEmissionQSize* attribute can not be set to ***yes***.
Values	The name of the component

RESPONSE Error:Feature ... must be set in the featureList of ... under ....

Description	A *check prov* will generate this response if the feature atmLrb under lp/n is not set. System action: The *check prov* command is not accepted until a valid value is provied. Operator action: Configure feature atmLrb in a feature list of lp/n.

ATTRIBUTE atmPnniLrbgFeatureName

Description	This attribute contains the feature name.
Values	String (0..6, ASCII)

ATTRIBUTE atmPnniLrbgSwLptName

Description	This attribute indicates the component name under which this feature is configured.
Values	The name of the component

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ATTRIBUTE atmPnniLrbgLpName

Description — This attribute indicates the component name to which 'sw lpt/n' is linked.

Values — The name of the component

RESPONSE On this type of card, setting of ... is not allowed.

Description — This response is triggered when thresholds ***txCellDiscardThreshold***, ***rxCellDiscardThreshold***, ***txFrameDiscardThreshold***, and ***rxFrameDiscardThreshold*** under the ATM interface is set on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pDS3Atm***, ***3pE3Atm***, ***3pDS1Atm***, ***3pE1Atm***, ***8pDS1Atm***, ***8pE1Atm***, and ***2pJ6MAtm*** cards.

ATTRIBUTE atmDiscardThreshold

Description — This attribute contains the name of threshold for ATM Discard Alarm. The name of thresholds are ***txCellDiscardThreshold***, ***rxCellDiscardThreshold***, ***txFrameDiscardThreshold***, and ***rxFrameDiscardThreshold***.

Values — String (0..49, ASCII)

RESPONSE On this type of card, setting of ... is not allowed.

Description — This response is triggered when thresholds ***txCellDiscardThreshold***, ***rxCellDiscardThreshold***, ***txFrameDiscardThreshold***, and ***rxFrameDiscardThreshold*** under the ATM service category is set on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pDS3Atm***, ***3pE3Atm***, ***3pDS1Atm***, ***3pE1Atm***, ***8pDS1Atm***, ***8pE1Atm***, and ***2pJ6MAtm*** cards.

ATTRIBUTE atmCaDiscardThreshold

Description — This attribute contains the name of threshold for ATM Discard Alarm. The name of thresholds are ***txCellDiscardThreshold***, ***rxCellDiscardThreshold***, ***txFrameDiscardThreshold***, and ***rxFrameDiscardThreshold*** for different service category.

Values — String (0..49, ASCII)

RESPONSE Cannot test card pair ... which is not in a 1:1 or 1+1 sparing configuration running with full equipment protection.

Description — This response is generated when the user provisions a card pair that is not in a 1:1 or 1+1 spared configuration. Cards in 1:1 configuration are also checked for full Equipment Protection support. If the CP is specified, it is checked for hot CP equipment protection support. Card in 1+1 configuration are checked for LAPs sparing or LP group association. Unspared and 1:N spared cards are not supported for REX testing.

ATTRIBUTE invalidCardPair

Description — This is the invalid card pair specified for REX testing.

Values — Decimal (0..15)

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RESPONSE ...

Description — This response is issued during query REX.

ATTRIBUTE responseLastTestResult

Description — This attribute contains all the information about last run REX test.

Values — String (1..1024, ASCII)

ATTRIBUTE responseDowDetails

Description — This attribute contains provisioning details of DayOfWeek sub-components.

Values — String (1..2048, ASCII)

RESPONSE Warning:Packet loss may occur on ... if an Inter-Vr connection is enabled and this Vr is linked to a 2pGeMmSrVsp3 card or a 2pOC3ChSmIrVsp4e card.

Description — A *Check Prov* command generates this response when the *mode* attribute of the *Vm If* component is ***inter-VrConnection***, and this *Vr* is linked to a '***2pGeMmSrVsp3***' card or a '***2pOC3ChSmIrVsp4e***' card.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE lpComponent

Description — This attribute indicates the name of the Lp which linked to VSP3 card

Values — The name of the component

RESPONSE Error: On this card, the value of the attribute perVcQueueLimitReferenceRate must not exceed ....

Description — The check prov generaes this response if the ATM service category perVcQueueLimitReferenceRate is set to a value beyond the value supported on a card.

ATTRIBUTE perVcQLimitRefRate

Description — This contains the maximum value of the ATM service category perVcQueueLimitReferenceRate on a card.

Values — Decimal (0..5651320)

RESPONSE Error:... is not allowed on this Virtual Router

Description — The *Check Prov* command produces this response when a protocol which is permitted only on the Management Virtual Router has been added to a Virtual Router whose *managementAccess* attribute is ***disabled***.

ATTRIBUTE invalidProtocol

Description — Indicates the invalid protocol.

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Values String (1..20, ASCII)

RESPONSE Error:Attribute ... under ... must be set.

Description A *check prov* will generate this response if the *attribute* under a link is not set.

System action: The *check prov* command is not accepted until a valid value is provied.

Operator action: Provide a valid value for the attribute under a link.

ATTRIBUTE atmPnniLrbgLinkAttr

Description This attribute contains the numeric identifier of the attribute that should be provisioned.

Values Decimal (0..65535)

ATTRIBUTE atmPnniLrbgLinkName

Description This attribute indicates the component name under which a certain attribute should be provisioned.

Values The name of the component

RESPONSE Error:Attribute ... under ... is different between ... and ....

Description A *check prov* will generate this response if the attribute is different between two links of one group.

System action: The *check prov* command is not accepted until the attribute of all links of one group is same.

Operator action: Make the attribute of all links of one group same.

ATTRIBUTE atmPnniLrbgLinkDiffAttr

Description This attribute contains the numeric identifier of the attribute that is different between two links

Values Decimal (0..65535)

Replication The name of the component

ATTRIBUTE atmPnniLrbgLinkDiffParent

Description This attribute indicates the component name under which a certain attribute should be same.

Values The name of the component

ATTRIBUTE atmPnniLrbgLink1Name

Description This attribute indicates the component name under which a certain attribute should be same.

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Values — The name of the component

ATTRIBUTE atmPnniLrbgLink2Name

Description — This attribute indicates the component name under which a certain attribute should be same.

Values — The name of the component

RESPONSE Error:The attribute ... cannot be set to value .... This value is currently not available.

Description — A *Check Prov* command generates this response if the value specified for the *defaultToneset or toneset* attribute is set to any of the custom values.

System action: The *Check Prov* command fails. No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Ensure that the *defaultToneset or toneset* attribute is reprovisioned with another value.

ATTRIBUTE invalidAttribute

Description — This attribute contains the toneset attribute which is in error.

Values — Decimal (1..65535)

ATTRIBUTE invalidValue

Description — This attribute contains the actual toneset value entered by the user.

Values —
Custom1
Custom2
Custom3
Custom4
Custom5
Hungary
Norway
Finland
Denmark
Bolivia
SouthAfrica

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RESPONSE Warning:Changes to attributes under this component require LCP to reconfigure. A Lock and Unlock of the associated Channel component or ... is required.

Description — The *Check Prov* command generates this response when an attribute is changed which requires LCP to reconfigure in order to use the new value.

System action: A *Check Prov* command passes and the warning is generated. The new value will only be used when LCP configuration occurs.

Operator Action: After the activation is complete perform a *Lock* and then an *Unlock* of the associated *Channel* component or *Ppp/Piwf* component to force LCP to reconfigure.

ATTRIBUTE pppRootLevelComponentType

Description — This attribute represents the root level component that must be locked and unlocked.

Values — The name of the component

RESPONSE Error:This Proposal is identical to ....

Description — A *Check Prov* command produces this response when this *Proposal* is identical to the specified *Proposal*.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: remove one of the identical *Proposal* components.

ATTRIBUTE identicalIpSecProposal

Description — The attribute indicates the identical IpSec *Proposal*.

Values — The name of the component

RESPONSE Error:This policy is identical to ....

Description — A *Check Prov* command produces this response when this *Policy* is identical to the specified *Policy*.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: remove one of the identical *Policy* components.

ATTRIBUTE identicalIkePolicy

Description — The attribute indicates the identical *Policy*.

Values — The name of the component

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RESPONSE Error:This Proposal is identical to ....

Description — A *Check Prov* command produces this response when this *Proposal* is identical to the specified *Proposal*.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: remove one of the identical *Proposal* components.

ATTRIBUTE identicalIkeProposal

Description — The attribute indicates the identical IKE *Proposal*.

Values — The name of the component

RESPONSE Error:Exceeded maximum number of Vr components.

Description — The *Check Prov* command produces this response when the maximum number of allowable *Vr* components has been exceeded. Delete all *Vr* components which are in excess of the maximum allowed.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Delete *Vr* which are in excess of the maximum allowed

ATTRIBUTE maxAllowedVrs

Description — The maximum number of provisionable *Vr* components.

Values — Decimal (0..65535)

ATTRIBUTE currentProvisionedVrs

Description — The current number of provisioned *Vr* components.

Values — Decimal (0..65535)

RESPONSE Warning:A Delete of the Override subcomponent requires LCP to reconfigure. A Lock and Unlock of the associated Channel component or ... is required.

Description — The *Check Prov* command generates this response when the *Override* component is deleted.

This requires LCP to reconfigure in order to use the default values.

System action: The *Check Prov* command passes, but the default values will only be used when LCP configuration occurs.

Operator Action: After the activation is complete perform a *Lock* and then an *Unlock* of the associated *Channel* component or *Ppp/Piwf* component to force LCP to reconfigure.

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ATTRIBUTE mlpppRootLevelComponentType

Description — This attribute represents the root level component that must be locked and unlocked.

Values — The name of the component

RESPONSE The current view file ... has been corrupted and cannot be committed. Use the -file option and commit a new file.

Description — The *Commit Prov* command generates this response when the current view file which is being committed has been corrupted.

System action: the command fails.
Operator action: retry the command,specifying the -file option.

ATTRIBUTE file

Description — This attribute is the name of the file being committed.

Values — String (1..40, ASCII)

RESPONSE Warning: Reason:Setting the ... attribute as non-blank for the standby CP may cause a card reset.

Description — The *check prov* command produces this response when the *Shelf Card/n configuredProductCode* attribute for the standby CP is provisioned to a non-blank value.

ATTRIBUTE pcsConfProductCodeAttribWarnResp

Description — This attribute specifies the attribute name that is set to a product code.

Values — Decimal (0..4294967295)

RESPONSE Error:Reason: The ... attribute cannot be provisioned to a non-default value which does not match with the inserted product engineering code for the active CP.

Description — The *check prov* command produces this response when the *Shelf Card/n configuredProductCode* attribute for the acive CP is provisioned with a value which does not match with inserted product engineering code.

ATTRIBUTE pcsConfProductCodeAttribErrResp

Description — This attribute specifies the attribute name that is set to an erroneous product code.

Values — Decimal (0..4294967295)

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RESPONSE Error:Setting attribute ... is not allowed.

Description

A *set command* generates this response if any of the attributes *tone1CustomValue, tone2CustomValue, tone3CustomValue, tone4CustomValue* and *tone5CustomValue* is set to any value.

System action: The *set command* command fails. No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Ensure that the attributes *tone1CustomValue, tone2CustomValue, tone3CustomValue, tone4CustomValue* and *tone5CustomValue* are not set to any value.

ATTRIBUTE customTonesetAttribute

Description — This attribute contains the custom tone value which cannot be set.

Values — Decimal (1..65535)

RESPONSE Hop ...: ... (time = ...)

Description — The ping command generates this response for each successful hop detected while performing a traceroute.

ATTRIBUTE ipAddr

Description — This attribute indicates the IP address of the remote host.

Values — IP address

ATTRIBUTE time

Description — This attribute indicates the round trip time of a ICMP ECHO request.

Values — Decimal (0..4294967295)

ATTRIBUTE hopno

Description — This attribute indicates the current hop number.

Values — Decimal (0..4294967295)

RESPONSE Hop ...: (failed)

Description — The ping command generates this response for each hop not responding while performing a traceroute.

ATTRIBUTE hopno

Description — This attribute indicates the current hop number.

Values — Decimal (0..4294967295)

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RESPONSE Ip Trace Route for ...:Path Taken:

Description — The *Ping* command generates this response to indicate that the traceroute to the specified IP address was successful and will be followed by the hop list.

ATTRIBUTE ipAddr

Description — This attribute indicates the IP address of the remote host.

Values — IP address

RESPONSE Destination ... is not responding after ... attempt(s).

Description — The *Ping* command generates this response to indicate that the ping to the specified IP address was unsuccessful because the host failed to reply with a valid ICMP response within 5 seconds.

ATTRIBUTE ipAddr

Description — This attribute indicates the IP address of the remote host.

Values — IP address

ATTRIBUTE retry

Description — This attribute indicates the number of attempts taken to ping a host.

Values — Decimal (0..4294967295)

RESPONSE Error:Attribute ... localHostDeviceTopology is set to a value other than layer3 and requires that attribute ... losDuringMigration be set to disabled.

Description

A *Check Porv* command generates this response when attribute ‘Vr custSpec localHostDeviceTopology’ is set to a value other than layer3 while its associated ‘Ip ethernet losDuringMigration’ is set to enabled.

System action: An *Activate Prov* command will not be accepted until a subsequent check completes without errors.

Operator Action: Set attributes ‘losDuringMigration’ and Vr CustSpeclosDuringMigration to the correct values or set attribute ‘losDuringMigration’ to disabled and delete attribute Vr CustSpec.

ATTRIBUTE vrComponentName

Description — This attribute represents Vr custSpec localHostDeviceTopology that is associated with this Ip ethernet.

Values — The name of the component

ATTRIBUTE IpEthernetComponentName

Description — This attribute represents the Ip ethernet component of the losDuringMigration attribute.

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Values The name of the component

RESPONSE Error:Attribute ... localHostDeviceTopologyis set to layer3 and requires that the attribute ... losDuringMigration be set to enabled.

Description

A *Check Porv* command generates this response when attribute 'Vr custSpec localHostDeviceTopology' is set to layer3 while its associated 'Ip ethernet losDuringMigration' is set to disabled.

System action: An *Activate Prov* command will not be accepted until a subsequent check completes without errors.

Operator Action: Set attributes 'losDuringMigration' and 'Vr CustSpeclosDuringMigration' to the correct values or set attribute 'losDuringMigration' to disabled and delete attribute 'Vr CustSpec'.

ATTRIBUTE vrComponentName

Description This attribute represents Vr custSpec localHostDeviceTopology that is associated with this Ip ethernet.

Values The name of the component

ATTRIBUTE IpEthernetComponentName

Description This attribute represents the Ip ethernet component of the losDuringMigration attribute.

Values The name of the component

RESPONSE Error:Attribute ... losDuringMigration is set to a value of enabledand requires that the attribute ... customizationType be set topvg.

Description

A *Check Porv* command generates this response when attribute 'losDuringMigration' is set to enabled when its associated 'Vr custSpec customizationType' attribute is not provisioned to PVG.

System action: An *Activate Prov* command will not be accepted until a subsequent check completes without errors.

Operator Action: Set attributes 'losDuringMigration' and 'Vr CustSpec customizationType' to the correct values or set attribute 'losDuringMigration' to disabled and delete attribute 'Vr CustSpec'.

ATTRIBUTE vrComponentName

Description This attribute represents Vr custSpec localHostDeviceTopology that is associated with this Ip ethernet.

Values The name of the component

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ATTRIBUTE lpEthernetComponentName

Description	This attribute represents the lp ethernet component of the losDuringMigration attribute.
Values	The name of the component

RESPONSE Error: The value of the attribute cacheTableSize cannot be more than ... for Lp/0.

Description	The *Check Prov* command produces this response when the value of the attribute *cacheTableSize* for *Lp/0* under a *Router*/*Router Vrf* is greater than ***500***. System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until the value of the attribute *cacheTableSize* for *Lp/0* under a *Router*/*Router Vrf* is set less than or equal to 500. Operator action: Ensure that the value of the attribute *cacheTableSize* for *Lp/0* under a *Router/Router Vrf* is set less than or equal to ***500***.

ATTRIBUTE maxIpCpCacheSize

Description	This attribute contains the maximum cache table size allowed on the Cp.
Values	Decimal (0..65535)

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Collected Statistics

COLLECTED STATS Router VpnRouteForwarder Interface IngressServices MeterStatistics

Description	The statistics record generated by the Router VpnRouteForwarder Interface IngressServices MeterStatistics component.

ATTRIBUTE Rtr Vrf If IS Meter **committedInformationRate (cir)**

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr Vrf If IS Meter **excessInformationRate (eir)**

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter **committedBurstSize (bc)**

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

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ATTRIBUTE Rtr Vrf If IS Meter **excessBurstSize (be)**

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter **measurmentInterval (t)**

Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Values	Decimal (0..4294967295)

ATTRIBUTE Rtr Vrf If IS Meter **packetsReceived**

Description	This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.
Values	Long Integer

ATTRIBUTE Rtr Vrf If IS Meter **octetsReceived**

Description	This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess
Values	Long Integer

ATTRIBUTE Rtr Vrf If IS Meter **eirPacketsReceived (excessPackets)**

Description	This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If IS Meter **eirOctetsReceived (excessOctets)**

Description	This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If IS Meter **packetsRemarked**

Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

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Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS Router VpnRouteForwarder Interface EgressServices MeterStatistics

Description The statistics record generated by the Router VpnRouteForwarder Interface EgressServices MeterStatistics component.

ATTRIBUTE Rtr Vrf If ES Meter committedInformationRate (cir)

Description This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.
The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..600000000)

ATTRIBUTE Rtr Vrf If ES Meter excessInformationRate (eir)

Description This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Values Decimal (0..50000000)

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ATTRIBUTE Rtr Vrf If ES Meter **committedBurstSize (bc)**

Description — This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..600000000)

ATTRIBUTE Rtr Vrf If ES Meter **excessBurstSize (be)**

Description — This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter **measurmentInterval (t)**

Description — This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values — Decimal (0..4294967295)

ATTRIBUTE Rtr Vrf If ES Meter **packetsReceived**

Description — This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values — Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **octetsReceived**

Description — This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values — Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **eirPacketsReceived (excessPackets)**

Description — This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **eirOctetsReceived (excessOctets)**

Description — This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

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Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter packetsRemarked

Description This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS Router VpnRouteForwarder ControlPlaneProtection

Description The statistics record generated by the Router VpnRouteForwarder ControlPlaneProtection component.

ATTRIBUTE Rtr Vrf Cpp isolatedDa

Description This attribute indicates the ip address of the isolated locally destined DA.

Values IP address

ATTRIBUTE Rtr Vrf Cpp isolatedLp

Description This attribute indicates the LP number on which the locally destined address is being isolated.

Values Decimal (0..15)

ATTRIBUTE Rtr Vrf Cpp isolatedCounts

Description This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values Decimal (0..65535)

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ATTRIBUTE Rtr Vrf Cpp **averageFlowRate**

Description — This attribute indicates the average flow rate of the isolated DA during the isolation period.

Values — Decimal (0..65535)

COLLECTED STATS Router Interface IngressServices MeterStatistics

Description — The statistics record generated by the Router Interface IngressServices MeterStatistics component.

ATTRIBUTE Rtr If IS Meter **committedInformationRate (cir)**

Description — This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.
The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..600000000)

ATTRIBUTE Rtr If IS Meter **excessInformationRate (eir)**

Description — This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Values — Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter **committedBurstSize (bc)**

Description — This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..600000000)

ATTRIBUTE Rtr If IS Meter **excessBurstSize (be)**

Description — This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter **measurmentInterval (t)**

Description — This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc*

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attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values — Decimal (0..4294967295)

ATTRIBUTE Rtr If IS Meter packetsReceived

Description — This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values — Long Integer

ATTRIBUTE Rtr If IS Meter octetsReceived

Description — This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values — Long Integer

ATTRIBUTE Rtr If IS Meter eirPacketsReceived (excessPackets)

Description — This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr If IS Meter eirOctetsReceived (excessOctets)

Description — This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr If IS Meter packetsRemarked

Description — This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr If IS Meter octetsRemarked

Description — This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr If IS Meter packetsDiscarded

Description — This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

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Values Long Integer

ATTRIBUTE Rtr If IS Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS Router Interface EgressServices MeterStatistics

Description The statistics record generated by the Router Interface EgressServices MeterStatistics component.

ATTRIBUTE Rtr If ES Meter committedInformationRate (cir)

Description This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.
The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..600000000)

ATTRIBUTE Rtr If ES Meter excessInformationRate (eir)

Description This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Values Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter committedBurstSize (bc)

Description This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..600000000)

ATTRIBUTE Rtr If ES Meter excessBurstSize (be)

Description This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

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ATTRIBUTE Rtr If ES Meter **measurmentInterval (t)**

Description — This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values — Decimal (0..4294967295)

ATTRIBUTE Rtr If ES Meter **packetsReceived**

Description — This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values — Long Integer

ATTRIBUTE Rtr If ES Meter **octetsReceived**

Description — This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values — Long Integer

ATTRIBUTE Rtr If ES Meter **eirPacketsReceived (excessPackets)**

Description — This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr If ES Meter **eirOctetsReceived (excessOctets)**

Description — This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr If ES Meter **packetsRemarked**

Description — This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr If ES Meter **octetsRemarked**

Description — This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

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Values Long Integer

ATTRIBUTE Rtr If ES Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If ES Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS Router ControlPlaneProtection

Description The statistics record generated by the Router ControlPlaneProtection component.

ATTRIBUTE Rtr Cpp isolatedDa

Description This attribute indicates the ip address of the isolated locally destined DA.

Values IP address

ATTRIBUTE Rtr Cpp isolatedLp

Description This attribute indicates the LP number on which the locally destined address is being isolated.

Values Decimal (0..15)

ATTRIBUTE Rtr Cpp isolatedCounts

Description This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values Decimal (0..65535)

ATTRIBUTE Rtr Cpp averageFlowRate

Description This attribute indicates the average flow rate of the isolated DA during the isolation period.

Values Decimal (0..65535)

COLLECTED STATS LogicalProcessor

Description The statistics record generated by the LogicalProcessor component.

ATTRIBUTE Lp cardNumber (ca)

Description This attribute is the card number associated to this statistical information.

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Values	Decimal (0..15)

ATTRIBUTE Lp cardStatus

Description	This attribute indicates whether the card is running as ***active*** or ***standby***.
Values	standby active

ATTRIBUTE Lp cpuUtilAvg

Description	This attribute indicates an average processor utilization level over a the specified collection interval. This average is calculated based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp cpuUtilAvgMin

Description	This attribute indicates the minimum processor utilization level over a specified collection interval. This is calculated based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp cpuUtilAvgMax

Description	This attribute indicates the maximum processor utilization level over a specified collection interval. This is based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp memoryCapacity

Description	This attribute indicates the processor's memory capacity for each type of memory.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

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ATTRIBUTE Lp memoryUsageAvg

Description	This attribute indicates the processor's average memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvgMin

Description	This attribute indicates the processor's minimum memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvgMax

Description	This attribute indicates the processor's maximum memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp sharedMsgBlockCapacity

Description	This attribute indicates the processor's shared message block memory capacity.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvg

Description	This attribute indicates the processor's average shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)

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Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvgMin

Description	This attribute indicates the processor's minimum shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvgMax

Description	This attribute indicates the processor's maximum shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockCapacity

Description	This attribute indicates the processor's local message block memory capacity. These message blocks are used for local messaging on the card.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageAvg

Description	This attribute indicates the processor's average memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageMin

Description	This attribute indicates the processor's minimum memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageMax

Description	This attribute indicates the processor's maximum memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval.
Values	Decimal (0..2147483647)

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Units kbyte

COLLECTED STATS LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock

Description The statistics record generated by the LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock component.

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilAvg (avg)

Description This attribute indicates the average PBlock CPU load during the statistics collection interval.

Values Decimal (0..100)

Units %

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMin (min)

Description This attribute indicates the minimum PBlock CPU load during the statistics collection interval.

Values Decimal (0..100)

Units %

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMax (max)

Description This attribute indicates the maximum PBlock CPU load during the statistics collection interval.

Values Decimal (0..100)

Units %

COLLECTED STATS Collector

Description The statistics record generated by the Collector component.

ATTRIBUTE Col oldDateTime

Description This attribute shows the old date/time immediately prior to the time change.

Values Time (DHMS)

ATTRIBUTE Col newDateTime

Description This attribute shows the new date/time immediately after the time change.

Values Time (DHMS)

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COLLECTED STATS VoiceNetworkingCallServer

Description	The statistics record generated by the VoiceNetworkingCallServer component.

ATTRIBUTE Vncs totalTranslations

Description	This spooled statistic counts the number of translation requests received by *Vncs* in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vncs completeTranslations

Description	This spooled statistic counts the number of completed translations handled under each *DiallingPlan* component in the last statistics collection interval. The complete translations are the one that resulted in the return by VNCS server of the reply message with the routing information and *VoiceProfile* parameters associated with the directory number prefix supplied in the translation request message.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs incompleteTranslations

Description	This spooled statistic counts the number of incomplete translations handled under each *DiallingPlan* component in the last statistics collection interval. The incomplete translations are the one that require more digits in the directory number prefix to uniquely identify routing attributes.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs failedTranslations

Description	This spooled statistic counts the number of failed translations handled under this *DiallingPlan* component in the last statistics collection interval. The failed translations are the one for which the directory number prefix could not be found in the database.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs usageCount

Description	This spooled statistic counts the number of times each *VoiceProfile* useage count is accessed to set up a connection in the last statistics collection interval.
Vector of	Decimal (0..65535)
Index	Decimal (1..64)

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COLLECTED STATS Trunk

Description — The statistics record generated by the Trunk component.

ATTRIBUTE Trk remoteComponentName (remote)

Description — This attribute is the component name of the remote end which it has supplied through the *Trunk* staging protocol.

Values — String (1..26, ASCII)

ATTRIBUTE Trk measuredSpeedTolfMax

Description — This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.

Values — Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedTolfMin

Description — This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.

Values — Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedTolfCurrent

Description — This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.

Values — Decimal (0..4294967295)

ATTRIBUTE Trk measuredRoundTripDelayMax

Description — This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.

Values — Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayMin

Description — This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.

Values — Decimal (0..1500)

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ATTRIBUTE Trk measuredRoundTripDelayCurrent

Description — This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.

Values — Decimal (0..1500)

ATTRIBUTE Trk porsNormPktFromIf (normPkt)

Description — This attribute counts the number of normal priority packets received on the PORS *Trunk* normal priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsNormDiscUnforwardFromIf (normDisc)

Description — This attribute counts the number of normal priority packets discarded from the PORS *Trunk* normal priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsNormOctetFromIf (normOctet)

Description — This attribute counts the number of normal priority bytes received on the PORS *Trunk* normal priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsIntPktFromIf (intPkt)

Description — This attribute counts the number of interrupting priority packets received on the PORS *Trunk* interrupting priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsIntDiscUnforwardFromIf (intDisc)

Description — This attribute counts the number of interrupting priority packets discarded from the PORS *Trunk* interrupting priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsIntOctetFromIf (intOctets)

Description — This attribute counts the number of interrupting priority bytes received on the PORS *Trunk* interrupting priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk remoteComponentName (remote)

Description — This attribute is the component name of the remote end which it has supplied through the *Trunk* or *DpnGateway* staging protocol.

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Values String (1..26, ASCII)

ATTRIBUTE Trk measuredSpeedToIfMax

Description This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfMin

Description This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfCurrent

Description This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE Trk measuredRoundTripDelayMax

Description This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.

Values Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayMin

Description This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.

Values Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayCurrent

Description This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.

Values Decimal (0..1500)

ATTRIBUTE Trk fwdPktFromIf (fwdPkt)

Description This attribute counts the number of forwarding packets received on the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values Long Integer

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ATTRIBUTE Trk fwdDiscUnforwardFromIf (fwdDisc)

Description: This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values: Long Integer

ATTRIBUTE Trk fwdOctetFromIf (fwdOctet)

Description: This attribute counts the number of forwarding bytes received on the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values: Long Integer

ATTRIBUTE Trk dprsPktFromIfByPrio (dprsPktBp)

Description: This attribute counts the number of DPRS packets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of: Long Integer

Row: ep [ep0
ep1
ep2]

Column: dp [dp0
dp1
dp2
dp3]

ATTRIBUTE Trk dprsDiscPktFromIfByPrio (dprsDiscBp)

Description: This attribute counts the number of DPRS packets received and discarded by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of: Long Integer

Row: ep [ep0
ep1
ep2]

Column: dp [dp0
dp1
dp2
dp3]

ATTRIBUTE Trk dprsOctetFromIfByPrio (dprsOctBp)

Description: This attribute counts the number of DPRS octets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission

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priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

ATTRIBUTE Trk porsPktFromIfByPrio (porsPktBp)

Description: This attribute counts the number of PORS packets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

ATTRIBUTE Trk porsDiscPktFromIfByPrio (porsDiscBp)

Description: This attribute counts the number of PORS packets received and discarded by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

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ATTRIBUTE Trk porsOctetFromIfByPrio (porsOctBp)

Description	This attribute counts the number of PORS octets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]

COLLECTED STATS Trunk UnAcked Framer

Description	The statistics record generated by the Trunk UnAcked Framer component.

ATTRIBUTE Trk UnAcked Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk UnAcked Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk UnAcked Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Trk UnAcked Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

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ATTRIBUTE Trk UnAcked Framer **rxTotalLinkUtil**

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS Trunk AtmAccess

Description — The statistics record generated by the Trunk AtmAccess component.

ATTRIBUTE Trk Atm **interfaceName (interface)**

Description — This attribute indicates the component name of the local ATM Layer 2 AAL5 interface that the *AtmAccess* component uses.

Values — String (1..45, ASCII)

ATTRIBUTE Trk Atm **txCell**

Description — This attribute counts the number of cells that have been transmitted to the interface on the *Vcc* in the last collection interval.

Values — Long Integer

Units — cells

ATTRIBUTE Trk Atm **txCellClp**

Description — This attribute counts the number of cells that have been transmitted to the interface on the *Vcc* with the CLP=1 in the last collection interval.

Values — Long Integer

Units — cells

ATTRIBUTE Trk Atm **txDiscard**

Description — This attribute counts the number of cells or frames received from the bus on the *Vcc* that have been discarded (due to congestion or when the *Vcc* interface is disabled) in the last collection interval.

Values — Long Integer

ATTRIBUTE Trk Atm **txDiscardClp**

Description — This attribute counts the number of cells or frames received from the bus on the *Vcc* with the CLP=1 that have been discarded (due to congestion or when the *Vcc* interface is disabled) in the last collection interval.

Values — Long Integer

ATTRIBUTE Trk Atm **rxCell**

Description — This attribute counts the number of cells that have been received from the interface on the *Vcc* in the last collection interval.

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Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm rxCellClp

Description	This attribute counts the number of cells that have been received from the interface on the *Vcc* with the CLP=1 in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm rxDiscard

Description	This attribute counts the number of cells or frames received from the interface on the *Vcc* that have been discarded (due to congestion, non-conformance with UPC or AAL reassembly problems) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm rxDiscardClp

Description	This attribute counts the number of cells or frames received from the interface on the *Vcc* with the CLP=1 that have been discarded (due to congestion, non-conformance with UPC or AAL reassembly problems) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm txCellRateMax

Description	This attribute indicates the maximum transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txCellRateMin

Description	This attribute indicates the minimum transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txCellRateAvg

Description	This attribute indicates the average transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Trk Atm txClpCellRateMax

Description	This attribute indicates the maximum transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateMin

Description	This attribute indicates the minimum transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateAvg

Description	This attribute indicates the average transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateMax

Description	This attribute indicates the maximum receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateMin

Description	This attribute indicates the minimum receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateAvg

Description	This attribute indicates the average receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateMax

Description	This attribute indicates the maximum receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.

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Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateMin

Description	This attribute indicates the minimum receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateAvg

Description	This attribute indicates the average receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxTotalVccUtil

Description	This attribute indicates the average total receive *Vcc* utilization computed based on comparing the total number of cells received on the *Vcc* with the estimated available bandwidth in the last collection interval.
Values	Decimal (0..200)
Units	%

ATTRIBUTE Trk Atm txTotalVccUtil

Description	This attribute indicates the average total transmitted *Vcc* utilization computed based on comparing the total number of cells transmitted on the *Vcc* with the estimated available bandwidth in the last collection interval.
Values	Decimal (0..200)
Units	%

COLLECTED STATS DpnGateway

Description	The statistics record generated by the DpnGateway component.

ATTRIBUTE DpnGate remoteComponentName (remote)

Description	This attribute is the component name of the remote end which it has supplied through the *Trunk* or *DpnGateway* staging protocol.
Values	String (1..26, ASCII)

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ATTRIBUTE DpnGate measuredSpeedToIfMax

Description — This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.

Values — Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredSpeedToIfMin

Description — This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.

Values — Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredSpeedToIfCurrent

Description — This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.

Values — Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredRoundTripDelayMax

Description — This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.

Values — Decimal (0..1500)

ATTRIBUTE DpnGate measuredRoundTripDelayMin

Description — This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.

Values — Decimal (0..1500)

ATTRIBUTE DpnGate measuredRoundTripDelayCurrent

Description — This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.

Values — Decimal (0..1500)

ATTRIBUTE DpnGate fwdPktFromIf (fwdPkt)

Description — This attribute counts the number of forwarding packets received on the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values — Long Integer

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ATTRIBUTE DpnGate fwdDiscUnforwardFromIf (fwdDisc)

Description — This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE DpnGate fwdOctetFromIf (fwdOctet)

Description — This attribute counts the number of forwarding bytes received on the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values — Long Integer

COLLECTED STATS DpnGateway Utp Framer

Description — The statistics record generated by the DpnGateway Utp Framer component.

ATTRIBUTE DpnGate Utp Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE DpnGate Utp Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE DpnGate Utp Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DpnGate Utp Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DpnGate Utp Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

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COLLECTED STATS FrameRelayNni Framer

Description The statistics record generated by the FrameRelayNni Framer component.

ATTRIBUTE FrNni Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrNni Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrNni Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrNni Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrNni Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS FrameRelayUni Framer

Description The statistics record generated by the FrameRelayUni Framer component.

ATTRIBUTE FrUni Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrUni Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

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Values Long Integer

ATTRIBUTE FrUni Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrUni Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrUni Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS FrameRelayAtmInterface Framer

Description The statistics record generated by the FrameRelayAtmInterface Framer component.

ATTRIBUTE FrAtm Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrAtm Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrAtm Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrAtm Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

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Values Long Integer

ATTRIBUTE FrAtm Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS VoiceService Framer

Description The statistics record generated by the VoiceService Framer component.

ATTRIBUTE Vs Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Vs Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Vs Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Vs Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Vs Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS BitTransparentDataService Framer

Description The statistics record generated by the BitTransparentDataService Framer component.

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ATTRIBUTE Btds Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Btds Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Btds Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Btds Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Btds Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS HdlcTransparentDataService Framer

Description — The statistics record generated by the HdlcTransparentDataService Framer component.

ATTRIBUTE Htds Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Htds Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

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ATTRIBUTE Htds Framer **txBytes**

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Htds Framer **txFrames**

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Htds Framer **rxTotalLinkUtil**

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS X25Dte Lapb Framer

Description — The statistics record generated by the X25Dte Lapb Framer component.

ATTRIBUTE X25Dte Lapb Framer **rxBytes**

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE X25Dte Lapb Framer **rxFrames**

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE X25Dte Lapb Framer **txBytes**

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE X25Dte Lapb Framer **txFrames**

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

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ATTRIBUTE X25Dte Lapb Framer **rxTotalLinkUtil**

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics

Description — The statistics record generated by the VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics component.

ATTRIBUTE Vr Pp IpPort IS Meter **committedInformationRate (cir)**

Description — This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.
The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..600000000)

ATTRIBUTE Vr Pp IpPort IS Meter **excessInformationRate (eir)**

Description — This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Values — Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter **committedBurstSize (bc)**

Description — This attribute indicates the committed burst size (bc) in bits for the *Meter*.
The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..600000000)

ATTRIBUTE Vr Pp IpPort IS Meter **excessBurstSize (be)**

Description — This attribute indicates the excess burst size (be) in bits for the *Meter*.
The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter **measurmentInterval (t)**

Description — This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc*

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attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values — Decimal (0..4294967295)

ATTRIBUTE Vr Pp IpPort IS Meter **packetsReceived**

Description — This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **octetsReceived**

Description — This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values — Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **eirPacketsReceived (excessPackets)**

Description — This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **eirOctetsReceived (excessOctets)**

Description — This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **packetsRemarked**

Description — This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **octetsRemarked**

Description — This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **packetsDiscarded**

Description — This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

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Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **octetsDiscarded**

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics

Description The statistics record generated by the VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics component.

ATTRIBUTE Vr Pp IpPort ES Meter **committedInformationRate (cir)**

Description This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.
The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..600000000)

ATTRIBUTE Vr Pp IpPort ES Meter **excessInformationRate (eir)**

Description This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter **committedBurstSize (bc)**

Description This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..600000000)

ATTRIBUTE Vr Pp IpPort ES Meter **excessBurstSize (be)**

Description This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

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ATTRIBUTE Vr Pp IpPort ES Meter **measurmentInterval (t)**

Description — This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values — Decimal (0..4294967295)

ATTRIBUTE Vr Pp IpPort ES Meter **packetsReceived**

Description — This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **octetsReceived**

Description — This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **eirPacketsReceived (excessPackets)**

Description — This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **eirOctetsReceived (excessOctets)**

Description — This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **packetsRemarked**

Description — This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **octetsRemarked**

Description — This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

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Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS VirtualRouter Ip ControlPlaneProtection

Description The statistics record generated by the VirtualRouter Ip ControlPlaneProtection component.

ATTRIBUTE Vr Ip Cpp isolatedDa

Description This attribute indicates the ip address of the isolated locally destined DA.

Values IP address

ATTRIBUTE Vr Ip Cpp isolatedLp

Description This attribute indicates the LP number on which the locally destined address is being isolated.

Values Decimal (0..15)

ATTRIBUTE Vr Ip Cpp isolatedCounts

Description This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values Decimal (0..65535)

ATTRIBUTE Vr Ip Cpp averageFlowRate

Description This attribute indicates the average flow rate of the isolated DA during the isolation period.

Values Decimal (0..65535)

COLLECTED STATS VirtualRouter Ip Rtd

Description The statistics record generated by the VirtualRouter Ip Rtd component.

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ATTRIBUTE Vr Ip Rtd localNodeIdentifier

Description	This attribute identifies the node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData*.
Values	Decimal (256..49151)

ATTRIBUTE Vr Ip Rtd ipVcgInstance

Description	This attribute indicates which VCG VR generated the statistics record
Values	String (1..16, ASCII)

ATTRIBUTE Vr Ip Rtd localVcgIpAddress

Description	This attribute indicates the VCG loopback IP address of the VCG VR that generated the statistics record.
Values	IP address

ATTRIBUTE Vr Ip Rtd remoteVcgIpAddress

Description	This attribute indicates the remote VCG destination address that will have the delays measured.
Values	IP address

ATTRIBUTE Vr Ip Rtd framesSent

Description	This attribute contains the number of frames transmitted by the *Virtual Carrier Gateway* during the latest interval.
Vector of	Decimal (1..5)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd framesReceived

Description	This attribute contains the number of frames received by the *Virtual Carrier Gateway during* the collection interval.
Vector of	Decimal (1..5)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample1StartTime

Description	This attribute represents the timestamp when the first sample was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

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ATTRIBUTE Vr Ip Rtd RoundTripDelays1

Description	This attribute indicates an array of round trip delays for the first sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample2StartTime

Description	This attribute represents the timestamp when the second sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay2

Description	This attribute indicates an array of round trip delays for the second sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3)
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample3StartTime

Description	This attribute represents the timestamp when the third sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay3

Description	This attribute indicates an array of round trip delays for the third sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3)
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample4StartTime

Description	This attribute represents the timestamp when the fourth sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

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ATTRIBUTE Vr Ip Rtd RoundTripDelay4

Description	This attribute indicates an array of round trip delays for the fourth sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample5StartTime

Description	This attribute represents the timestamp when the fifth sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay5

Description	This attribute indicates an array of round trip delays for the fifth sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

COLLECTED STATS PointToPointProtocol Framer

Description	The statistics record generated by the PointToPointProtocol Framer component.

ATTRIBUTE Ppp Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Ppp Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Ppp Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

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ATTRIBUTE Ppp Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Ppp Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS PointToPointProtocol MlpppFramer

Description — The statistics record generated by the PointToPointProtocol MlpppFramer component.

ATTRIBUTE Ppp MIFramer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Ppp MIFramer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Ppp MIFramer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Ppp MIFramer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Ppp MIFramer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

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Values Decimal (0..100)

COLLECTED STATS FrMux Framer

Description The statistics record generated by the FrMux Framer component.

ATTRIBUTE FrMux Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrMux Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrMux Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrMux Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrMux Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS AtmInterface

Description The statistics record generated by the AtmInterface component.

ATTRIBUTE AtmIf remoteInstance

Description This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel*.

Values String (0..60, ASCII)

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ATTRIBUTE Atmlf provRate

Description	This attribute indicates the provisioned bandwidth for this ATM interface.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf actualRate

Description	This attribute indicates the actual bandwidth for this ATM interface. When no errors occur it has a value equal to *provRate*. When the link (or IMA group) is down for the entire collection interval it has a value of zero. When the link goes down during the collection interval it has a value representing the average bandwidth during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txUtilization

Description	This attribute indicates the average transmit traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%. If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.
Values	Decimal (0..65535)
Units	%

ATTRIBUTE Atmlf rxUtilization

Description	This attribute indicates the average receive traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available

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bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%.

If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.

Values	Decimal (0..65535)
Units	%

ATTRIBUTE Atmlf txMaxCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txMaxCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txMinCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txMinCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf txAvgCellRate

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txAvgCellRateByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxMaxCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxMaxCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxMinCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf rxMinCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxAvgCellRate

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxAvgCellRateByServiceCat

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txMaxCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txMaxCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf txMinCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txMinCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txAvgCellRateClp

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf txAvgCellRateClpByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxMaxCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf rxMaxCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxMinCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxMinCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxAvgCellRateClp

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf rxAvgCellRateClpByServiceCat

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf txCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf txCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf rxCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

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ATTRIBUTE Atmlf txFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf rxFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf txCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval.

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Values	Long Integer

ATTRIBUTE Atmlf rxCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf txFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf txFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf rxFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf rxFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

COLLECTED STATS AtmInterface

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VirtualPathTerminator

Description — The statistics record generated by the AtmInterface VirtualPathTerminator component.

ATTRIBUTE Atmlf Vpt remoteInstance

Description — This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel*.

Values — String (0..60, ASCII)

ATTRIBUTE Atmlf Vpt provRate

Description — This attribute indicates the provisioned bandwidth for this ATM interface.

Values — Decimal (0..4294967295)

Units — cell/s

ATTRIBUTE Atmlf Vpt actualRate

Description — This attribute indicates the actual bandwidth for this ATM interface. When no errors occur it has a value equal to *provRate*. When the link (or IMA group) is down for the entire collection interval it has a value of zero. When the link goes down during the collection interval it has a value representing the average bandwidth during the collection interval.

Values — Decimal (0..4294967295)

Units — cell/s

ATTRIBUTE Atmlf Vpt txUtilization

Description — This attribute indicates the average transmit traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth.

On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%.

If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.

Values — Decimal (0..65535)

Units — %

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ATTRIBUTE Atmlf Vpt **rxUtilization**

Description	This attribute indicates the average receive traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%. If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.
Values	Decimal (0..65535)
Units	%

ATTRIBUTE Atmlf Vpt **txMaxCellRate**

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt **txMaxCellRateByServiceCat**

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **txMinCellRate**

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf Vpt txMinCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txAvgCellRate

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt txAvgCellRateByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxMaxCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt rxMaxCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf Vpt rxMinCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt rxMinCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxAvgCellRate

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt rxAvgCellRateByServiceCat

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txMaxCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf Vpt txMaxCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txMinCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt txMinCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txAvgCellRateClp

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt txAvgCellRateClpByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf Vpt rxMaxCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt rxMaxCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxMinCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Atmlf Vpt rxMinCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxAvgCellRateClp

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Atmlf Vpt **rxAvgCellRateClpByServiceCat**

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **txCellDiscards**

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt **txCellDiscardsByServiceCat**

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **rxCellDiscards**

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt **rxCellDiscardsByServiceCat**

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt **txFrameDiscards**

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval.

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Values	Long Integer

ATTRIBUTE Atmlf Vpt txFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt rxFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt txCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

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ATTRIBUTE Atmlf Vpt rxCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt rxCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt txFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE Atmlf Vpt txFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE Atmlf Vpt rxFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

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ATTRIBUTE Atmlf Vpt **rxFrameDiscardsClpByServiceCat**

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

COLLECTED STATS SignallingChannel E1Cas

Description	The statistics record generated by the SignallingChannel E1Cas component.

ATTRIBUTE SigChan E1Cas **totalCallsOutgoing**

Description	This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas **totalCallsIncoming**

Description	This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas **seizeFailures**

Description	This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas **releaseFailures**

Description	This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas **outgoingAnsweredCalls**

Description	This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.
Values	Decimal (0..65535)

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ATTRIBUTE SigChan E1Cas incomingAnsweredCalls

Description — This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan E1Cas peakActiveChannels

Description — This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values — Decimal (0..30)

COLLECTED STATS SignallingChannel Ds1Cas

Description — The statistics record generated by the SignallingChannel Ds1Cas component.

ATTRIBUTE SigChan Ds1Cas totalCallsOutgoing

Description — This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas totalCallsIncoming

Description — This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas seizeFailures

Description — This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas releaseFailures

Description — This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas outgoingAnsweredCalls

Description — This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

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Values Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas incomingAnsweredCalls

Description This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas peakActiveChannels

Description This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values Decimal (0..30)

COLLECTED STATS SignallingChannel J2Cas

Description The statistics record generated by the SignallingChannel J2Cas component.

ATTRIBUTE SigChan J2 totalCallsOutgoing

Description This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 totalCallsIncoming

Description This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 seizeFailures

Description This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 releaseFailures

Description This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values Decimal (0..65535)

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ATTRIBUTE SigChan J2 outgoingAnsweredCalls

Description — This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan J2 incomingAnsweredCalls

Description — This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan J2 peakActiveChannels

Description — This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values — Decimal (0..30)

COLLECTED STATS SignallingChannel EtsiQsig

Description — The statistics record generated by the SignallingChannel EtsiQsig component.

ATTRIBUTE SigChan EQsig peakActiveChannels

Description — This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan EQsig peakActiveVoiceChannels

Description — This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan EQsig peakActiveDataChannels

Description — This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan EQsig totalCallsToIf

Description — This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

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Values Decimal (0..65535)

ATTRIBUTE SigChan EQsig totalCallsFromIf

Description This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan EQsig nonCallAssocSessionsToIf

Description This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan EQsig nonCallAssocSessionsFromIf

Description This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan EQsig frmToIf

Description This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SignallingChannel NisSig

Description The statistics record generated by the SignallingChannel NisSig component.

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ATTRIBUTE SigChan Nis peakActiveChannels

Description — This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Nis peakActiveVoiceChannels

Description — This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Nis peakActiveDataChannels

Description — This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Nis totalCallsToIf

Description — This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Nis totalCallsFromIf

Description — This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Nis nonCallAssocSessionsToIf

Description — This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Nis nonCallAssocSessionsFromIf

Description — This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Nis frmToIf

Description — This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE SigChan Nis frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Nis octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Nis octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SignallingChannel EuroIsdn

Description The statistics record generated by the SignallingChannel EuroIsdn component.

ATTRIBUTE SigChan Elsdn peakActiveChannels

Description This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan Elsdn peakActiveVoiceChannels

Description This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan Elsdn peakActiveDataChannels

Description This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan Elsdn totalCallsToIf

Description This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

Values Decimal (0..65535)

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ATTRIBUTE SigChan Elsdn totalCallsFromIf

Description — This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsToIf

Description — This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsFromIf

Description — This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Elsdn frmToIf

Description — This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE SigChan Elsdn frmFromIf

Description — This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE SigChan Elsdn octetFromIf

Description — The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE SigChan Elsdn octetToIf

Description — The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS SignallingChannel McdnSig

Description — The statistics record generated by the SignallingChannel McdnSig component.

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ATTRIBUTE SigChan Mcdn peakActiveChannels

Description — This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Mcdn peakActiveVoiceChannels

Description — This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Mcdn peakActiveDataChannels

Description — This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Mcdn totalCallsToIf

Description — This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Mcdn totalCallsFromIf

Description — This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsToIf

Description — This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsFromIf

Description — This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Mcdn frmToIf

Description — This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE SigChan Mcdn frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS VoiceRoute

Description The statistics record generated by the VoiceRoute component.

ATTRIBUTE VRoute totalCallsFromSubnet

Description This spooled statistic counts the calls that have been received from the subnet in the last statistics collection interval, including calls that fail.

Values Decimal (0..65535)

ATTRIBUTE VRoute callsClearedNoChannel

Description This spooled statistic counts the calls from the subnet that were rejected when all of the in-service channels were busy in the last statistics collection interval. When a call is rejected for this reason, the cause code sent to the originator is 34, no circuit/channel available.

Values Decimal (0..65535)

ATTRIBUTE VRoute callsClearedOutOfService

Description This spooled statistic counts the calls from the subnet that were rejected because all of the channels were out-of-service in the last statistics collection interval. A channel is considered out-of-service if it is unavailable for any reason other than it is being engaged in handling a call. That is, an operator lock of any of the components required for the channel's operation, or problems which interfere with the connection to the PBX, will cause the channel to be considered out-of-service. When a call is rejected for this reason, the cause code sent back to the originator is 27, destination out-of-service.

Values Decimal (0..65535)

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ATTRIBUTE VRoute callsRejected

Description — This spooled statistic counts the calls from the subnet that were rejected in the last statistics collection interval because they were:
1) voice calls to a *typeOfRoute* which is set *to* ***data***,
2) data calls to a *typeOfRoute* which is set to ***voice***,
3) using a signalling protocol which is incompatible with this end.

Values — Decimal (0..65535)

COLLECTED STATS VoiceSubroute

Description — The statistics record generated by the VoiceSubroute component.

ATTRIBUTE Vsr totalCallsFromIf

Description — This spooled statistic counts the number of calls that have been received by this *VoiceSubroute* from the PBX in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Vsr totalFailedCallsFromIf

Description — This spooled statistic counts the number of calls that have been received by this *VoiceSubroute* from the PBX which failed to be successfully routed through the subnet in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Vsr invalidNumberingPlanCalls

Description — This spooled statistic counts the calls from the interface for which the type of number and the numbering plan identification was not associated with a diallingPlan in the last statistics collection interval. The numbering plan types *diallingPlan0, diallingPlan1, diallingPlan2* are provisioned in the *VoiceRoute*.

Values — Decimal (0..65535)

ATTRIBUTE Vsr addressResolutionFailedCalls

Description — This spooled statistic counts the calls from the interface which had dialled numbers that had no entry in the *VoiceNetworkingCallServer* data base in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Vsr addressIncompleteCalls

Description — This spooled statistic counts the calls from the interface which had dialled numbers with insufficient digits to resolve to a unique entry in the *VoiceNetworkingCallServer* data base in the last statistics collection interval.

Values — Decimal (0..65535)

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ATTRIBUTE Vsr pathAttributesNotMetCalls

Description — This spooled statistic counts the calls from the interface for which a path to the end point could not be established based on the attribute specified in the *VoiceProfile* in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Vsr pathSetupTimeOutCalls

Description — This spooled statistic counts the calls from the interface for which a path to the end point could not be established due to a subnet path setup time-out in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Vsr callsRejectedLocally

Description — This spooled statistic counts the calls from the interface which were rejected by the originating end in the last statistics collection interval because it was:
1) a data call on a voice only *VoiceRoute*, or
2) a voice call on a data only *VoiceRoute*, or
3) a data call to an end-point whose *VoiceProfile* prevents data calls from being made.

Values — Decimal (0..65535)

ATTRIBUTE Vsr callsRejectedByFarEnd

Description — This spooled statistic counts the calls from the interface which were rejected by the far-end in the last statistics collection interval.This rejection could be due to:
1) no free channels at the end-point, or
2) a voice call going to a data only *VoiceRoute*, or
3) a data call going to a voice only *VoiceRoute*, or
4) a signalling protocol incompatibility between end-points.

Values — Decimal (0..65535)

ATTRIBUTE Vsr peakActiveChannels

Description — This spooled statistic counts the peak number of B-channels that were active in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE Vsr peakActiveVoiceChannels

Description — This spooled statistic counts the peak number of B-channels that were active carrying voice in the last statistics collection interval.

Values — Decimal (0..30)

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ATTRIBUTE Vsr peakActiveModemChannels

Description	This spooled statistic counts the peak number of active B-channels that a 2100Hz tone was detected in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveDataChannels

Description	This spooled statistic counts the maximum number of B-channels that were active carrying data in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveFaxRelayChannels

Description	This spooled statistic counts the maximum number of B-channels that were active carrying fax relay calls in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr totalCalls

Description	This spooled statistic counts the call attempts processed on this channel (in both directions) in the last statistics collection interval. This counter includes the number of unsuccessful as well as successful call attempts.
Vector of	Decimal (0..65535)
Index	Decimal (1..32)

ATTRIBUTE Vsr totalCallSeconds

Description	This spooled statistic counts the number of seconds that each channel is handling a call in the last statistics collection interval. This is regardless of whether the call is successful or not. In other words, this is the amount of time that the channel is not in the idle state.
Vector of	Decimal (0..65535)
Units	seconds
Index	Decimal (1..32)

ATTRIBUTE Vsr voiceRouteInstance

Description	This spooled statistic is the value of the *VoiceRoute* linked to this *VoiceSubRoute*.
Values	Decimal (1..16)

COLLECTED STATS VoiceSubroute SwitchedVoiceService Framer

Description	The statistics record generated by the VoiceSubroute SwitchedVoiceService Framer component.

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ATTRIBUTE Vsr Svs Framer **rxBytes**

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Vsr Svs Framer **rxFrames**

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Vsr Svs Framer **txBytes**

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Vsr Svs Framer **txFrames**

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Vsr Svs Framer **rxTotalLinkUtil**

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS DataSignallingChannel TS014 Framer

Description — The statistics record generated by the DataSignallingChannel TS014 Framer component.

ATTRIBUTE DataSigChan TS014 Framer **rxBytes**

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE DataSigChan TS014 Framer **rxFrames**

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

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ATTRIBUTE DataSigChan TS014 Framer **txBytes**

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DataSigChan TS014 Framer **txFrames**

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DataSigChan TS014 Framer **rxTotalLinkUtil**

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS DataSignallingChannel Etsi Framer

Description — The statistics record generated by the DataSignallingChannel Etsi Framer component.

ATTRIBUTE DataSigChan Etsi Framer **rxBytes**

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE DataSigChan Etsi Framer **rxFrames**

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE DataSigChan Etsi Framer **txBytes**

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DataSigChan Etsi Framer **txFrames**

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

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Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS DataSignallingChannel JapanIns Framer

Description The statistics record generated by the DataSignallingChannel JapanIns Framer component.

ATTRIBUTE DataSigChan Ins Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS DataSignallingChannel

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NationalIsdn2 Framer

Description — The statistics record generated by the DataSignallingChannel NationalIsdn2 Framer component.

ATTRIBUTE DataSigChan Ni2 Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE DataSigChan Ni2 Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE DataSigChan Ni2 Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DataSigChan Ni2 Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DataSigChan Ni2 Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS DataSignallingChannel Nis Framer

Description — The statistics record generated by the DataSignallingChannel Nis Framer component.

ATTRIBUTE DataSigChan Nis Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

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ATTRIBUTE DataSigChan Nis Framer **rxFrames**

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE DataSigChan Nis Framer **txBytes**

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DataSigChan Nis Framer **txFrames**

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE DataSigChan Nis Framer **rxTotalLinkUtil**

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint

Description — The statistics record generated by the McsManager DprsMcsEndPointGroup EndPoint component.

ATTRIBUTE McsMgr DprsMcsEpG Ep **remoteComponentName (remoteName)**

Description — This attribute indicates the component name of the remote *Ep,* learned from the remote end.
For example: *"EM/NODEY2D0 McsMgr DprsMcsEpG/1 Ep/1".*
The value will be a null string if the transport connection is down at the end of the statistics collection interval.

Values — String (0..46, ASCII)

ATTRIBUTE McsMgr DprsMcsEpG Ep **bandwidthHWM**

Description — This attribute indicates the high-water mark of the bandwidth at which the transport connection agrees to transfer data during the last statistics collection interval. The value for this attribute is equal to the provisioned bandwidth when the connection is up, and is 0 when the transport connection is down.
This attribute, when combined with *bandwidthLWM* can also be used to indicate a transport connection outage occurrence.

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Values	Decimal (0..155000000)
Units	bit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep bandwidthLWM

Description	This attribute indicates the low-water mark of the bandwidth at which the transport connection agrees to transfer data during the last statistics collection interval. The value for this attribute is equal to the provisioned bandwidth when the connection is up, and is 0 when the transport connection is down. This attribute, when combined with *bandwidthHWM* can also be used to indicate a transport connection outage occurrence.
Values	Decimal (0..155000000)
Units	bit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep serviceCategory (sc)

Description	This attribute indicates the ATM service category of the transport connection.
Values	ubr cbr rtVbr nrtVbr

ATTRIBUTE McsMgr DprsMcsEpG Ep pktFromMcs

Description	This attribute indicates the number of packets received on the DPRS MCS Switched Path End Point for each discard priority in the last statistics collection interval. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0(***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep octetsFromMcs

Description	This attribute indicates the octets received on the DPRS MCS Switched Path End Point for each discard priority in the last statistics collection interval. This attribute is a vector with four entries. Each vector entry is a counter

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indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).

Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep **pktDiscCongestedFromMcs**

Description	This attribute indicates the number of packets received on the DPRS MCS Switched Path End Point for each discard priority that have been discarded at the transport card in the last statistics collection interval due to congestion at the access card. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).
Vector of	Decimal (0..4294967295)
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep **pktDiscErroredFromMcs**

Description	This attribute the number of errored packets received on the DPRS MCS Switched Path End Point that have been discarded in the last statistics collection interval.
Values	Decimal (0..4294967295)

COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl

Description	The statistics record generated by the McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl component.

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac **effectiveBandwidth**

Description	This value indicates the level of effective bandwidth available during the last statistics collection interval, as indicated by the *effectiveBandwidth* attribute of the *McsMgr DprsMcsEpG/m EndPoint/n Cac* component in thousands of bits per second.
Values	Decimal (0..4294967295)
Units	kbit/s

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ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidthAvailableLWM

Description	This value indicates the lowest level of effective bandwidth available as indicated by the *effectiveBandwidthAvailable* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component, in thousands of bits per second during the last statistics collection interval.
Values	Decimal (0..4294967295)
Units	kbit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCallsActiveHWM

Description	This value indicates the highest level of the *numberOfCallsActive* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component, during the last statistics collection interval.
Values	Decimal (0..512)

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCacFailures

Description	This value indicates the number of call admission failures in the last statistics collection interval. This value equals the increase in the *numberOfCacFailures* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component during the last statistics collection interval.
Values	Decimal (0..4294967295)

COLLECTED STATS MpaNetworkLink Framer

Description	The statistics record generated by the MpaNetworkLink Framer component.

ATTRIBUTE MpanI Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE MpanI Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE MpanI Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

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ATTRIBUTE Mpanl Framer **txFrames**

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Mpanl Framer **rxTotalLinkUtil**

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2 component.

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **insvFailures**

Description — This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msusTx**

Description — This attribute indicates the number of message signal units transmitted over the collection interval. This includes the MSUs retransmitted, indicated by the attribute *msuRetransmits.*

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msuRetransmits (msuReTx)**

Description — This attribute indicates the number of message signal units retransmitted because of negative acknowledgments over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 **msusRx**

Description — This attribute indicates the number of message signal units received over the collection interval. This includes the MSUs with errors, indicated by the attribute *msuErrors.*

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuErrors

Description — This attribute indicates the number of message signal units discarded because of sequence number, length or CRC errors over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuOctetsTx

Description — This attribute indicates the number of payload MSU octets transmitted over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuOctetsRx

Description — This attribute indicates the number of payload MSU octets received over the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2 component.

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 insvFailures

Description — This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msusTx

Description — This attribute indicates the number of message signal units transmitted over the collection interval. This includes the MSUs retransmitted, indicated by the attribute *msuRetransmits.*

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuRetransmits (msuReTx)

Description — This attribute indicates the number of message signal units retransmitted because of negative acknowledgments over the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msusRx**

Description — This attribute indicates the number of message signal units received over the collection interval. This includes the MSUs with errors, indicated by the attribute *msuErrors.*

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msuErrors**

Description — This attribute indicates the number of message signal units discarded because of sequence number, length or CRC errors over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msuOctetsTx**

Description — This attribute indicates the number of payload MSU octets transmitted over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 **msuOctetsRx**

Description — This attribute indicates the number of payload MSU octets received over the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway Mtp2

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway Mtp2 component.

ATTRIBUTE Nsta Vgs Mtp2 **alignmentReadyTimeouts**

Description — This attribute counts the number of timeouts of the “Alignment Ready” timer (T1) represented by the attribute *alignmentReadyTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component).

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 **notAlignedTimeouts**

Description — This attribute counts the number of timeouts of the “Not Aligned” timer (T2) represented by the attribute *notAlignedTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component).

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 alignedTimeouts

Description This attribute counts the number of timeouts of the “Aligned” timer (T3) represented by the attribute *alignedTimer* (defined in the *Nsta/n Vgs Mtp2Profile* component).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 congestionDetects

Description This attribute counts the number of times congestion was detected by the *MonitoredCommunicationsProtocol* dynamic subcomponent at the local end of the signalling link.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 congestionIndicationsSent

Description This attribute counts the number of congestion indications transmitted to the remote end of the signalling link. The congestion is detected locally by the *MonitoredCommunicationsProtocol* dynamic subcomponent and is transmitted to the remote end if it does not abate within the time interval specified by the *sendingSibTimer* (T5) attribute of the linked *Nsta/n Vgs Mtp2Profile/n* component.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 congestionIndicationsReceived

Description This attribute counts the number of congestion indications received from the remote end of the signalling link.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 ackTimeouts

Description This attribute counts the number of timeouts of the T7 Timer represented by the attribute *ackTimer* (defined in the *Nsta/n Vgs Mtp2Profile/n* component).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs Mtp2 inServiceFailures

Description — This attribute counts the number of failures the *Mtp2* link has experienced while it was “In service”.

It does not include failures which occur during the alignment process.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuSent

Description — This attribute counts the number of Message Signal Units (MSU) transmitted. This includes the number of MSUs retransmitted, indicated by the attribute *msuRetransmits*.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuRetransmits

Description — This attribute counts the number of Message Signal Units (MSU) retransmitted because of negative acknowledgments.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuReceived

Description — This attribute counts the number of Message Signal Units (MSU) received. This includes the MSUs with errors, indicated by the attribute *msuErrors.*

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuErrors

Description — This attribute counts the number of ingress signal units discarded because of sequence number, length or Cyclic Redundancy Check (CRC) errors.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 msuOctetsSent

Description — This attribute counts the number of layer 3 payload octets transmitted within the Message Signal Units (MSU).

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs Mtp2 msuOctetsReceived

Description — This attribute counts the number of layer 3 payload octets received within the Message Signal Units (MSU).

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway Mtp2 MonitoredCommunicationProtocol

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway Mtp2 MonitoredCommunicationProtocol component.

ATTRIBUTE Nsta Vgs Mtp2 MCP communicationFailures (commFailures)

Description — This attribute counts the number of communication failures between the neighbors being monitored.

The communication failure is detected in two ways:

- if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively.
- if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP messageTxFailures (msgTxFailures)

Description — This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs Mtp2 MCP **messageRxFailures (msgRxFailures)**

Description — This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the neighbor.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **enableRequestsTx (enableReqsTx)**

Description — This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor.

The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **enableRequestsRx (enableReqsRx)**

Description — This attribute counts the number of Monitor Enable Request messages received by this component.

The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **enableResponsesTx (enableRspsTx)**

Description — This attribute counts the number of Monitor Enable Response messages sent by this component.

The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP **enableResponsesRx (enableRspsRx)**

Description — This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP heartbeatsTx (hbsTx)

Description This attribute counts the number of Heartbeat messages sent by this component to the neighbor.

If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP heartbeatRx (hbsRx)

Description This attribute counts the number of Heartbeat messages received by this component.

The value of this attribute is incremented when the Heartbeat message is received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP messagesTx (msgsTx)

Description This attribute counts the number of payload messages sent by this component to the neighbor.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP messagesRx (msgsRx)

Description This attribute counts the number of payload messages received by this component.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP sequenceGapsTx (seqGapsTx)

Description This attribute counts the number of Sequencing Gap messages sent by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap

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message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP sequenceGapsRx (seqGapsRx)

Description This attribute counts the number of Sequencing Gap messages received by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP unknownMessagesRx (unknownMsgsRx)

Description This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs Mtp2 MCP messagesDiscarded (msgsDiscarded)

Description This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor.

The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor.

If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is incremented.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway

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M2ua

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua component.

ATTRIBUTE Nsta Vgs M2ua **connectionsRefused**

Description — This attribute counts the number of connection requests refused by the Message Transfer Part Layer 2 User Adaptation (M2UA) layer.

The most likely cause for the connection to be refused is that the requestor's IP address or port information is not configured under the *Nsta/n Vgs M2ua* hierarchy.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier component.

ATTRIBUTE Nsta Vgs M2ua As Iid **dataMessagesReceived**

Description — This attribute counts the number of Data messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataMessagesSent**

Description — This attribute counts the number of Data messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataAcknowledgementsReceived**

Description — This attribute counts the number of Data Acknowledgement messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Iid **dataAcknowledgementsSent**

Description — This attribute counts the number of Data Acknowledgement messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **establishRequestsReceived**

Description — This attribute counts the number of Establish Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **establishRequestsSent**

Description — This attribute counts the number of Establish Request messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **establishConfirmsReceived**

Description — This attribute counts the number of Establish Confirm messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **establishConfirmsSent**

Description — This attribute counts the number of Establish Confirm messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **releaseRequestsReceived**

Description — This attribute counts the number of Release Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **releaseConfirmsSent**

Description — This attribute counts the number of Release Confirm messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Iid **releaseIndicationsSent**

Description — This attribute counts the number of Release Indication messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **stateRequestsReceived**

Description — This attribute counts the number of State Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **stateConfirmsSent**

Description — This attribute counts the number of State Confirm messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **stateIndicationsSent**

Description — This attribute counts the number of State Indication messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataRetrievalRequestsReceived**

Description — This attribute counts the number of Data Retrieval Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataRetrievalConfirmsSent**

Description — This attribute counts the number of Data Retrieval Confirm messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataRetrievalIndicationsSent**

Description — This attribute counts the number of Data Retrieval Indication messages sent.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **dataRetrievalCmpIIndicationsSent**

Description This attribute counts the number of Data Retrieval Complete Indication messages.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid **congestionIndicationsSent**

Description This attribute counts the number of Congestion Indication messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol

Description The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol component.

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **communicationFailures (commFailures)**

Description This attribute counts the number of communication failures between the neighbors being monitored.

The communication failure is detected in two ways:

- if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively.
- if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP messageTxFailures (msgTxFailures)

Description This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP messageRxFailures (msgRxFailures)

Description This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the neighbor.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableRequestsTx (enableReqsTx)

Description This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor.

The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableRequestsRx (enableReqsRx)

Description This attribute counts the number of Monitor Enable Request messages received by this component.

The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP enableResponsesTx (enableRspsTx)

Description This attribute counts the number of Monitor Enable Response messages sent by this component.

The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor

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Enable Request message.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **enableResponsesRx (enableRspsRx)**

Description This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **heartbeatsTx (hbsTx)**

Description This attribute counts the number of Heartbeat messages sent by this component to the neighbor.

If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **heartbeatRx (hbsRx)**

Description This attribute counts the number of Heartbeat messages received by this component.

The value of this attribute is incremented when the Heartbeat message is received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **messagesTx (msgsTx)**

Description This attribute counts the number of payload messages sent by this component to the neighbor.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **messagesRx (msgsRx)**

Description This attribute counts the number of payload messages received by this component.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **sequenceGapsTx (seqGapsTx)**

Description This attribute counts the number of Sequencing Gap messages sent by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **sequenceGapsRx (seqGapsRx)**

Description This attribute counts the number of Sequencing Gap messages received by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **unknownMessagesRx (unknownMsgsRx)**

Description This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Iid MCP **messagesDiscarded (msgsDiscarded)**

Description This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor.

The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor.

If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is

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incremented.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess

Description The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess component.

ATTRIBUTE Nsta Vgs M2ua As Asp **aspUpMsgsReceived**

Description This attribute counts the number of Application Server Process (ASP) Up (UP) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **aspDownMsgsReceived**

Description This attribute counts the number of Application Server Process (ASP) Down (DOWN) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **aspUpAcksSent**

Description This attribute counts the number of Application Server Process (ASP) Up Acknowledgement (UP ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **aspDownAcksSent**

Description This attribute counts the number of Application Server Process (ASP) Down Acknowledgement (DOWN ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **aspActiveMsgsReceived**

Description This attribute counts the number of Application Server Process (ASP) Active (ACTIVE) messages received.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **aspInactiveMsgsReceived**

Description This attribute counts the number of Application Server Process (ASP) Inactive (INACTIVE) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **aspActiveAcksSent**

Description This attribute counts the number of Application Server Process (ASP) Active Acknowledgement (ACTIVE ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **aspInactiveAcksSent**

Description This attribute counts the number of Application Server Process (ASP) Inactive Acknowledgement (INACTIVE ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **heartbeatsSent**

Description This attribute counts the number of Heartbeat (BEAT) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **heartbeatsReceived**

Description This attribute counts the number of Heartbeat (BEAT) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **heartbeatAcksSent**

Description This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Asp **heartbeatAcksReceived**

Description	This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **notifyMsgsSent**

Description	This attribute counts the number of Notify (NTFY) messages sent. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **errorsSent**

Description	This attribute counts the number of Error (ERR) messages sent. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **errorsReceived**

Description	This attribute counts the number of Error (ERR) messages received. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **invalidVersionErrorsSent**

Description	This attribute counts the number of "Invalid Version" errors sent. This corresponds to error code 0x1 defined in RFC 3331. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **invalidVersionErrorsReceived**

Description	This attribute counts the number of "Invalid Version" errors received. This corresponds to error code 0x1 defined in RFC 3331. The counter counts the number of events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **invalidlidErrorsSent**

Description	This attribute counts the number of "Invalid Interface Identifier" errors sent. This corresponds to error code 0x2 defined in RFC 3331. This error occurs when the Application Server Process (ASP) references

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an Interface Identifier (IID) that is not locally configured.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidIidErrorsReceived

Description This attribute counts the number of "Invalid Interface Identifier" errors received. This corresponds to error code 0x2 defined in RFC 3331.

This error occurs when the remote Application Server Process (ASP) does not recognize the Interface Identifier (IID) that it has received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp unsupportedTypeErrorsSent

Description This attribute counts the number of following errors sent that are defined in RFC 3331:
- "Unsupported Message Class" (error code 0x3)
- "Unsupported Message Type" (error code 0x4)
- "Unsupported Traffic Handling Mode" (error code 0x5).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp unsupportedTypeErrorsReceived

Description This attribute counts the number of following errors received that are defined in RFC 3331:
- "Unsupported Message Class" (error code 0x3)
- "Unsupported Message Type" (error code 0x4)
- "Unsupported Traffic Handling Mode" (error code 0x5).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp protocolErrorsSent

Description This attribute counts the number of protocol errors detected locally.

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp protocolErrorsReceived

Description This attribute counts the number of protocol errors detected by the remote Application Server Process (ASP).

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidStreamIdErrorsSent

Description This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to error code 0x9 defined in RFC 3331. This error is sent if a management message is received on a stream other than "0".

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp invalidStreamIdErrorsReceived

Description This attribute counts the number of "Invalid Stream Identifier" errors received

This corresponds to error code 0x9 defined in RFC 3331. Receipt of this error indicates that the remote node received a message on an unexpected Stream Control Transmission Protocol (SCTP) stream.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp sendFailures

Description This attribute counts the times the User Adaptation application was unable to send a Stream Control Transmission Protocol (SCTP) message to the remote Application Server Process (ASP).

The most likely cause of a send failure is congestion on the remote node. Messages that the SCTP layer is unable to send are discarded.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Asp **sctpEstablishIndications**

Description — This attribute counts the number of M-SCTP Establish Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpEstablishRequests**

Description — This attribute counts the number of M-SCTP Establish Requests sent for this Application Server Process (ASP).

This attribute counts the number of the attempts to establish a Stream Control Transmission Protocol (SCTP) association with the remote ASP.

This counter is incremented only when the value of the *localRole* attribute is set to ***client***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpEstablishFailures**

Description — This attribute counts the number of M-SCTP Establish Requests that failed to successfully establish a Stream Control Transmission Protocol (SCTP) association with the remote Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***client***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp **sctpReleaseIndications**

Description — This attribute counts the number of M-SCTP Release Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Asp **sctpRestartIndications**

Description — This attribute counts the number of M-SCTP Restart Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess SctpAssociation

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway M2ua ApplicationServer ApplicationServerProcess SctpAssociation component.

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **packetsSent**

Description — This attribute counts the number of IP packets sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **packetsReceived**

Description — This attribute counts the number of IP packets received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **bytesSent**

Description — This attribute counts the number of bytes sent.

This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **bytesReceived**

Description — This attribute counts the number of bytes received.

This count includes the Stream Control Transmission Protocol (SCTP)

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message headers and chunk headers but does not include the IP header.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **dataChunksSent**

Description This attribute counts the number of Payload Data (DATA) chunks sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **dataChunksReceived**

Description This attribute counts the number of Payload Data (DATA) chunks received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **sackChunksSent**

Description This attribute counts the number of Selective Acknowledgement (SACK) chunks sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **sackChunksReceived**

Description This attribute counts the number of Selective Acknowledgement (SACK) chunks received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **heartbeatChunksSent**

Description This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **heartbeatChunksReceived**

Description This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **heartbeatAckChunksSent**

Description — This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **heartbeatAckChunksReceived**

Description — This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **errorChunksSent**

Description — This attribute counts the number of Operation Error (ERROR) chunks sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **errorChunksReceived**

Description — This attribute counts the number of Operation Error (ERROR) chunks received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **invalidStreamIdErrorsSent**

Description — This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to cause code 1 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **invalidStreamIdErrorsReceived**

Description — This attribute counts the number of "Invalid Stream Identifier" errors received.

This corresponds to cause code 1 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **protocolErrorsSent**

Description — This attribute counts the number of protocol errors sent.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **protocolErrorsReceived**

Description — This attribute counts the number of protocol errors received.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **outOfResourceErrorsSent**

Description — This attribute counts the number of "Out of Resource" errors sent.

This corresponds to error code 4 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **outOfResourceErrorsReceived**

Description — This attribute counts the number of "Out of Resource" errors received.

This corresponds to error code 4 defined in RFC 2960.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **invalidAssocRestartErrorsSent**

Description This attribute counts the number of "Restart of an association with new addresses" errors sent.

This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **invalidAssocRestartErrorsReceived**

Description This attribute counts the number of "Restart of an association with new addresses" errors received.

This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **userInitiatedAbortsSent**

Description This attribute counts the number of "User Initiated Abort" indications sent by the local Stream Control Transmission Protocol (SCTP) user.

This corresponds to error code 12 defined in the SCTP Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **userInitiatedAbortsReceived**

Description This attribute counts the number of "User Initiated Abort" indications received from the peer Stream Control Transmission Protocol (SCTP) user.

This corresponds to error code 12 defined in the SCTP Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **checksumErrors**

Description This attribute counts the number of incoming packets that were discarded due to checksum verification failure.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **retransmittedChunks**

Description This attribute counts the number of Payload Data (DATA) chunks retransmitted.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **gapAcknowledgementsSent**

Description This attribute counts the number of chunks reported to the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were locally received out of order.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **gapAcknowledgementsReceived**

Description This attribute counts the number of chunks reported by the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were received out of order by the far end.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **duplicateChunkReportsSent**

Description This attribute counts the number of chunks reported to the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were locally received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs M2ua As Asp SctpAssoc **duplicateChunkReportsReceived**

Description This attribute counts the number of chunks reported by the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were received by the far end.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS

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NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier component.

ATTRIBUTE Nsta Vgs SgV5 As Iid **dataMessagesReceived**

Description — This attribute counts the number of Data messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid **dataMessagesSent**

Description — This attribute counts the number of Data messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid **dataAcknowledgementsReceived**

Description — This attribute counts the number of Data Acknowledgement messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid **dataAcknowledgementsSent**

Description — This attribute counts the number of Data Acknowledgement messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid **establishRequestsReceived**

Description — This attribute counts the number of Establish Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As lid **establishRequestsSent**

Description — This attribute counts the number of Establish Request messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **establishConfirmsReceived**

Description — This attribute counts the number of Establish Confirm messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **establishConfirmsSent**

Description — This attribute counts the number of Establish Confirm messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **releaseRequestsReceived**

Description — This attribute counts the number of Release Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **releaseConfirmsSent**

Description — This attribute counts the number of Release Confirm messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **releaseIndicationsSent**

Description — This attribute counts the number of Release Indication messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **stateRequestsReceived**

Description — This attribute counts the number of State Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As lid **stateConfirmsSent**

Description — This attribute counts the number of State Confirm messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **stateIndicationsSent**

Description — This attribute counts the number of State Indication messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataRetrievalRequestsReceived**

Description — This attribute counts the number of Data Retrieval Request messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataRetrievalConfirmsSent**

Description — This attribute counts the number of Data Retrieval Confirm messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataRetrievalIndicationsSent**

Description — This attribute counts the number of Data Retrieval Indication messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **dataRetrievalCmplIndicationsSent**

Description — This attribute counts the number of Data Retrieval Complete Indication messages.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid **congestionIndicationsSent**

Description — This attribute counts the number of Congestion Indication messages sent.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol

Description The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer InterfaceIdentifier MonitoredCommunicationProtocol component.

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP communicationFailures (commFailures)

Description This attribute counts the number of communication failures between the neighbors being monitored.

The communication failure is detected in two ways:

- if no messages are received from the neighbor for a predetermined number of consecutive Heartbeat timer expiries, the value of this attribute is incremented. The value of the Heartbeat timer and retries is not provisionable, but it is negotiated between the monitored parent components. The value of the Heartbeat timer and retries can be determined from the operational attributes *heartbeatTimer* and *heartbeatRetries* respectively.
- if communication monitoring is not established between the two neighbors, the value of this attribute is incremented. Monitor Enable Request messages are sent to the neighbor when the Heartbeat timer expires and if the Monitor Enable Response message is not received prior to the predetermined number of Heartbeat timer expiries, then it is assumed that monitoring communication could not be established and the value of this attribute is incremented.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP messageTxFailures (msgTxFailures)

Description This attribute counts the number of payload messages sent to the neighbor but were not received by the neighbor.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Iid MCP messageRxFailures (msgRxFailures)

Description This attribute counts the number of payload messages that were sent by the neighbor but were not received by this component. This is detected by a gap in the Message Numbers received in payload messages from the

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neighbor.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableRequestsTx (enableReqsTx)

Description This attribute counts the number of Monitor Enable Request messages sent by this component to the neighbor.

The value of this attribute is incremented when a Monitor Enable Request message is sent in an attempt to establish monitoring communication between the neighbors to be monitored.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableRequestsRx (enableReqsRx)

Description This attribute counts the number of Monitor Enable Request messages received by this component.

The value of this attribute is incremented when a Monitor Enable Request message is received from the neighbor in an attempt to establish monitoring communication.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableResponsesTx (enableRspsTx)

Description This attribute counts the number of Monitor Enable Response messages sent by this component.

The value of this attribute is incremented when a Monitor Enable Response message is sent to the neighbor in response to a Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP enableResponsesRx (enableRspsRx)

Description This attribute counts the number of Monitor Enable Response messages received by this component in response to the Monitor Enable Request message.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As lid MCP **heartbeatsTx (hbsTx)**

Description

This attribute counts the number of Heartbeat messages sent by this component to the neighbor.

If no messages are sent by this component for the duration of the Heartbeat timer, then a Heartbeat message is sent to the neighbor and the value of this attribute is incremented. The Heartbeat timer is not provisionable and is set by the neighbors being monitored.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **heartbeatRx (hbsRx)**

Description

This attribute counts the number of Heartbeat messages received by this component.

The value of this attribute is incremented when the Heartbeat message is received.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **messagesTx (msgsTx)**

Description

This attribute counts the number of payload messages sent by this component to the neighbor.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **messagesRx (msgsRx)**

Description

This attribute counts the number of payload messages received by this component.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **sequenceGapsTx (seqGapsTx)**

Description

This attribute counts the number of Sequencing Gap messages sent by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent and the value of this attribute is incremented. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **sequenceGapsRx (seqGapsRx)**

Description This attribute counts the number of Sequencing Gap messages received by this component.

When a gap in the sequence of Message Numbers in the payload messages received from the neighbor is identified, a Sequence Gap message is sent. The value of this attribute is incremented when this message is received. The Sequence Gap message shows the start and end of the gap in the Messages Numbers.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **unknownMessagesRx (unknownMsgsRx)**

Description This attribute counts the number of messages received by this component that are not recognized by the MonitoredCommunicationProtocol (MCP).

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As lid MCP **messagesDiscarded (msgsDiscarded)**

Description This attribute counts the number of messages that were discarded to avoid overflowing of the neighbor.

The number of messages that the neighbor can handle without overflowing is identified from the Available Capacity field in the messages received from the neighbor.

If the value of the Available Capacity field is zero, payload messages to be sent to the neighbor are discarded and the value of this counter is incremented.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer

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ApplicationServerProcess

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess component.

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspUpMsgsReceived**

Description — This attribute counts the number of Application Server Process (ASP) Up (UP) messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspDownMsgsReceived**

Description — This attribute counts the number of Application Server Process (ASP) Down (DOWN) messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspUpAcksSent**

Description — This attribute counts the number of Application Server Process (ASP) Up Acknowledgement (UP ACK) messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspDownAcksSent**

Description — This attribute counts the number of Application Server Process (ASP) Down Acknowledgement (DOWN ACK) messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspActiveMsgsReceived**

Description — This attribute counts the number of Application Server Process (ASP) Active (ACTIVE) messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspInactiveMsgsReceived**

Description — This attribute counts the number of Application Server Process (ASP) Inactive (INACTIVE) messages received.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspActiveAcksSent**

Description This attribute counts the number of Application Server Process (ASP) Active Acknowledgement (ACTIVE ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **aspInactiveAcksSent**

Description This attribute counts the number of Application Server Process (ASP) Inactive Acknowledgement (INACTIVE ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **heartbeatsSent**

Description This attribute counts the number of Heartbeat (BEAT) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **heartbeatsReceived**

Description This attribute counts the number of Heartbeat (BEAT) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **heartbeatAcksSent**

Description This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **heartbeatAcksReceived**

Description This attribute counts the number of Heartbeat Acknowledgement (BEAT ACK) messages received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As Asp **notifyMsgsSent**

Description — This attribute counts the number of Notify (NTFY) messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **errorsSent**

Description — This attribute counts the number of Error (ERR) messages sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **errorsReceived**

Description — This attribute counts the number of Error (ERR) messages received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **invalidVersionErrorsSent**

Description — This attribute counts the number of "Invalid Version" errors sent. This corresponds to error code 0x1 defined in RFC 3331.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **invalidVersionErrorsReceived**

Description — This attribute counts the number of "Invalid Version" errors received. This corresponds to error code 0x1 defined in RFC 3331.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **invalidIidErrorsSent**

Description — This attribute counts the number of "Invalid Interface Identifier" errors sent. This corresponds to error code 0x2 defined in RFC 3331.

This error occurs when the Application Server Process (ASP) references an Interface Identifier (IID) that is not locally configured.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As Asp **invalidIidErrorsReceived**

Description

This attribute counts the number of "Invalid Interface Identifier" errors received. This corresponds to error code 0x2 defined in RFC 3331.

This error occurs when the remote Application Server Process (ASP) does not recognize the Interface Identifier (IID) that it has received.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **unsupportedTypeErrorsSent**

Description

This attribute counts the number of following errors sent that are defined in RFC 3331:
- "Unsupported Message Class" (error code 0x3)
- "Unsupported Message Type" (error code 0x4)
- "Unsupported Traffic Handling Mode" (error code 0x5).

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **unsupportedTypeErrorsReceived**

Description

This attribute counts the number of following errors received that are defined in RFC 3331:
- "Unsupported Message Class" (error code 0x3)
- "Unsupported Message Type" (error code 0x4)
- "Unsupported Traffic Handling Mode" (error code 0x5).

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **protocolErrorsSent**

Description

This attribute counts the number of protocol errors detected locally.

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As Asp **protocolErrorsReceived**

Description

This attribute counts the number of protocol errors detected by the remote Application Server Process (ASP).

This corresponds to the following errors defined in RFC 3331:
- "Unexpected Message" (error code 0x6)
- "Protocol Error" (error code 0x7)
- "Invalid Parameter Value" (error code 0x11)
- "Parameter Field Error" (error code 0x12)
- "Unexpected Parameter" (error code 0x13)
- "Missing Parameter" (error code 0x16).

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **invalidStreamIdErrorsSent**

Description

This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to error code 0x9 defined in RFC 3331. This error is sent if a management message is received on a stream other than "0".

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **invalidStreamIdErrorsReceived**

Description

This attribute counts the number of "Invalid Stream Identifier" errors received

This corresponds to error code 0x9 defined in RFC 3331. Receipt of this error indicates that the remote node received a message on an unexpected Stream Control Transmission Protocol (SCTP) stream.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sendFailures**

Description

This attribute counts the times the User Adaptation application was unable to send a Stream Control Transmission Protocol (SCTP) message to the remote Application Server Process (ASP).

The most likely cause of a send failure is congestion on the remote node. Messages that the SCTP layer is unable to send are discarded.

The counter counts the number of events in the collection interval.

Values

Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpEstablishIndications**

Description — This attribute counts the number of M-SCTP Establish Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpEstablishRequests**

Description — This attribute counts the number of M-SCTP Establish Requests sent for this Application Server Process (ASP).

This attribute counts the number of the attempts to establish a Stream Control Transmission Protocol (SCTP) association with the remote ASP.

This counter is incremented only when the value of the *localRole* attribute is set to ***client***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpEstablishFailures**

Description — This attribute counts the number of M-SCTP Establish Requests that failed to successfully establish a Stream Control Transmission Protocol (SCTP) association with the remote Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***client***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpReleaseIndications**

Description — This attribute counts the number of M-SCTP Release Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As Asp **sctpRestartIndications**

Description — This attribute counts the number of M-SCTP Restart Indications received for this Application Server Process (ASP).

This counter is incremented only when the value of the *localRole* attribute is set to ***server***.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess SctpAssociation

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway SgV5UserAdaptation ApplicationServer ApplicationServerProcess SctpAssociation component.

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **packetsSent**

Description — This attribute counts the number of IP packets sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **packetsReceived**

Description — This attribute counts the number of IP packets received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **bytesSent**

Description — This attribute counts the number of bytes sent.

This count includes the Stream Control Transmission Protocol (SCTP) message headers and chunk headers but does not include the IP header.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **bytesReceived**

Description — This attribute counts the number of bytes received.

This count includes the Stream Control Transmission Protocol (SCTP)

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message headers and chunk headers but does not include the IP header.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **dataChunksSent**

Description This attribute counts the number of Payload Data (DATA) chunks sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **dataChunksReceived**

Description This attribute counts the number of Payload Data (DATA) chunks received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **sackChunksSent**

Description This attribute counts the number of Selective Acknowledgement (SACK) chunks sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **sackChunksReceived**

Description This attribute counts the number of Selective Acknowledgement (SACK) chunks received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatChunksSent**

Description This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks sent.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatChunksReceived**

Description This attribute counts the number of Heartbeat Request (HEARTBEAT) chunks received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatAckChunksSent**

Description — This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **heartbeatAckChunksReceived**

Description — This attribute counts the number of Heartbeat Acknowledgement (HEARTBEAT ACK) chunks received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **errorChunksSent**

Description — This attribute counts the number of Operation Error (ERROR) chunks sent.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **errorChunksReceived**

Description — This attribute counts the number of Operation Error (ERROR) chunks received.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **invalidStreamIdErrorsSent**

Description — This attribute counts the number of "Invalid Stream Identifier" errors sent.

This corresponds to cause code 1 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **invalidStreamIdErrorsReceived**

Description — This attribute counts the number of "Invalid Stream Identifier" errors received.

This corresponds to cause code 1 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **protocolErrorsSent**

Description — This attribute counts the number of protocol errors sent.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **protocolErrorsReceived**

Description — This attribute counts the number of protocol errors received.

This corresponds to the cause codes defined in RFC 2960:
2 - "Missing Mandatory Parameter"
6 - "Unrecognized Chunk Type"
7 - "Invalid Mandatory Parameter"
8 - "Unrecognized Parameters"
9 - "No User Data"

It also corresponds to cause code 13 for "Protocol Violation" defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **outOfResourceErrorsSent**

Description — This attribute counts the number of "Out of Resource" errors sent.

This corresponds to error code 4 defined in RFC 2960.

The counter counts the number of events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **outOfResourceErrorsReceived**

Description — This attribute counts the number of "Out of Resource" errors received.

This corresponds to error code 4 defined in RFC 2960.

The counter counts the number of events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **invalidAssocRestartErrorsSent**

Description This attribute counts the number of "Restart of an association with new addresses" errors sent.

This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **invalidAssocRestartErrorsReceived**

Description This attribute counts the number of "Restart of an association with new addresses" errors received.

This corresponds to error code 11 defined in the Stream Control Transmission Protocol (SCTP) Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **userInitiatedAbortsSent**

Description This attribute counts the number of "User Initiated Abort" indications sent by the local Stream Control Transmission Protocol (SCTP) user.

This corresponds to error code 12 defined in the SCTP Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **userInitiatedAbortsReceived**

Description This attribute counts the number of "User Initiated Abort" indications received from the peer Stream Control Transmission Protocol (SCTP) user.

This corresponds to error code 12 defined in the SCTP Implementer's Guide.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **checksumErrors**

Description This attribute counts the number of incoming packets that were discarded due to checksum verification failure.

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The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **retransmittedChunks**

Description This attribute counts the number of Payload Data (DATA) chunks retransmitted.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **gapAcknowledgementsSent**

Description This attribute counts the number of chunks reported to the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were locally received out of order.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **gapAcknowledgementsReceived**

Description This attribute counts the number of chunks reported by the far end in "Gap Ack" reports. This provides an indication of the number of chunks that were received out of order by the far end.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **duplicateChunkReportsSent**

Description This attribute counts the number of chunks reported to the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were locally received.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs SgV5 As Asp SctpAssoc **duplicateChunkReportsReceived**

Description This attribute counts the number of chunks reported by the far end in "Duplicate TSN" reports. This provides an indication of the number of duplicate data chunks that were received by the far end.

The counter counts the number of events in the collection interval.

Values Decimal (0..4294967295)

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COLLECTED STATS DcmeLink VoiceService Framer

Description — The statistics record generated by the DcmeLink VoiceService Framer component.

ATTRIBUTE Dcl Vs Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Dcl Vs Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Dcl Vs Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Dcl Vs Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Dcl Vs Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS PCUSupportApplication Connection PcmLink

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink component.

ATTRIBUTE Pcusa Conn PcmLk pduDn (pduDn)

Description — This attribute counts the BSSGP PDUs received from the SGSN by all the BVCs associated to this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk **pduUp (pduUp)**

Description — This attribute counts the BSSGP PDUs transmitted to the SGSN by all the BVCs associated to this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk **octetsDn (octDn)**

Description — This attribute counts the octets received by all the BVCs associated to this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk **octetsUp (octUp)**

Description — This attribute counts the octets sent by all the BVCs associated to this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk **psPaging (psPag)**

Description — This attribute counts the BSSGP PAGING PS PDUs received from the SGSN by this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk **csPaging (csPag)**

Description — This attribute counts the BSSGP PAGING CS PDUs received from the SGSN by this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk **dyAgprsLackOfTimeslots (dyAgprsLTs)**

Description — This attribute counts the number of time that the PCU has not been able to satisfy the request sent by the most loaded cell on which appears a lack of resource during the statistics collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink LapdSignaling

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink LapdSignaling component.

ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostOverflowUp (fLovfUp)**

Description — This attribute counts the uplink frames lost due to data overrun or receive buffer overflow during the statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostOverflowDn (fLovfDn)**

Description — This attribute counts the downlink frames which were not sent because of buffer overflow during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **errorsCRC (errCRC)**

Description — This attribute counts the frames with CRC errors which were received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostAlignment (fLAlign)**

Description — This attribute counts the frames lost due to abort or lack of alignment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **iFramesUp (iFrmUp)**

Description — This attribute counts the I frames received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **uiFramesUp (uiFrmUp)**

Description — This attribute counts the unnumbered I frames received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **iFramesDn (iFrmDn)**

Description — This attribute counts the I frames transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **uiFramesDn (uiFrmDn)**

Description — This attribute counts the unnumbered I frames transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink Cell

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink Cell component.

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ATTRIBUTE Pcusa Conn PcmLk Cell **cellBVCI**

Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Cell **upMultiSlotRequests (upMSlotReq)**

Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell **upMultiSlotAllocations (upMSlotAll)**

Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnMultiSlotRequests (dnMSlotReq)**

Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnMultiSlotAllocations (dnMSlotAll)**

Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations.

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Index 3 counts the number of 3- timeslot granted allocations.
Index 4 counts the number of 4- or more timeslot granted allocations.

Vector of — Decimal (0..4294967295)

Index — Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell fullDuplexTbfEstablishment (fdTbfEst)

Description — This attribute counts how many full duplex TBFs were established during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell upTbfReleases (upTbfRel)

Description — This attribute counts how many uplink TBFs were released during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell cumulativeTimeUpTbf (cumTimeUpTbf)

Description — This attribute indicates the cumulative duration of all uplink TBFs released during the statistics collection interval.

Values — Decimal (0..4294967295)

Units — seconds

ATTRIBUTE Pcusa Conn PcmLk Cell allocatedBlocksUpTbf (allBUpTbf)

Description — This attribute counts the blocks allocated for the uplink TBFs during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckUpTbfEstablishment (nAckUpTbfEst)

Description — This attribute counts the non-acknowledged uplink TBFs established during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell ackUpTbfEstablishment (ackUpTbfEst)

Description — This attribute counts the acknowledged uplink TBFs established during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Description — This attribute counts the close-ended uplink TBFs established during the statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfReleases (dnTbfRel)**

Description	This attribute counts how many downlink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **cumulativeTimeDnTbf (cumTimeDnTbf)**

Description	This attribute indicates the cumulative duration of all downlink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk Cell **nonAckDnTbfEstablishment (nAckDnTbfEst)**

Description	This attribute counts the non-acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **ackDnTbfEstablishment (ackDnTbfEst)**

Description	This attribute counts the acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsNbModif (dyAgprsNbMod)**

Description	This attribute counts the modifications of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)**

Description	This attribute indicates the average number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMinNbTimeslots (dyAgprsMinNbTs)**

Description	This attribute indicates the minimum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)**

Description	This attribute indicates the maximum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)**

Description	This attribute indicates the average Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)**

Description	This attribute indicates the maximum Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)**

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)**

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)**

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)**

Description	This attribute counts the downlink TBFs with gold QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)**

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)**

Description — This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)**

Description — This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)**

Description — This attribute counts the downlink TBFs with silver QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)**

Description — This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)**

Description — This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)**

Description — This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)**

Description — This attribute counts the downlink TBFs with bronze QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication

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Connection PcmLink Cell Tdma

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink Cell Tdma component.

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **localBusy (locBus)**

Description — This attribute counts the blocks sent with the window stalled indicator set during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **remoteBusy (remBus)**

Description — This attribute counts the blocks received with the window stalled indicator set during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **configuredTimeslots (cfgTs)**

Description — This attribute indicates the number of configured timeslots at the end of the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUnavailableTimeslots (cumUnavailTs)**

Description — This attribute indicates the cumulative number of unavailable timeslots at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUpActiveTimeslots (cumUpActTs)**

Description — This attribute indicates the cumulative number of active uplink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUpTbfPerTimeslots (cumUpTbfPerTs)**

Description — This attribute indicates the cumulative number of uplink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeDnActiveTimeslots (cumDnActTs)**

Description This attribute indicates the cumulative number of active downlink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeDnTbfPerTimeslots (cumDnTbfPerTs)**

Description This attribute indicates the cumulative number of downlink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **nbSamples (nbS)**

Description This attribute indicates how many samples were taken during the statistics collection interval.

This value can be used with the cumulative attribute for average calculs.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **llcPacketsUp (llcPktUp)**

Description This attribute counts the LLC packets reassembled and transmitted to the LLC relay during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **dataBlocksUp (dataBUp)**

Description This attribute counts the uplink RLC data blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **controlBlocksUp (ctrlBUp)**

Description This attribute counts the uplink RLC control blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **invalidBlocksUp (invalidBUp)**

Description — This attribute counts the uplink invalid radio blocks received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **invalidProtocolErrorBlocksUp (invalidProtErrBUp)**

Description — This attribute counts the uplink invalid radio blocks received with invalid RLC protocol during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **outOfSequenceBlocksUp (outOfSeqBUp)**

Description — This attribute counts the data blocks received uplink with Block Sequence Number outside the received window during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **packetAckNackUp (pktANUp)**

Description — This attribute counts the PACKET-UPLINK-ACK-NACK messages received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **totalRetransmissionRequested (totRtxReq)**

Description — This attribute counts the RLC/MAC block retransmission requests during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUpRxQual (cumUpRxQual)**

Description — This attribute indicates the cumulative uplink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUpRxLev (cumUpRxLev)**

Description — This attribute indicates the cumulative uplink RxLev value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **nbSamplesUpQuality (nbSamplesUpQuality)**

Description — This attribute counts the samples for RxQual and RxLev cumulative values during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **llcPacketsDn (llcPktDn)**

Description — This attribute counts the LLC packets segmented into RLC data blocks received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **dataBlocksDn (dataBDn)**

Description — This attribute counts the downlink RLC data blocks transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **controlBlocksDn (ctrlBDn)**

Description — This attribute counts the downlink RLC control blocks transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **retransmittedDataBlocksDn (rtxDataBDn)**

Description — This attribute counts the data blocks retransmitted downlink during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **packetAckNackDn (pktANDn)**

Description — This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeDnRxQual (cumDnRxQual)**

Description — This attribute indicates the cumulative downlink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **nbSamplesDnQuality (nbSamplesDnQuality)**

Description — This attribute counts the samples for RxQual cumulative values during the statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **tbfNormalReleaseUp (tbfNormRelUp)**

Description — This attribute counts the uplink TBFs which terminated normally during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **tbfNormalReleaseDn (tbfNormRelDn)**

Description — This attribute counts the downlink TBFs which terminated normally during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **noPacketResourceReq (noPktResReq)**

Description — This attribute counts the TBFs abnormally released due to non receipt of Packet Resource Request during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComNN002Max (lOCNN002Max)**

Description — This attribute counts the TBFs abnormally released due to V(Q) non progression during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComT3169 (lOCT3169)**

Description — This attribute counts the TBFs abnormally released due to timer T3169 expiry during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComNT0001 (lOCNT0001)**

Description — This attribute counts the TBFs abnormally released due to NT0001 timer expiry during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComT3195 (lOCT3195)**

Description — This attribute counts the TBFs abnormally released due to T3195 timer expiry during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComT3191 (lOCT3191)**

Description — This attribute counts the TBFs abnormally released due to T3191 timer expiry during the statistics collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication

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Connection PcmLink Cell Ccch

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink Cell Ccch component.

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmediateAssignment (immAssUp)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoPdch (noPdch)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoTs (noTs)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoTbf (noTbf)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **channelRequest (chanReq)**

Description — This attribute counts CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetResourceRequest (pktResReq)**

Description — This attribute counts PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **deleteIndicationUp (delIndUp)**

Description — This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetUpAssignment (pktUpAss)**

Description — This attribute counts PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two_phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoPdch (pktNoPdch)**

Description — This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoTs (pktNoTs)**

Description — This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoTbf (pktUpNoTbf)**

Description — This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfImmediateAssignment (immAssDn)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **pagingRequest (pagReq)**

Description — This attribute counts PAGING-REQUEST messages generated by the PCU to the mobile station during the statistics collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **deleteIndicationDn (delIndDn)**

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetDnAssignment (pktDnAss)**

Description This attribute counts PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment phase during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoTs (pktDnNoTs)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink BssgpVirtualConnection

Description The statistics record generated by the PCUSupportApplication Connection PcmLink BssgpVirtualConnection component.

ATTRIBUTE Pcusa Conn PcmLk Bvc **cell**

Description This attribute indicates the cell identity number associated to this BVC.

Values Decimal (0..65535)

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ATTRIBUTE Pcusa Conn PcmLk Bvc **pduDn**

Description — This attribute counts the PDUs received by this BVC from the Gb interface during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduUp**

Description — This attribute counts the PDUs sent by this BVC to the Gb interface during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsDn (octDn)**

Description — This attribute counts the octets received by the BVC from the Gb interface during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsUp (octUp)**

Description — This attribute counts the octets sent by the BVC to the Gb interface during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduDataDn**

Description — This attribute counts the UNIT-DATA PDUs received by the BVC from the Gb interface during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduDataUp**

Description — This attribute counts the UNIT-DATA PDUs sent by the BVC to the Gb interface during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsDataDn**

Description — This attribute counts the octets received by the BVC from the Gb interface in DL-UNIT-DATA PDUs during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsDataUp**

Description — This attribute counts the octets sent by the BVC to the Gb interface in UL-UNIT-DATA PDUs during the statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Bvc **maxSizeDataDn**

Description	This attribute indicates the largest size of LLC frame received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **maxSizeDataUp**

Description	This attribute indicates the biggest size of LLC frames sent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcBlockRequests (bvcBReq)**

Description	This attribute counts BVC-BLOCK PDU messages sent by the BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcUnBlockRequests (bvcUBReq)**

Description	This attribute counts BVC-UNBLOCK PDU messages sent by the BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct1TimeOuts (t1TO)**

Description	This attribute counts BVC-BLOCK-ACK and BVC-UNBLOCK-ACK timer expiries during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcResetRequestsUp (bvcResReqUp)**

Description	This attribute counts BVC-RESET PDU messages sent by a BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcResetRequestsDn (bvcResReqDn)**

Description	This attribute counts BVC-RESET PDU messages received by the BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct2TimeOuts (t2TO)**

Description	This attribute counts BVC-RESET-ACK timer expiries during the statistics collection interval.
Values	Decimal (0..65535)

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ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcFlowControlRequests (bvcFCtrlReq)**

Description	This attribute counts FLOW-CONTROL-BVC PDUs sent by the BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msFlowControlRequests (msFCtrlReq)**

Description	This attribute counts FLOW-CONTROL-MS PDUs sent by the BVC during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **llcDiscardedPdu (llcDiscPdu)**

Description	This attribute counts LLC-DISCARDED PDUs sent by the BVC during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **llcDiscardedOctets (llcDiscOct)**

Description	This attribute counts the octets discarded with a LLC-DISCARDED-INDICATION message sent by the BVC during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **nmStatusUp (nmStusUp)**

Description	This attribute counts NM-STATUS PDUs sent by a BVC during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **nmStatusDn (nmStusDn)**

Description	This attribute counts NM-STATUS PDUs received by a BVC during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msFlushLLRequest (msFlushLLReq)**

Description	This attribute counts FLUSH-LL PDUs sent from the SGSN to the PCU during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msRadioStatusInd (msRadStusInd)**

Description	This attribute counts INDICATION messages reporting that a radio exception condition occurred on the radio interface in the BVC during the statistics collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Bvc **msSuspendReq (msSusReq)**

Description — This attribute counts SUSPEND PDUs sent by the BVC during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msRaCapabilityInd (msRaCapInd)**

Description — This attribute counts RA-CAPABILITY-INDICATION PDUs received by the BVC during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msRaCapabilityUpdateReq (msRaCapUpdateReq)**

Description — This attribute counts RA-CAPABILITY-UPDATE PDUs sent by the BVC during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct3TimeOuts (t3TO)**

Description — This attribute counts SUSPEND-ACK timer expiries during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct5TimeOuts (t5TO)**

Description — This attribute counts RA-CAPABILITY-UPDATE-ACK timer expiries during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msCellTransitionDn (msCellTransDn)**

Description — This attribute counts FLUSH-LL PDUs sent by the SGSN to the PCU when the mobile station located on a cell indicated by the BVCI has moved to another cell indicated to the new BVCI.

Values — Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell **cellBVCI**

Description — This attribute indicates the corresponding BSSGP Virtual Channel Identifier during the statistics collection interval.

Values — Decimal (0..65535)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell **upMultiSlotRequests (upMSlotReq)**

Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **upMultiSlotAllocations (upMSlotAll)**

Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnMultiSlotRequests (dnMSlotReq)**

Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnMultiSlotAllocations (dnMSlotAll)**

Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell **fullDuplexTbfEstablishment (fdTbfEst)**

Description	This attribute counts how many full duplex TBFs were established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **upTbfReleases (upTbfRel)**

Description	This attribute counts how many uplink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **cumulativeTimeUpTbf (cumTimeUpTbf)**

Description	This attribute indicates the cumulative duration of all uplink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk CgiCell **allocatedBlocksUpTbf (allBUpTbf)**

Description	This attribute counts the blocks allocated for the uplink TBFs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **nonAckUpTbfEstablishment (nAckUpTbfEst)**

Description	This attribute counts the non-acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **ackUpTbfEstablishment (ackUpTbfEst)**

Description	This attribute counts the acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **closeEndedUpTbfEstablishment (closeEndUpTbfEst)**

Description	This attribute counts the close-ended uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfReleases (dnTbfRel)**

Description	This attribute counts how many downlink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell **cumulativeTimeDnTbf (cumTimeDnTbf)**

Description	This attribute indicates the cumulative duration of all downlink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk CgiCell **nonAckDnTbfEstablishment (nAckDnTbfEst)**

Description	This attribute counts the non-acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **ackDnTbfEstablishment (ackDnTbfEst)**

Description	This attribute counts the acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dyAgprsNbModif (dyAgprsNbMod)**

Description	This attribute counts the modifications of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)**

Description	This attribute indicates the average number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dyAgprsMinNbTimeslots (dyAgprsMinNbTs)**

Description	This attribute indicates the minimum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)**

Description	This attribute indicates the maximum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)**

Description	This attribute indicates the average Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

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ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Description	This attribute indicates the maximum Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)

Description	This attribute counts the downlink TBFs with gold QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)**

Description — This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)**

Description — This attribute counts the downlink TBFs with silver QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)**

Description — This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)**

Description — This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)**

Description — This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)**

Description — This attribute counts the downlink TBFs with bronze QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Tdma

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell Tdma component.

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **localBusy (locBus)**

Description — This attribute counts the blocks sent with the window stalled indicator set during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **remoteBusy (remBus)**

Description — This attribute counts the blocks received with the window stalled indicator set during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **configuredTimeslots (cfgTs)**

Description — This attribute indicates the number of configured timeslots at the end of the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUnavailableTimeslots (cumUnavailTs)**

Description — This attribute indicates the cumulative number of unavailable timeslots at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUpActiveTimeslots (cumUpActTs)**

Description — This attribute indicates the cumulative number of active uplink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUpTbfPerTimeslots (cumUpTbfPerTs)**

Description — This attribute indicates the cumulative number of uplink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeDnActiveTimeslots (cumDnActTs)**

Description — This attribute indicates the cumulative number of active downlink timeslots bearing at least one TBF at the sample time during the statistics collection

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interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeDnTbfPerTimeslots (cumDnTbfPerTs)

Description This attribute indicates the cumulative number of downlink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma nbSamples (nbS)

Description This attribute indicates how many samples were taken during the statistics collection interval.

This value can be used with the cumulative attribute for average calculs.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma llcPacketsUp (llcPktUp)

Description This attribute counts the LLC packets reassembled and transmitted to the LLC relay during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma dataBlocksUp (dataBUp)

Description This attribute counts the uplink RLC data blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma controlBlocksUp (ctrlBUp)

Description This attribute counts the uplink RLC control blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma invalidBlocksUp (invalidBUp)

Description This attribute counts the uplink invalid radio blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **invalidProtocolErrorBlocksUp (invalidProtErrBUp)**

Description — This attribute counts the uplink invalid radio blocks received with invalid RLC protocol during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **outOfSequenceBlocksUp (outOfSeqBUp)**

Description — This attribute counts the data blocks received uplink with Block Sequence Number outside the received window during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **packetAckNackUp (pktANUp)**

Description — This attribute counts the PACKET-UPLINK-ACK-NACK messages received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **totalRetransmissionRequested (totRtxReq)**

Description — This attribute counts the RLC/MAC block retransmission requests during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUpRxQual (cumUpRxQual)**

Description — This attribute indicates the cumulative uplink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUpRxLev (cumUpRxLev)**

Description — This attribute indicates the cumulative uplink RxLev value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **nbSamplesUpQuality (nbSamplesUpQuality)**

Description — This attribute counts the samples for RxQual and RxLev cumulative values during the statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **llcPacketsDn (llcPktDn)**

Description — This attribute counts the LLC packets segmented into RLC data blocks received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **dataBlocksDn (dataBDn)**

Description — This attribute counts the downlink RLC data blocks transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **controlBlocksDn (ctrlBDn)**

Description — This attribute counts the downlink RLC control blocks transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **retransmittedDataBlocksDn (rtxDataBDn)**

Description — This attribute counts the data blocks retransmitted downlink during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **packetAckNackDn (pktANDn)**

Description — This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeDnRxQual (cumDnRxQual)**

Description — This attribute indicates the cumulative downlink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **nbSamplesDnQuality (nbSamplesDnQuality)**

Description — This attribute counts the samples for RxQual cumulative values during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **tbfNormalReleaseUp (tbfNormRelUp)**

Description — This attribute counts the uplink TBFs which terminated normally during the statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **tbfNormalReleaseDn (tbfNormRelDn)**

Description — This attribute counts the downlink TBFs which terminated normally during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **noPacketResourceReq (noPktResReq)**

Description — This attribute counts the TBFs abnormally released due to non receipt of Packet Resource Request during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComNN002Max (lOCNN002Max)**

Description — This attribute counts the TBFs abnormally released due to V(Q) non progression during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3169 (lOCT3169)**

Description — This attribute counts the TBFs abnormally released due to timer T3169 expiry during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComNT0001 (lOCNT0001)**

Description — This attribute counts the TBFs abnormally released due to NT0001 timer expiry during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3195 (lOCT3195)**

Description — This attribute counts the TBFs abnormally released due to T3195 timer expiry during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3191 (lOCT3191)**

Description — This attribute counts the TBFs abnormally released due to T3191 timer expiry during the statistics collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Ccch

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell Ccch component.

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmediateAssignment (immAssUp)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmAssigRejectNoPdch (noPdch)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmAssigRejectNoTs (noTs)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmAssigRejectNoTbf (noTbf)**

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **channelRequest (chanReq)**

Description — This attribute counts CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetResourceRequest (pktResReq)**

Description — This attribute counts PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **deleteIndicationUp (delIndUp)**

Description — This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped during the statistics collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetUpAssignment (pktUpAss)**

Description This attribute counts PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two_phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoPdch (pktNoPdch)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoTs (pktNoTs)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoTbf (pktUpNoTbf)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfImmediateAssignment (immAssDn)**

Description This attribute counts IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **pagingRequest (pagReq)**

Description This attribute counts PAGING-REQUEST messages generated by the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **deleteIndicationDn (delIndDn)**

Description — This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetDnAssignment (pktDnAss)**

Description — This attribute counts PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment phase during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)**

Description — This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoTs (pktDnNoTs)**

Description — This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)**

Description — This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity

Description — The statistics record generated by the PcGprsTransportLayer NetworkServiceEntity component.

ATTRIBUTE PcGtl Nse **octetsToSgsn (octsTxSgsn)**

Description — This attribute counts the octets sent to the Serving GPRS Support Node (SGSN) by all the Network Service Virtual Connections (NS-VCs) served by this Network Service Entity (NSE). This counter counts the events in the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse octetsFromSgsn (octsRxSgsn)

Description This attribute counts the octets received from the Serving GPRS Support Node's (SGSN) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection

Description The statistics record generated by the PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection component.

ATTRIBUTE PcGtl Nse Nsvc unitDatasFromSgsn (unitDataRxSgsn)

Description This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Serving GPRS Support Node (SGSN) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc unitDatasToSgsn (unitDataTxSgsn)

Description This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc octetsFromSgsn (octsRxSgsn)

Description This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Serving GPRS Support Node (SGSN) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc octetsToSgsn (octsTxSgsn)

Description This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were sent to the Serving GPRS Support Node (SGSN) in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS PppIwf Framer

Description The statistics record generated by the PppIwf Framer component.

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ATTRIBUTE Piwf Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Piwf Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Piwf Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Piwf Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Piwf Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS PppIwf MlpppFramer

Description — The statistics record generated by the PppIwf MlpppFramer component.

ATTRIBUTE Piwf MlFramer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Piwf MlFramer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

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ATTRIBUTE Piwf MIFramer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Piwf MIFramer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Piwf MIFramer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3

Description — The statistics record generated by the SignallingSystem7 MessageTransferPartLayer3 component.

ATTRIBUTE Ss7 Mtp3 linkSetsUnavailable (lsUnavail)

Description — This attribute indicates the number of linkset unavailable conditions over the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3 Linkset Link

Description — The statistics record generated by the SignallingSystem7 MessageTransferPartLayer3 Linkset Link component.

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusRx

Description — This attribute indicates the number of Protocol Data Units (PDUs) received from layer 2 over the collection interval.

This includes the PDUs with and without user payload.

Values — Decimal (0..4294967295)

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ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusRx

Description — This attribute indicates the number of Protocol Data Units (PDUs) with payload received from layer 2 over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusTx

Description — This attribute indicates the number of Protocol Data Units (PDUs) sent to layer 2 over the collection interval.

This includes PDUs with and without user payload.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusTx

Description — This attribute indicates the number of Protocol Data Units (PDUs) with payload sent to layer 2 over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk invalidPdusRx

Description — This attribute indicates the number of number of invalid Protocol Data Units received over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk sltFailures

Description — This attribute indicates the number of signalling link test message failure conditions over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk changeovers

Description — This attribute indicates the number of link changeover conditions over the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS SignallingSystem7 SignallingConnControlPart

Description — The statistics record generated by the SignallingSystem7 SignallingConnControlPart component.

ATTRIBUTE Ss7 Sccp activeConnections

Description — This attribute indicates the number of the current open signalling connections for the *Ss7SignallingConnControlPart c*omponent at the end of the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp rejectedConnections

Description This attribute indicates the number of rejected signalling connections for the *Ss7SignallingConnControlPart* component over the collection interval. The reasons include the subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on, at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp maxConnectionsExhausted

Description This attribute indicates the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit specified by the attribute *maxConnections,* over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp lostConnections

Description This attribute indicates the number of the open signalling connections lost due to unavailability of the SCCP Subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp invalidMessages

Description This attribute indicates the number of invalid (syntax error or undecodable) messages received over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp messagesTx

Description This attribute indicates the number of the messages sent to layer 3 over the collection interval. This includes maintenance messages.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp payloadMessagesTx

Description This attribute indicates the number of payload messages transmitted over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp messagesRx

Description This attribute indicates the number of the messages received from layer 3 over the collection interval. This includes maintenance messages.

Values Decimal (0..4294967295)

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ATTRIBUTE Ss7 Sccp payloadMessagesRx

Description — This attribute indicates the number of payload messages received over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp localRoutingFailures

Description — This attribute indicates the number of the routing failures to the local subsystem over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp remoteRoutingFailures

Description — This attribute indicates the number of the routing failures to the remote subsystem over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp attemptedConnections (attCon)

Description — This attribute indicates the number of signalling connections that this *Ss7SignallingConnControlPart c*omponent has attempted to establish during the collection interval.

Values — Decimal (0..4294967295)

COLLECTED STATS SignallingSystem7 SaalNni

Description — The statistics record generated by the SignallingSystem7 SaalNni component.

ATTRIBUTE Ss7 SaalNni insvFailures

Description — This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pdusTx

Description — This attribute indicates the number of protocol data units transmitted over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pdusRx

Description — This attribute indicates the number of protocol data units received over the collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE Ss7 SaalNni pduOctetsTx

Description	This attribute indicates the number of payload PDU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pduOctetsRx

Description	This attribute indicates the number of payload PDU octets received over the collection interval.
Values	Decimal (0..4294967295)

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COMPONENT HIERARCHY (EM)

Scope	Device
Description	*Em/string* This component represents the local node. An instance of the *EM* component class (with the local node name as its instance string) is automatically created as the root of the component hierarchy; that is, all of the top level components are its subcomponents. The local node name is provisioned as the *nodeName* attribute of the *ModuleData* component. An operator need not enter the *EM* component at the start of a component name; the local node is assumed by default. However, to specify some

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	other node, it must be entered. Similarly, on output, the local node name is suppressed.
Mib	no_mib
Subcomponents	RncInterfaceNode (RncIn) CpdsNode (Cpds) ProvisioningSystem (Prov) Shelf Software (Sw) ModuleData (Mod) NetworkManagementInterfaceSystem (Nmis) Time (Time) Collector (Col) ActiveAlarmServices (AAServ)
Opt. Subcomp.	Router (Rtr) PortBridgeGroup (Pbg) EthernetTransportSystem (Ets) LogicalProcessor (Lp) AccessControl (Ac) NetworkSynchronization (NS) Routing (Rtg) CallRouter (CR) VoiceNetworkingCallServer (Vncs) IpInterfaceOverFrameRelay (IpiFr) IpInterfaceOverVc (Ipivc) Trunk (Trk) DpnGateway (DpnGate) FrameRelayNni (FrNni) FrameRelayUni (FrUni) FrameRelayAtmInterface (FrAtm) VoiceService (Vs) BitTransparentDataService (Btds) HdlcTransparentDataService (Htds) X25Dte AtmRouting (ARtg) VirtualRouter (Vr) FrameRelayDte (FrDte) PointToPointProtocol (Ppp) ClusterBridge (CB) PseudoBridge (PB) LanApplication (La) RemoteServerAgent (Rsa) FrMux AtmInterface (AtmIf) SignallingChannel (SigChan) VoiceRoute (VRoute) VoiceSubroute (Vsr) AtmMultiprotocolEncapsulation (AtmMpe) Aal1CircuitEmulationService (Aal1Ces) DataSignallingChannel (DataSigChan)

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McsManager (McsMgr)
MpaNetworkLink (MpanI)
LanEmulationClient (Lec)
NarrowbandServicesTrunkOverATM (Nsta)
GsmIwfCallServer (GsmCs)
GsmIwfBearerChannel (GsmBc)
Dcme
DcmeLink (Dcl)
HuntGroup (Hg)
CallRedirectionServer (Crs)
VirtualMedia (Vm)
AutomaticProtectionSwitching (Aps)
TdmaIwfCallServer (TdmaCs)
TdmaIwfBearerChannel (TdmaBc)
RoutingGateway (RGty)
PCUSupportApplication (Pcusa)
PacketControlUnitSupportNode (Pcusn)
PcGprsTransportLayer (PcGtl)
TdmaIwfFcBearerChannel (TdmaFcBc)
Layer2TunnelingProtocolAccessConcentrator (Lac)
MaintenanceMonitorTx (MmTx)
FrameRelayIpServer (FrIpServer)
PppIwf (Piwf)
IuxInterface (IuxIf)
DualLpEquipmentProtection (Dlep)
IpDlciGroup (IpDlciGrp)
LocalMedia
ServiceTrace (SrvTrace)
SignallingSystem7 (Ss7)
IuPc (IuPc)
LpGroup (LpG)
RoutineExerciser (Rex)
VcTester (Vct)
LineAutomaticProtectionSwitching (Laps)

Dyn. Subcomp.

FileSystem (Fs)
TransportResource (Trm)
NumberingPlanIndicator (Npi)
LpPair (LpP)

Common Verbs

Help
List

Common Verbs

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Appendix: Data types

Attributes have data types that specify the structure of an attribute's data (for example, decimal, hexadecimal, enumeration, vector and array). Component instances also have data types.

The appendix is organized by data type. Each data type description includes information on the nature of the data type (that is, its structure and what it represents), and gives examples.

Attribute value data types

At their highest level, data types can be divided into *single-value* data types and *multiple-value* data types, as follows:

- Single-value data types represent a single value for the attribute. This group consists of the following:
  - signed integer
  - integer sequence
  - decimal number
  - fixed point decimal
  - hexadecimal number
  - hexadecimal string
  - dashed hexadecimal string
  - IP address
  - enumeration
  - string
  - Extended string
  - BCD
  - component name
  - link
  - time

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- Multiple-value data types are types that have more than one value associated with the attribute. Included in this group are:
  - set of...
  - list of...
  - vector of...
  - array of...
  - replicated

Component instance value data types

Component instance value data types represent a single value for the component. For details, refer to Component name type (page 580). Included in this group are:

- signed integer
- integer sequence
- decimal number
- hexadecimal number
- hexadecimal string
- dashed hexadecimal string
- IP address
- enumeration
- string
- BCD
- time

Component instances have one multiple-value data type: it is the multi-indexed component.

Syntax conventions

All command descriptions in this chapter follow these conventions:

- **bold** indicates a keyword explicitly typed by the operator
- square brackets, [], indicate optional parameters
- curled brackets, { }, indicates a choice of one of the items inside the brackets
- *<italic>* indicates a user-specified parameter
- an asterisk, *, indicates one or more of the previous items unless otherwise specified

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Signed integer type

The *signed integer* type represents a 32-bit signed integer value. The supported values range from -2,147,483,648 to +2,147,483,647. On a text interface device, a signed integer type appears as follows:

attribute_name attribute_value

where:

attribute_value = [<sign>]<digit> [<digit>]* (that is, one or more digits)

where

sign = one of { **+, -** }

digit = one of { **0, 1, 2, 3, 4, 5, 6, 7, 8, 9** }

Examples
0, -0, +0, 00000

-123, 123, +123, 000123

Integer sequence type

The *integer sequence* type is used for Decnet addresses, AppleTalk addresses, and ObjectIds. On a text interface device, an integer sequence type appears as follows:

attribute_name attribute_value

where

attribute_value = <number>[<period><number>...]

where

number = ranges from { **0** to **4,294,967,295** }

period = { **.** }

Examples
1.3.5.1.2.1.10.18
(object identifier for ISO.org.dod.internet.mgmt.
Mib-2.transmission.ds1)

65535.255(highest AppleTalk address)

63.1023(highest DECnet address)

Decimal number type

The *decimal number* type represents a 32-bit or 64-bit decimal value. On a text interface device, you can set a decimal number type as follows:

set component_name attribute_name attribute_value

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where:
attribute_value = <digit> [<digit>]* (that is, one or more digits)
digit = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}

Example

> set lp/3 customerIdentifier 55

Fixed point decimal type

The *fixed point decimal* type represents a scaled decimal number. On a text interface device, a fixed point decimal type is entered as follows:

set component_name attribute_name attribute_value

where:

attribute_value = <digits> [.<digits>]

digits = one or more of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}

Example
1.234

Hexadecimal number type

The *hex number* type represents a 32-bit numeric value which is input and output as a hexadecimal number. On a text interface device, a hex number type is entered as follows:

set component_name attribute_name attribute_value

where:

attribute_value = <hex_digit><hex_digit> [<hex_digit><hex_digit>] * (that is, from one to four pairs of hex digits)

hex_digit = one of { **0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f, A, B, C, D, E, F**}

Example
aC15

Hexadecimal string type

The *hex string* type represents an *integer* value which is input and output as a hexadecimal number. On a text interface device, a hex string type is entered as follows:

attribute_name attribute_value

where:

attribute_value = [<hex_digit><hex_digit>] * (that is, zero or more pairs of hex digits)

hex_digit = one of { **0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f, A, B, C, D, E, F**}

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Example
15aC

Dashed hexadecimal string type

The *dashed hexadecimal string* type allows for IEEE802MAC addresses to be parsed and formatted. On a text interface device, a dashed hexadecimal string type appears as follows:

attribute_name attribute_value

where:

attribute_value = [<quote>] <hexDigit><hexDigit>[<dash> <hexDigit><hexDigit>...] [<quote>]

where:

quote = { **“** }

hexDigit = { **0 - 9, a - f, A - F** }

dash = { **-** }

Examples
3a

3a-fc

“ “ (zero hex characters for use within list, vectors, arrays, and replicated attributes)

3abc(missing dash, will be formatted with dash)

IP address type

The *IP address* type represents an IP address. On a text interface device, you can set an IP address type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = <number>.<number>.<number>.<number>
number = <digit>[<digit>[<digit>]] (that is, up to three digits. The value range is 0-255.)

Example
> set ipivc ipaddress 47.208.133.201

Enumeration type

The *enumeration* type represents a finite set of constants that are referred to symbolically by their name. On a text interface device, you can set an enumeration type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = <name> (the constant corresponding to desired value)

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Example

> set shelf card/5 cardType DS1

String type

The *string* type represents an ASCII string. On a text interface device, you can set a string type as follows:

set component_name attribute_name attribute_value

where:

- for an ASCII string

  attribute_value = <ascii_only>
  ascii_only = [<printable_character>]*

  Note: If an ASCII string type contains the characters, {space,(!~/-} or), then the entire string must be enclosed by double quotes.

  printable_character = any printable character on the keyboard, including the space (no carriage returns, line feeds, tabs, or control characters)

  Note: For the component string instance values, characters are converted to upper case. Except for a single $, white space, empty strings, and < > / : * ” all string data type characters are valid.

- for a HEX string

  attribute_value = <hex>
  hex = [<hex_digit> <hex_digit>]* [<hex_ascii_toggle> <ascii_only> [<hex_ascii_toggle> <hex>]]*

  Note: If a hex string type contains the characters, {space,(!~/-} or), then the entire string must be enclosed by double quotes.

  hex_digit = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f, A, B, C, D, E, F}

  hex_ascii_toggle = \x

Example

> set ac userid/JOE loginDirectory “/spooled/open”

Note: If the string is used as an attribute value, it is case-sensitive (as in the above example: “/spooled/open”). If the string is used as an instance value, it is not case-sensitive (as in the above example: JOE).

Extended string type

The *extended string* type allows for the parsing and displaying of mostly ASCII characters. However, extended characters are parsed and displayed through an escape syntax. The extended string type looks like a *string* type with an escape mechanism to enter non-ASCII characters. On a text interface device, an extended string type appears as follows:

attribute_name attribute_value

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where:

attribute_value = <quoted string> | <unquoted string>]

where:

quoted string = { <quote> <any char> <any char>...<quote> }

where

quote = { " }

any char = { <ascii char> | <escaped hex> | <exception> }

ascii char = { any ASCII character other than <slash> or <quote> }

escaped hex = { <slash><hex digit><hex digit> }

exception = { <slash><slash> | <slash><quote> }

slash = { / }

hex digit = { a-f | A-F | 0-9 }

unquoted string = { <char><char><char>... }

char = { <alphanumeric> | <escaped hex> | <escaped ascii> }

alphanumeric = { a-z | A-Z | 0-9 }

escaped ascii = { <slash> <other ascii character> }

other ascii character = { any non-alphanumeric char }

Examples

Hello

"Hello, how are you?"(spaces and punctuation marks)

R\e9sum\E9(Résumé)

" R\e9sum\e9"(Résumé)

"She said \"Hello\"."(the " character)

"\ \"(the \ character)

hello\ there(the space character)

"" empty

Note: In some cases, the output may contain unexpected characters. For example, "é" may not represent "\e9" on some platforms.

Binary-coded decimal type

The binary-coded decimal (BCD) type represents a BCD entity (such as DNA). On a text interface device, you can set a BCD type as follows:

set component_name attribute_name attribute_value

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where:

- for wildcarded BCD:

  attribute_value = [<digit>]* (that is, zero or more digits)
  digit = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ?}

Example

> set callRouter NPI/x121 dna/37498?736?53

- for other BCD:

  attribute_value = [<digit>]* (that is, zero or more digits)
  digit = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}

Example

> set fruni/34 dna dataNetworkAddress 374984736253

Component name type

The component name type represents the full name of a given component. On a text interface device, you can set a component name type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = [<component_type>[<separator> <component_instance>]]*
component_type = the type of component
separator = /
component_instance = simple or multi-indexed

simple = <decimal value> (see Decimal number type (page 575))
OR <enum_value> (see Enumeration type (page 577))
OR <hex_value> (see Hexadecimal string type (page 576))
OR <dashed_hex_string_value> (see Dashed hexadecimal string type (page 577))
OR <ip_address_value> (see IP address type (page 577))
OR <string_value> (see String type (page 578))
OR <bcd_value> (see Binary-coded decimal type (page 579))
OR <signed_integer_value> (see Signed integer type (page 575))
OR <integer_sequence_value> (see Integer sequence type (page 575))

multi-indexed = <simple>, <simple>, ...

Example

> set trk/111 addressplan addressPlanName routing dpn

Link type

The link type represents a bidirectional pointer between two components. The value of this data type consists of a component name. This “remote” component must contain an attribute whose value is compatible with the “local” component’s attribute value.

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The text interface format for the link type is identical to that of the component name type.

Example

> set lp/1 mainCard shelf card/1

Time type

The time type represents a specific absolute time. On the text interface device, you can set a time type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = [<date> <separator>] <time> OR <date> [<separator> <time>]
date = <year> <dash> <month> <dash> <day>
year = <digit><digit><digit><digit>
month = <digit><digit>
day = <digit><digit>
separator = one of {SPACE, T}
time = <hours> [<colon> <minutes> [<colon> <seconds>]]
hours = <digit><digit>
minutes = <digit><digit>
seconds = <digit><digit>
digit = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}
dash = -
colon = :

Example

> set time networkTime 1995-09-11 13:34:02

Set of...type

The set of... type represents a collection of values whose elements must be from a fixed, discrete range of values. Each value in the set must only appear once. For example, if the set represents the 12 months of the year, then July, one month in the set, could only appear once.

The set of... type is available for the following single-value data types:

- decimal (see Decimal number type (page 575))
- enumeration (see Enumeration type (page 577))
- hex number (see Hexadecimal number type (page 576).)

All possible set type attribute values and the defaults are defined. For example, under the components *Nmis Session* the *dataStreams* attribute values are:

Set of alarm (ala) debug (deb) log scn
Default No default

There are no default values for the above example.

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On a text interface device, you can set a set of... type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = <set_value> [<set_value>]*
set_value = <empty> (to empty the set) OR <delete> <value> (to delete a value) OR <value> (to add a value to the set)
empty = !
delete= ~
value = <decimal_value> OR <enumeration_value>

Note: You may be unfamiliar with the use of the tilde "~" character to remove values, therefore exercise extreme caution when using it in string types.

Example
The following example uses enum as the base data type.

> set nmis telnet session/1 dataStreams !

True sets and sets of flags
True sets only list those values that are ON. Sets of flags list every value. In tabular format, "*" indicates ON and "." indicates OFF; in nontabular format, nothing indicates ON, and "~" indicates ON. The figure, True sets (page 582), shows the tabular and nontabular output of true sets and the figure, Sets of flags (page 583), shows the tabular and nontabular output of sets of flags.

True sets

True set - tabular output

```
+==+-----+-----------------------------------------
|Lp| Osi |Response
|  |Avail|
+==+-----+-----------------------------------------
| 0|     |
| 2|     |
ok             1995-10-26 19:30:04.91
```

*** = ON**
. = OFF

True set - nontabular output

```
Lp/0
  availabilityStatus =
Lp/2
  availabilityStatus =
ok             1995-10-26 19:30:22.44
```

nothing = ON
~ = OFF

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Sets of flags

Set of flags - tabular output

```
+=======+=======+================================
|Session| data  |Response
|       |Streams|
|       |a d l s|
|       |l e o c|
|       |a b g n|
+=======+=======+================================
|      1|* . . .|
|      2|* . . .|
|      3|* . . .|
|      4|. . . .|                                  * = ON
|      5|* . . .|                                  . = OFF
ok              1995-10-26 19:26:03.78
```

Set of flags -nontabular output

```
Nmis Telnet Session/1
   dataStreams = ala ~deb ~log ~scn
Nmis Telnet Session/2
   dataStreams = ala ~deb ~log ~scn
Nmis Telnet Session/3
   dataStreams = ala ~deb ~log ~scn
Nmis Telnet Session/4
   dataStreams = ~ala ~deb ~log ~scn
Nmis Telnet Session/5
   dataStreams = ala ~deb ~log ~scn
ok              1995-10-26 19:26:47.43

                                                nothing = ON
                                                      ~ = OFF
```

List of... type

The list of... type represents a collection of values whose elements (in general) are not restricted to any fixed range. Each value in the list must only appear once. The number of values in a list may or may not be bounded.The list of... type is available for the following single-value data types:

- decimal (see Decimal number type (page 575))
- hex (see Hexadecimal string type (page 576))
- hex number (see Hexadecimal number type (page 576))
- dashed hex strings (see Dashed hexadecimal string type (page 577))
- IP Address (see IP address type (page 577))
- enumeration (see Enumeration type (page 577))
- string (see String type (page 578))
- extended ASCII string (see Extended string type (page 578))
- integer sequence (see Integer sequence type (page 575))

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- signed numbers (see Signed integer type (page 575))
- fixed point decimal (see Fixed point decimal type (page 576))
- BCD (see Binary-coded decimal type (page 579))
- component name (see Component name type (page 580))
- link (see Link type (page 580))
- time (see Time type (page 581))

All possible values are specified for list of..types. If the size of the list is not specified, the list of values is limitless. The default value appears below the list of values.

Under the component *ModuleData*, the attribute *nodeId* defines all possible values as any number between 1 and 4095:

List of Decimal (1..4095)
Default No default

The default value is listed under the list of possible values. There are no default values set for the above example.

Under the Components *ModuleData, VirtualCircuitSystem*, the complete list of values for the attribute *segmentSize* appears as follows:

List of 1 2 4 6 8 16 32 64 128 256 512 1024 2048 4096
Default 128

The default value is 128.

On the text interface device, you can set a list of... type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = <list_value> [<list_value>]*
list_value = <empty> (to empty the list) OR <delete> <value> (to delete a value) OR <value> (to add a value to the list)
empty = !
delete = ~
value = <any single-value data type>

Example

> set sw avList base_AA0042 networking_AA0042 frameRelay_AA0042

Vector of... type

The vector of... type represents an indexed collection of values. The number of values in a vector is always fixed.

The vector of... type is available for the following types:

- decimal (see Decimal number type (page 575))

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- fixed point decimal (see Fixed point decimal type (page 576))
- hex (see Hexadecimal string type (page 576))
- hex numbers (see Hexadecimal number type (page 576))
- dashed hex strings (see Dashed hexadecimal string type (page 577))
- IP address (see IP address type (page 577))
- enumeration (see Enumeration type (page 577))
- string (see String type (page 578))
- extended ASCII string (see Extended string type (page 578))
- signed number (see Signed integer type (page 575))
- BCD (see Binary-coded decimal type (page 579))

A vector of... type's index can be of the following types:

- decimal (see Decimal number type (page 575))
- enumeration (see Enumeration type (page 577))

The index values are included in the vector value information. The attribute c*onnectionPoolCapacity* belongs to the *AtmResourceControl* Component which resides under the *LogicalProcessor* component. The values are written as follows:

Vector of Decimal (0;512..4096)
Index Decimal (0..2)
Default ([3] 1536)

Vector of refers to the attribute type. Decimal refers to the type of value (decimal or enumeration). The numbers that appear in parenthesis define the possible values that each vector value may have. In the example, each vector value may be 0 or any number between 512 and 4096.

You can determine the size of the vector from the index numbers. The index numbers in the example are 0, 1 and 2. Therefore, there are 3 index values for this attribute.

The default values for the example is 1536. The 3 in square brackets denotes that the proceeding value is used the next three times. The vector default numbers for the example look like this:

Index	Attribute value
0	1536
1	1536
2	1536

Index values may be enumerated values or decimal values. The *frmSize* attribute under the *Test* component under *AtmIf* appears as follows:

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Vector of Decimal (16..16000)
Index lowPriority
highPriority
Default (lowPriority: 8192, highPriority: 56)

The attribute values can be any number between 16 and 16,000. There are 2 index values; each one has a unique default value. This vector's default values can be illustrated as follows:

Index value	Attribute value
low priority	8192
high priority	56

On a text interface device, you can set a vector of... type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = <vector_value> [<vector_value>]*
vector_value = <index> <value>
index = <decimal_value> OR <enumeration_value>
value = <single-value data type>

Example
> set shelf card/5 test frmSize lowPriority 8100 highPriority 65

Array of... type

The array of... type represents a double-indexed (two-dimensional) collection of values. The number of values in an array is always fixed.

The array of... type is available for the following types:

- decimal (see Decimal number type (page 575))
- fixed point decimal (see Fixed point decimal type (page 576))
- hex (see Hexadecimal string type (page 576))
- hex numbers (see Hexadecimal number type (page 576))
- dashed hex strings (see Dashed hexadecimal string type (page 577))
- IP address (see IP address type (page 577))
- enumeration (see Enumeration type (page 577))
- string (see String type (page 578))
- extended ASCII string (see Extended string type (page 578))
- signed number (see Signed integer type (page 575))
- BCD (see Binary-coded decimal type (page 579))

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An array of... type's index can be of the following types:

- decimal (see Decimal number type (page 575))
- enumeration (see Enumeration type (page 577))

Read the values of Nortel Multiservice Switch arrays from left to right.

The values of the *windowSize* attribute of the component *WindowOptions*, under the *ModuleData* component appears as follows:

Array of Decimal (1..63)
Row packet Size (pkt) [16 32 64 128 256 512 1024 2048 4096 8192 32768 65535]
Column throughput class (tpt) [Decimal (0..15)]
Default ([12*16] 4)

In the first line, the attribute type is defined as an array with possible values between 1 and 63 inclusive.

The index name for the row is packet size. The index numbers are listed, as they appear from left to right.

The column is named throughput class. The index numbers, from top to bottom, begin at 0 and increment by one up to and including 15.

All default values in the example are 4. In square brackets the 12 refers to the number of index items across the row. The 16 refers to the number of index items in the column. The 4 refers to the default value. Each default value is displayed when the values of each cell are different.

On a text interface, you can set an array of... type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = <array_value> [<array_value>]*
array_value = <index_name> <index> <index_name> <index> <value>
index = <decimal_value> OR <enumeration_value>
value = <single-value data type>

Example

> set mod vcs windowSize packetSize 16 throughputClass 0 8

Replicated types

A replicated type is a general indexed collection of values. The number of values in the replicated type (in general) is not set.

Replicated types support the following types for index and value:

- decimal (see Decimal number type (page 575))
- fixed point decimal (see Fixed point decimal type (page 576))

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- hex (see Hexadecimal string type (page 576))
- dashed hex strings (see Dashed hexadecimal string type (page 577))
- IP address (see IP address type (page 577))
- enumeration (see Enumeration type (page 577))
- string (see String type (page 578))
- extended ASCII string (see Extended string type (page 578))
- integer sequence (see Integer sequence type (page 575))
- signed number (see Signed integer type (page 575))
- BCD (see Binary-coded decimal type (page 579))
- component name (see Component name type (page 580))
- time (see Time type (page 581))

On a text interface device, you can set a replicated type as follows:

set component_name attribute_name attribute_value

where:
attribute_value = <empty> (to empty all values) OR <remove> <index> (to delete a value) OR <index> <value> (to add a value)
empty = !
remove = ~
index = <any single-value data type>
value = <any single-value data type>

Example

> set fruni/34 dlci/18 dc natlFax 1 64

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Overview

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Job function: Product Fundamentals
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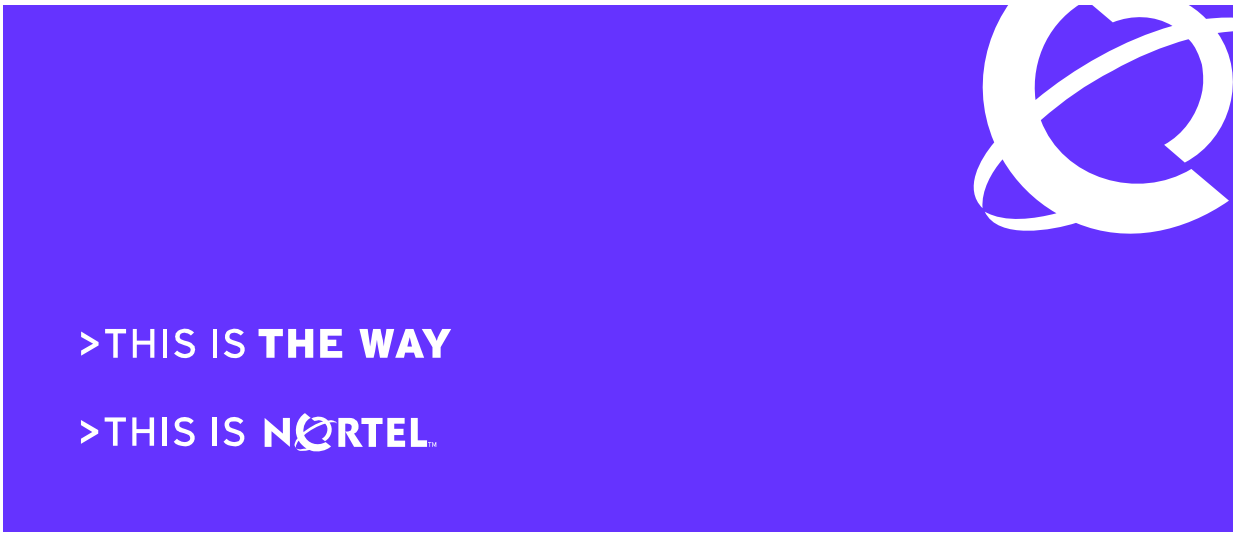

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Pbg

NN10600-060

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Type: NTP
Language type: U.S. English

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COMPONENT PortBridgeGroup (Pbg)

Instance	Decimal (0..15999)
Groups	GROUP Pbg CustomerIdentifierData (CidData) GROUP Pbg Provisioned (Prov) GROUP Pbg OsiState (State)
Scope	Device
Description	*PortBridgeGroup/n* This component manages the port bridging of a SONET interface. During software migration, the *PortBridgeGroup* component ensures that the traffic in and out of a SONET line on a migrating card is bridged to the card that is providing service. **Note**: There must be two *Pbg* components provisioned to achieve a Hitless Software Migration. **Note**: The *Lp/n Sonet/m Test* component functionality is not supported when that line is provisioned as either working or protection line of the *Pbg* component.
Mib	no_mib
Opt. Subcomp.	COMPONENT Pbg Sts
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Pbg CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

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Mib	no_mib

ATTRIBUTE Pbg customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Pbg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Pbg* component.
Mib	no_mib

ATTRIBUTE Pbg workingLine (working)

Access	Read and write
Criticality	Process
Description	This attribute is a link to the *Sonet* component that provides the working line for the *Pbg* component. A value must be defined for this attribute. A pair of valid *workingLine* and *bridgeLine* pairs must exist. The following semantic checks exist for the *workingLine* and *bridgeLine* attributes: - the *workingLine* and *bridgeLine* attributes must link ports on two different LPs. - the instance numbers of *Sonet* and *SonetBridge* must match (for example, *Lp*/m *Sonet*/0 and *Lp*/n *SonetBridge*/0).

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- the *Sonet* component specified by the *workingLine* attribute must not have any subcomponents.
- each LP component must link to exactly one card (the *Lp/n spareCard* attribute is not allowed to be set on either LP*).*
- each LP component must link to the same type of card (the *Shelf Card/n cardType* attribute must be identical for both cards).
- the two cards must be in adjacent slots in the shelf, with the lower-numbered slot being an even number.
- each LP component must link to the same *LogicalProcessorType* component.
- the connection pool attributes of the *Lp/n Eng Arc* components for the two LPs must have the same values.

Mib	no_mib
Values	Link (Hardware, lineAutomaticProtectionSwitch)
Default	No default

ATTRIBUTE Pbg bridgeLine (bridge)

Access	Read and write
Criticality	Process
Description	This attribute is a link to the *SonetBridge* component, which provides port bridging for the *Pbg* component. A value must be defined for this attribute. A pair of valid *workingLine* and *bridgeLine* pairs must exist as described in the *workingLine* attribute.
Mib	no_mib
Values	Link (Hardware, portBridgeGroupLink)
Default	No default

GROUP Pbg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Pbg operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pbg usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Pbg availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions,

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	the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.
Mib	no_mib
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Pbg proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: no_mib

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

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Default	No default

ATTRIBUTE Pbg alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	no_mib
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Pbg standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

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The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: no_mib

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Pbg unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: no_mib

Values:
false
true

Default: false

COMPONENT Pbg Sts

Instance: Decimal (0..11)

Groups:
GROUP Pbg Sts Provisioned (Prov)
GROUP Pbg Sts CustomerIdentifierData (CidData)
GROUP Pbg Sts OsiState (State)
GROUP Pbg Sts IfEntryProv (IfEntry)
GROUP Pbg Sts OperationalStatus (OperStatus)
GROUP Pbg Sts Operational (Oper)
GROUP Pbg Sts Statistics (Stats)
GROUP Pbg Sts Provisioned (Prov)

Scope: Device

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Description	*Lp/n Sonet/n Sts/n* *Laps/n Sts/n* *Pbg/n Sts/n* This component controls a path signal that is carried within a SONET signal. The instance number of the *Sts* component must be 0 for components on cards that do not support channelization. On FPs supporting channelization. the Sts index indicates the sub-channel within the main optical payload.
Mib	no_mib
Opt. Subcomp.	COMPONENT Pbg Sts AtmCell (Cell) COMPONENT Pbg Sts Vt1dot5
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Pbg Sts Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for the component.
Mib	no_mib

ATTRIBUTE Pbg Sts applicationFramerName (framer)

Access	Read and write
Description	This attribute defines which application is running on the path.
Mib	no_mib
Values	Link
Default	No default

GROUP Pbg Sts CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

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Mib	no_mib

ATTRIBUTE Pbg Sts customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Pbg Sts OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Pbg Sts operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pbg Sts usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	no_mib
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Pbg Sts availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which

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	represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.
Mib	no_mib
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Pbg Sts proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

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The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg Sts controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: no_mib

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Pbg Sts alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	no_mib
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Pbg Sts standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the

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backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	no_mib
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Pbg Sts unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	no_mib
Values	false true
Default	false

GROUP Pbg Sts IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Pbg Sts ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

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ATTRIBUTE Pbg Sts ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Pbg Sts OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Pbg Sts snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Pbg Sts Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	no_mib

ATTRIBUTE Pbg Sts lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have

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been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values:
on
off

Default: No default

ATTRIBUTE Pbg Sts rxAisAlarm (ais)

Access: Read only

Description

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values:
on
off

Default: No default

ATTRIBUTE Pbg Sts rxRfiAlarm (rfi)

Access: Read only

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Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values:
on
off

Default: No default

ATTRIBUTE Pbg Sts signalLabelMismatch (slm)

Access: Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

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The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values: on, off

Default: No default

ATTRIBUTE Pbg Sts txAis

Access: Read only

Description:

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values: on, off

Default: No default

ATTRIBUTE Pbg Sts txRdi

Access: Read only

Description:

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values: on, off

Default: No default

GROUP Pbg Sts Statistics (Stats)

Properties: Operational

Description:

This group contains the statistics data for the component.

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Mib	no_mib

ATTRIBUTE Pbg Sts pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Pbg Sts pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts pathUnavailSec (puas)

Access	Read only
Description	This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Pbg Sts pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathErrorFreeSec (fepefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathErroredSec (fepes)

Access	Read only

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Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Pbg Sts farEndPathSevErroredSec (fepses)

Access: Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Pbg Sts farEndPathAisLopSec (fepals)

Access: Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Pbg Sts farEndPathUnavailSec (fepuas)

Access: Read only

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Description	This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Pbg Sts Provisioned (ChProv)

Properties	Provisioned
Description	This group contains the provisioning data for *Sts* components provisioned under *Sonet* components that support channelization..
Mib	no_mib

ATTRIBUTE Pbg Sts txPathTrace

Access	Read and write
Description	This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. The path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SONET frames. At the remote end, the path trace is reassembled, and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued. The functionality supported by this attribute is not available.

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Mib	no_mib
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Pbg Sts expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	no_mib
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Pbg Sts concatNumber

Access	Read and write
Criticality	Process
Description	This attribute specifies the STS concatenation level for the *Sts* component on channelized cards. It must be set to a concatenation level supported by the FP upon which the *Sts* is defined, except for non-channelized cards, in which case it must be set to 0. For example, a value of 1 in this attribute would represent STS-1 concatenation, while a value of 3 would represent STS-3c, a value of 12 would represent STS-12c, and so forth. *Sts* channelization to the tributary level is supported only if this attribute is set to 1.
Mib	no_mib
Values	Decimal (0; 1; 3; 12; 48)
Default	No default

COMPONENT Pbg Sts AtmCell (Cell)

Groups	GROUP Pbg Sts Cell Provisioned (Prov) GROUP Pbg Sts Cell Operational (Oper) GROUP Pbg Sts Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM

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cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Pbg Sts Cell Provisioned (Prov)

Properties Provisioned

Description
This group contains the provisioning attributes for the *AtmCell* component.

Mib no_mib

ATTRIBUTE Pbg Sts Cell alarmActDelay (act)

Access Read and write

Description
This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib no_mib

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Pbg Sts Cell scrambleCellPayload (scramble)

Access Read and write

Description
Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

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Mib	no_mib
Values	off on
Default	No default

ATTRIBUTE Pbg Sts Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	no_mib
Values	off on
Default	off

ATTRIBUTE Pbg Sts Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	no_mib
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Pbg Sts Cell hecSampleInterval (hSample)

Access	Read and write

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Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Pbg Sts Cell hecErrorLimit (hLimit)

Access: Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Pbg Sts Cell lcdStateDelay (delay)

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The

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valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	no_mib
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Pbg Sts Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	no_mib
Values	Decimal (1..25)
Default	1

GROUP Pbg Sts Cell Operational (Oper)

Properties	Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib	no_mib

ATTRIBUTE Pbg Sts Cell lcdAlarm (lcd)

Access	Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure

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alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: no_mib

Values:
on
off

Default: off

GROUP Pbg Sts Cell Statistics (Stats)

Properties: Operational

Description:

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: no_mib

ATTRIBUTE Pbg Sts Cell uncorrectableHeaderErrors (ucErr)

Access: Read only

Description:

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Pbg Sts Cell transmitCellUtilization (txutil)

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Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Pbg Sts Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Pbg Sts Vt1dot5

Instance	l [Decimal (1..7)] m [Decimal (1..4)]
Groups	GROUP Pbg Sts Vt1dot5 CustomerIdentifierData (CidData) GROUP Pbg Sts Vt1dot5 OsiState (State) GROUP Pbg Sts Vt1dot5 IfEntryProv (IfEntry) GROUP Pbg Sts Vt1dot5 OperationalStatus (OperStatus) GROUP Pbg Sts Vt1dot5 Operational (Oper) GROUP Pbg Sts Vt1dot5 Statistics (Stats)
Scope	Device
Description	*Lp/n Sonet/n Sts/k Vt1dot5/l,m* *Laps/n Sts/k Vt1dot5/l,m*

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This component represents the *Vt1.5* low order path signal that is carried within a SONET signal.

Mib no_mib

Opt. Subcomp. COMPONENT Pbg Sts Vt1dot5 DS1

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Pbg Sts Vt1dot5 CustomerIdentifierData (CidData)

Properties Provisioned

Description This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 customerIdentifier (cid)

Access Read and write

Description This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib no_mib

Values Decimal (0; 1..8191)

Default 0

GROUP Pbg Sts Vt1dot5 OsiState (State)

Properties Operational

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Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pbg Sts Vt1dot5 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pbg Sts Vt1dot5 **usageState (osiUsage)**

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Pbg Sts Vt1dot5 **availabilityStatus (osiAvail)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

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The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	no_mib
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **Pbg Sts Vt1dot5** **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

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The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: no_mib

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 **alarmStatus (osiAlarm)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: no_mib

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

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Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	no_mib
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Pbg Sts Vt1dot5 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	no_mib
Values	false true
Default	false

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GROUP Pbg Sts Vt1dot5 **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Pbg Sts Vt1dot5 **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Pbg Sts Vt1dot5 **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

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Values	up down testing
Default	up

GROUP Pbg Sts Vt1dot5 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 rxAisAlarm

Access	Read only
Description	This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	no_mib
Values	on off
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 rxRdiAlarm

Access	Read only
Description	This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	no_mib
Values	on off
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 rxRfiAlarm

Access	Read only

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Description

This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib no_mib

Values on
off

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 unequippedAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib no_mib

Values on
off

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 traceIdMismatchAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib no_mib

Values on
off

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 lopAlarm

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Access	Read only
Description	This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	no_mib
Values	on off
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 txAis

Access	Read only
Description	This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency*.
Mib	no_mib
Values	on off
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 txRdi

Access	Read only
Description	This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is *off* when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency*.
Mib	no_mib
Values	on off
Default	No default

GROUP Pbg Sts Vt1dot5 Statistics (Stats)

Properties	Operational

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Description

This group contains the statistics data for the component.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 pathCodeViolations (pcv)

Access Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 pathErroredSec (pes)

Access Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

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ATTRIBUTE Pbg Sts Vt1dot5 pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than ***X*** PCVs or one or more LOP or path AIS defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 pathUnavailSec (puas)

Access	Read only
Description	This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Pbg Sts Vt1dot5 pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathErrorFreeSec (fepefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathErroredSec (fepes)

Access	Read only

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Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than ***X*** FEPCVs or one or more P-RDI defects. The value of ***X*** is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathUnavailSec (fepuas)

Access Read only

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Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathFailures (fepf)

Access: Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Pbg Sts Vt1dot5 DS1

Groups:
GROUP Pbg Sts Vt1dot5 DS1 Provisioned (Prov)
GROUP Pbg Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)
GROUP Pbg Sts Vt1dot5 DS1 AdminInfo (AdminInfo)
GROUP Pbg Sts Vt1dot5 DS1 IfEntryProv (IfEntry)
GROUP Pbg Sts Vt1dot5 DS1 OperationalStatus (OperStatus)
GROUP Pbg Sts Vt1dot5 DS1 OsiState (State)
GROUP Pbg Sts Vt1dot5 DS1 Operational (Oper)
GROUP Pbg Sts Vt1dot5 DS1 Statistics (Stats)

Scope: Application

Description

Lp/n DS3/n DS1/n
The *DS1* component controls and monitors a DS1 tributary of a

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channelized DS3 port on a Function Processor that supports channelization of a DS3.

Mib no_mib

Subcomponents COMPONENT Pbg Sts Vt1dot5 DS1 Channel (Chan)

Dyn. Subcomp. COMPONENT Pbg Sts Vt1dot5 DS1 Test (Test)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Pbg Sts Vt1dot5 DS1 Provisioned (Prov)

Properties Provisioned

Description

This group contains all of the provisioning data for a *DS1* component.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 lineType (lineType)

Access Read and write

Description

This attribute defines the framing of the DS1 tributary.
d4 defines a framing pattern of 12 frames per multiframe.
esf defines a framing pattern of 24 frames per multiframe.
d4Cas defines a framing pattern of 12 frames per multiframe with channel associated signalling.
esfCas defines a framing pattern of 24 frames per multiframe with channel associated signalling.
unframed defines an unknown framing pattern for clear channels.

For the ***4pDS3ChAtm*** card, only ***d4*** and ***esf*** framing patterns are permitted.

The ***4pDS3ChAal1*** card supports the ***d4*** and ***esf*** framing patterns, as well as ***unframed***.

Mib no_mib

Values
d4
esf
d4Cas
esfCas
unframed

Default esf

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ATTRIBUTE Pbg Sts Vt1dot5 DS1 **zeroCoding (zeroCoding)**

Access	Read and write
Criticality	Component
Description	This attribute defines the zero encoding on the DS1 tributary. ***bit7Stuffing*** sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8. ***none*** does no zero encoding, it does not change any value of the bits in the timeslot. The value ***none*** is compatible with any zero coding scheme which transports all 8 data bits in a timeslot (this would include both ***ami*** and ***b8zs*** values of the *DS1 zeroCoding* attribute).
Mib	no_mib
Values	bit7Stuffing none
Default	none

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **clockingSource (clockingSource)**

Access	Read and write
Description	This attribute specifies the source of the transmit clock for the DS1 tributary. When the clocking source is ***local***, the crystal on the port generates the clocking for the DS1 tributary. When the clocking source is ***line***, the port synchronizes to the clock from the DS1 tributary. When the clocking source is ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP. When the clocking source is ***sameAsDs3***, the Ds1 port's clock synchronizes to the same clock source as that of its parent Ds3 port. On a ***1pDS3C*** card, if the *NetworkSynchronization (NS)* component is present, the default value of this attribute will be ***module***; otherwise it will be ***line***. On a ***2pDS3cAal*** card, the only valid values are ***local*** and ***module***. If the *NS* component is present, the default value of this attribute will be ***module***; otherwise it will be ***local***. On the ***4pDS3Ch***, ***4pDS3ChAtm***, and ***4pDS3ChAal1*** cards, the only valid value is ***sameAsDs3***. This is because a DS1 must have the same clocking source as its parent DS3.
Mib	no_mib
Values	local line

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module
sameAsDs3

Default — No default

GROUP Pbg Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)

Properties — Provisioned

Description — This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib — no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 customerIdentifier (cid)

Access — Read and write

Description — This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib — no_mib

Values — Decimal (0; 1..8191)

Default — 0

GROUP Pbg Sts Vt1dot5 DS1 AdminInfo (AdminInfo)

Properties — Provisioned

Description — This group contains the attributes pertaining to the vendor of the equipment.

Mib — no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 vendor

Access — Read and write

Description — This is the name of the vendor supplying the facility.

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Mib	no_mib
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	no_mib
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 includeAdminInfoInAlarm

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.
Mib	no_mib
Values	no yes
Default	no

GROUP Pbg Sts Vt1dot5 DS1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

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ATTRIBUTE Pbg Sts Vt1dot5 DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Pbg Sts Vt1dot5 DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Pbg Sts Vt1dot5 DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **usageState (osiUsage)**

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	no_mib
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **Pbg Sts Vt1dot5 DS1** **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **controlStatus (osiCntrl)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	no_mib
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	no_mib
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: no_mib

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Pbg Sts Vt1dot5 DS1 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: no_mib

Values:
false
true

Default: false

GROUP Pbg Sts Vt1dot5 DS1 Operational (Oper)

Properties: Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib: no_mib

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ATTRIBUTE Pbg Sts Vt1dot5 DS1 **rxAisAlarm (rxAisAlarm)**

Access — Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib — no_mib

Values — on
off

Default — off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **lofAlarm (lofAlarm)**

Access — Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (2 out of 5 framing bits in error) have been detected for 3 seconds +/- 0.5 seconds. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib — no_mib

Values — on
off

Default — off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **rxRaiAlarm (rxRaiAlarm)**

Access — Read only

Description

This attribute indicates whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/-

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0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds. The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib no_mib

Values on
off

Default off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 txAisAlarm (txAisAlarm)

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the tributary is in a locked state.

Mib no_mib

Values on
off

Default off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 txRaiAlarm (txRaiAlarm)

Access Read only

Description

This attribute indicates whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the tributary detects a LOF alarm condition.

Mib no_mib

Values on
off

Default off

GROUP Pbg Sts Vt1dot5 DS1 Statistics (Stats)

Properties Operational

Description

This group contains the common statistical data for a component in a digital hierarchy interface.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 runningTime (runningTime)

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Access	Read only
Description	This attribute counts the number of seconds since the tributary was activated.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 errorFreeSec (efs)

Access	Read only
Description	This attribute counts the number of seconds that the tributary has been in an error free state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 erroredSec (es)

Access	Read only
Description	This attribute counts the number of errored seconds the tributary has counted since it was activated. An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 sevErroredSec (ses)

Access	Read only
Description	This attribute counts the number of severely errored seconds the tributary has counted since it was activated. A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Pbg Sts Vt1dot5 DS1 **sevErroredFrmSec (sefs)**

Access	Read only
Description	This attribute counts the number of severely errored framing seconds the tributary has counted since it was activated A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **unavailSec**

Access	Read only
Description	This attribute counts the total number of seconds that the tributary has been in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **crcErrors (crcErrors)**

Access	Read only
Description	This attribute counts the total number of CRC-6 errors. These will only be counted when the *lineType* is ***esf***.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 **frmErrors (frmErrors)**

Access	Read only
Description	This attribute counts the total number of frame errors. A frame error is an error in the framing bits.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Pbg Sts Vt1dot5 DS1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Pbg Sts Vt1dot5 DS1 Channel (Chan)

Instance	Decimal (0..23)
Groups	GROUP Pbg Sts Vt1dot5 DS1 Chan Provisioned (Prov) GROUP Pbg Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData) GROUP Pbg Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry) GROUP Pbg Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus) GROUP Pbg Sts Vt1dot5 DS1 Chan OsiState (State) GROUP Pbg Sts Vt1dot5 DS1 Chan Operational (Oper) GROUP Pbg Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.
Mib	no_mib
Opt. Subcomp.	COMPONENT Pbg Sts Vt1dot5 DS1 Chan AtmCell (Cell) COMPONENT Pbg Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)
Dyn. Subcomp.	COMPONENT Pbg Sts Vt1dot5 DS1 Chan Test (Test)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Pbg Sts Vt1dot5 DS1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.

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Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.
Mib	no_mib
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

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ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **timeslotDataRate (dataRate)**

Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s. When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s. On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***. One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.
Mib	no_mib
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **applicationFramerName**

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	no_mib
Values	Link (Service, interfaceName)
Default	No default

GROUP Pbg Sts Vt1dot5 DS1 Chan **CustomerIdentifierData (CidData)**

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Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **customerIdentifier (cid)**

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Pbg Sts Vt1dot5 DS1 Chan **IfEntryProv (IfEntry)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

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ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Pbg Sts Vt1dot5 DS1 Chan **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Pbg Sts Vt1dot5 DS1 Chan **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **usageState (osiUsage)**

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	no_mib
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **controlStatus (osiCntrl)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	no_mib
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	no_mib
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: no_mib

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **unknownStatus (osiUnknw)**

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: no_mib

Values:
false
true

Default: false

GROUP Pbg Sts Vt1dot5 DS1 Chan **Operational (Oper)**

Properties: Operational

Description:
This group contains all of the operational data for a *Channel* component.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **actualChannelSpeed**

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Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Pbg Sts Vt1dot5 DS1 Chan **AdminInfo (AdminInfo)**

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **vendor**

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	no_mib
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **commentText**

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	no_mib
Values	String (0..60, ASCII)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan **includeAdminInfoInAlarm**

Access	Read and write
Description	This attribute specifies that user defined text contained in *vendor* and *commentText* attributes of this *VendorInfo* instance will be appended to the comment text of any alarms, excluding hardware initialization alarms, for the associated interface port if this attribute is set to on.

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Mib	no_mib
Values	no yes
Default	no

COMPONENT Pbg Sts Vt1dot5 DS1 Chan **Test (Test)**

Groups	GROUP Pbg Sts Vt1dot5 DS1 Chan Test OsiState (State) GROUP Pbg Sts Vt1dot5 DS1 Chan Test Setup (Setup) GROUP Pbg Sts Vt1dot5 DS1 Chan Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	no_mib
Common Verbs	Help List Display

VERB START Pbg Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Pbg Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Pbg Sts Vt1dot5 DS1 Chan Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE **Pbg Sts Vt1dot5 DS1 Chan Test** **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE **Pbg Sts Vt1dot5 DS1 Chan Test** **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib no_mib

Values
idle
active (activ)
busy

Default idle

GROUP Pbg Sts Vt1dot5 DS1 Chan Test Setup (Setup)

Properties Operational

Description

This group contains all of the operational data for a *Test* component.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test purpose (purpose)

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib no_mib

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.

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lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: no_mib

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **frmSize (size)**

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: no_mib

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **frmPatternType (fpt)**

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.

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customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: no_mib

Values:
ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **customizedPattern (cp)**

Access: Read and write

Description:

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: no_mib

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **dataStartDelay (dsd)**

Access: Read and write

Description:

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib: no_mib

Values: Decimal (0..1814400)

Units: seconds

Default: 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **displayInterval (di)**

Access: Read and write

Description:

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

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Mib	no_mib
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	no_mib
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Pbg Sts Vt1dot5 DS1 Chan Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure

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indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: no_mib

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **bitsTx**

Access: Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: no_mib

Values: Long Integer

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **bytesTx**

Access: Read only

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Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **frmTx**

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **bitsRx**

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **bytesRx**

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **frmRx**

Access Read only

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Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	no_mib
Values	String (5, ASCII)

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Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	no_mib
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test **timeRemaining**

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	no_mib
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Pbg Sts Vt1dot5 DS1 Chan **AtmCell (Cell)**

Groups	GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov) GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Operational (Oper) GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM

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cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Pbg Sts Vt1dot5 DS1 Chan Cell **Provisioned (Prov)**

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **alarmActDelay (act)**

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib no_mib

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **scrambleCellPayload (scramble)**

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

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Mib	no_mib
Values	off on
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **correctSingleBitHeaderErrors**

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	no_mib
Values	off on
Default	off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **clearDelay (clear)**

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	no_mib
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **hecSampleInterval (hSample)**

Access	Read and write

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Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **hecErrorLimit (hLimit)**

Access: Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **lcdStateDelay (delay)**

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The

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valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **hecErrorIntervalLimit (hIntLimit)**

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (1..25)

Default: 1

GROUP Pbg Sts Vt1dot5 DS1 Chan Cell **Operational (Oper)**

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **lcdAlarm (lcd)**

Access: Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects

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have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: no_mib

Values:
on
off

Default: off

GROUP Pbg Sts Vt1dot5 DS1 Chan Cell **Statistics (Stats)**

Properties: Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **uncorrectableHeaderErrors (ucErr)**

Access: Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib: no_mib

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **sevErroredSec (ses)**

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **receiveCellUtilization (rxutil)**

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **transmitCellUtilization (txutil)**

Access	Read only

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Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell **correctableHeaderErrors (cErr)**

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Pbg Sts Vt1dot5 DS1 Chan **TrunkConditioning (Tc)**

Groups	GROUP Pbg Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov) GROUP Pbg Sts Vt1dot5 DS1 Chan Tc Operational (Op)
Scope	Device
Description	*Lp/n Ds1/n Chan/n Tc* *Lp/n E1/n Chan/n Tc* *Lp/n Ds3/n Ds1/n Chan/n Tc* *Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc* *Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc* *Laps/n* Vc4/n Vc12/k,l,m E1 Chan/n T*c* *Laps/n* Sts/n Vt1dot5/l,m Ds1 Chan/n T*c* The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service. Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk

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conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

GROUP Pbg Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov)

Properties: Provisioned

Description: This group contains all specific provisioning data for a *Tc* component.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc replacementData (data)

Access: Read and write

Description: This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

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On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr***, ***2pOC3ChSmIrVsp3*** and *2pVS* cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib	no_mib
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc **signalOneDuration (duration)**

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	no_mib
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc **noServiceResponse (resp)**

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	no_mib

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Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc signalOne (sigOne)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	no_mib
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	no_mib
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Pbg Sts Vt1dot5 DS1 Chan Tc Operational (Op)

Properties	Operational

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Description	This group contains all specific operational data for a *Tc* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc **ingressConditioning (inCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	no_mib
Values	off on
Default	off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc **egressConditioning (egCon)**

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the PDH line under the following conditions: bufferUnderflow (BU) AAL1 protocol errors.

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Mib	no_mib
Values	off on
Default	off

COMPONENT Pbg Sts Vt1dot5 DS1 Test (Test)

Groups	GROUP Pbg Sts Vt1dot5 DS1 Test OsiState (State) GROUP Pbg Sts Vt1dot5 DS1 Test Setup (Setup) GROUP Pbg Sts Vt1dot5 DS1 Test Results (Results)
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	no_mib
Common Verbs	Help List Display

VERB START Pbg Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Pbg Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Pbg Sts Vt1dot5 DS1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test adminState (osiAdmin)

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare

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capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib no_mib

Values idle
active (activ)
busy

Default idle

GROUP Pbg Sts Vt1dot5 DS1 Test **Setup (Setup)**

Properties Operational

Description

This group contains all of the operational data for a *Test* component.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **purpose (purpose)**

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib no_mib

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **type (type)**

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.

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pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: no_mib

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **frmSize (size)**

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: no_mib

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **frmPatternType (fpt)**

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.

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customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib no_mib

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib no_mib

Values Hex (H.0..H.ffffffff)

Units Hex

Default H.55555555

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test dataStartDelay (dsd)

Access Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib no_mib

Values Decimal (0..1814400)

Units seconds

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test displayInterval (di)

Access Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

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Mib	no_mib
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **duration**

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	no_mib
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Pbg Sts Vt1dot5 DS1 Test **Results (Results)**

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **causeOfTermination**

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure

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indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: no_mib

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **bitsTx**

Access: Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: no_mib

Values: Long Integer

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **bytesTx**

Access: Read only

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Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **frmTx**

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **bitsRx**

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **bytesRx**

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **frmRx**

Access Read only

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Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **erroredFrmRx**

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **bitErrorRate**

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	no_mib
Values	String (5, ASCII)

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Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **elapsedTime**

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	no_mib
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test **timeRemaining**

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	no_mib
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Pbg

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - PB

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COMPONENT PseudoBridge (PB)

Groups	GROUP PB IfEntryProv (IfEntry) GROUP PB MediaProv (Mp) GROUP PB Operational (Oper) GROUP PB OsiState (State) GROUP PB OperationalStatus (OperStatus)
Scope	Application
Description	*PseudoBridge* The PseudoBridge component represents one PseudoBridge application.
Mib	Bridge
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP PB IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Bridge

ATTRIBUTE PB ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing

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Default	up

ATTRIBUTE PB ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

GROUP PB MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	Bridge

ATTRIBUTE PB linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	Bridge
Values	Link (Service, linkToMedia)
Default	No default

GROUP PB Operational (Oper)

Properties	Operational
Description	This group includes the operational attibutes which are specific to the PseudoBridge component.
Mib	Bridge

ATTRIBUTE PB macAddress (addr)

Access	Read only
Description	The medium access controller (MAC) address is an address that is only recognized by one station on the attached bus. This address is automatically assigned by the system.

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Mib	Bridge
Values	String (6, Hex)
Default	No default

GROUP PB OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE PB adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE PB operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE PB usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP PB OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE PB snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing

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Default	up

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - PB

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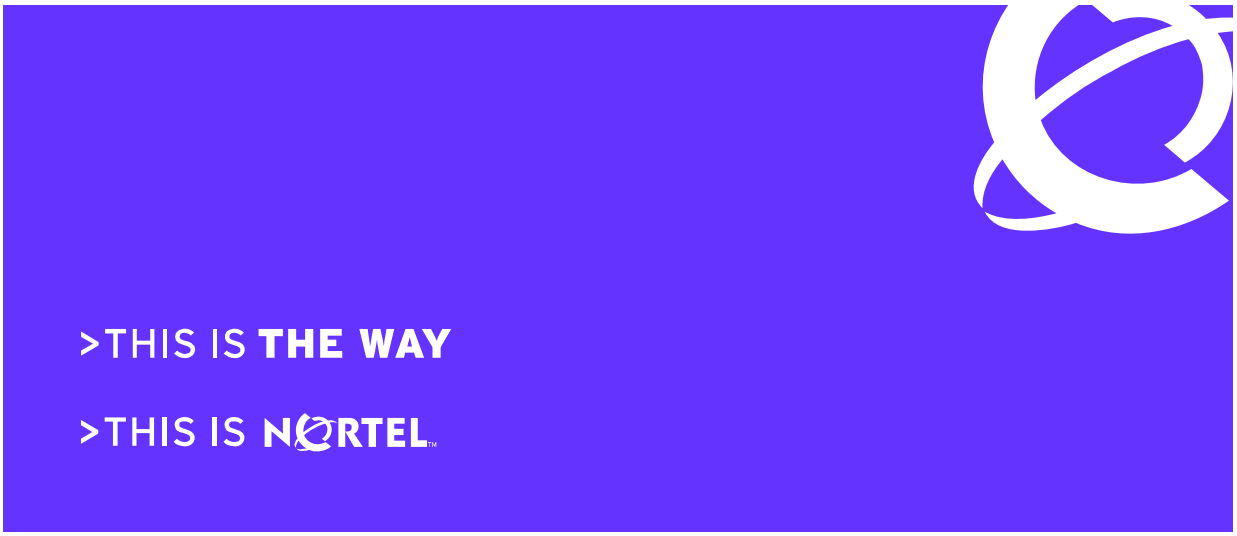

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Components Reference - PcGtl

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COMPONENT PcGprsTransportLayer (PcGtl)

Instance	Decimal (1..15)
Groups	GROUP PcGtl Provisioned (Prov)
Scope	Application
Description	*PcGprsTransportLayer/n* This component represents the Transport Layer functionality of the Gb interface of the Packet Control Unit Support Node (PCUSN).
Mib	WirelessNssBssPcu
Opt. Subcomp.	COMPONENT PcGtl NetworkServiceEntity (Nse)
Common Verbs	Help List Display Add DELete

GROUP PcGtl Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the Logical Processor of *PcGprsTransportLayer (PcGtl)*.
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that the *PcGprsTransportLayer (PcGtl)* and its subcomponents are provisioned on.
Mib	WirelessNssBssPcu
Values	Link (Hardware, linkToApplications)

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Default	No default

COMPONENT PcGtl NetworkServiceEntity (Nse)

Instance	Decimal (0..65535)
Groups	GROUP PcGtl Nse Provisioned (Prov) GROUP PcGtl Nse Statistics (Stats)

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity

Scope	Application
Description	*PcGtl/n NetworkServiceEntity/<nsei>* This component represents a Network Service Entity (NSE). Each NSE is associated with a single Packet Control Unit (PCU) and is identified by means of a Network Service Entity Identifier (NSEI). The same NSE can be provisioned in multiple *PcGtl* instances to enable load sharing.
Mib	WirelessNssBssPcu
Opt. Subcomp.	COMPONENT PcGtl Nse NetworkServiceVirtualConnection (Nsvc)
Common Verbs	Help List Display Add DELete

GROUP PcGtl Nse Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attribute to link the Network Service Entity (NSE) in the *PcGprsTransportLayer (PcGtl)* with the corresponding NSE provisioned in the *PacketControlUnitSupportNode (Pcusn).*
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse linkToMasterNse (ITonse)

Access	Read: All Write: All
Description	This attribute specifies the corresponding *Pcusn Nse* component which provides common parameters to all instances of this Network Service Entity (NSE).
Mib	WirelessNssBssPcu
Values	Link (Service, linkToSlaveNse)
Default	No default

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GROUP PcGtl Nse Statistics (Stats)

Properties	Operational
Description	This group contains the operational information of the Network Service Entity (NSE).
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse octetsToSgsn (octsTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the octets sent to the Serving GPRS Support Node (SGSN) by all the Network Service Virtual Connections (NS-VCs) served by that Network Service Entity (NSE). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse octetsFromSgsn (octsRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from the Serving GPRS Support Node's (SGSN) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity

Description	The statistics record generated by the PcGprsTransportLayer NetworkServiceEntity component.

ATTRIBUTE PcGtl Nse octetsToSgsn (octsTxSgsn)

Description	This attribute counts the octets sent to the Serving GPRS Support Node (SGSN) by all the Network Service Virtual Connections (NS-VCs) served by this Network Service Entity (NSE). This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE PcGtl Nse octetsFromSgsn (octsRxSgsn)

Description	This attribute counts the octets received from the Serving GPRS Support Node's (SGSN) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT PcGtl Nse NetworkServiceVirtualConnection (Nsvc)

Instance	Decimal (0..65535)
Groups	GROUP PcGtl Nse Nsvc Provisioned (Prov) GROUP PcGtl Nse Nsvc Operational (Oper) GROUP PcGtl Nse Nsvc Statistics (Stats)

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection

Scope	Application
Description	*PcGtl/n Nse/<nsei> Nsvc/<nsvci>* This component represents the Network Service Virtual Connection (NS-VC) functionality of the Network Service (NS) protocol layer. Each instance provides a virtual connection between the NS peer entities. An NS-VC is unique across all instances of this Network Service Entity Identifier (NSEI). An NS-VC is associated with a single Frame Relay Data Link Connection Identifier (DLCI). The Frame Relay port and the NS-VC must be located on the same Logical Processor.
Mib	WirelessNssBssPcu
Dyn. Subcomp.	COMPONENT PcGtl Nse Nsvc AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete

GROUP PcGtl Nse Nsvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes to associate a Network Service Virtual Connection (NS-VC) with a Frame Relay Data Link Connection Identifier (DLCI). The FR interface is provided by the *FrAtm* component which must be provisioned on the same Logical Processor as this NS-VC.
Mib	WirelessNssBssPcu

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ATTRIBUTE PcGtl Nse Nsvc localFrAddress (frAddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the local Frame Relay address (native E.164, native x.121) to be used for this connection. This is the address defined at the peer *FrAtm/n Address* component. The peer *FrAtm* component must be provisioned on the same Logical Processor as this Network Service Virtual Connection (NS-VC).
Mib	WirelessNssBssPcu
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc localFrDlci (frDlci)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the local Frame Relay connection identifier. This identifier is a Frame Relay Data Link Connection Identifier (DLCI) logical channel number. There must be a matching DLCI value at the peer *FrAtm* component. The combination of FrAtm and DLCI value must be unique across all instances of NS-VC for this NSEI.
Mib	WirelessNssBssPcu
Values	Decimal (16..1007)
Default	No default

GROUP PcGtl Nse Nsvc Operational (Oper)

Properties	Operational
Description	This group contains Network Service Virtual Connection (NS-VC) operational information.
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse Nsvc state (st)

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the Network Service Virtual Connection (NS-VC). ***idle -*** This is the initial state of the NS-VC upon activation. ***unBlocked -*** Indicates that this NS-VC is unblocked and is now available for traffic.

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localInitiatedBlocked - This state indicates that the NS-VC is blocked by a locally initiated Block Request. NS-UNITDATA Protocol Data Units (PDUs) received in this state are discarded.
netInitiatedBlocked - This state indicates that this NS-VC has been blocked by the remote node. NS-UNITDATA PDUs received in this state are discarded.
dead - This state indicates that the NS-VC is unavailable. This can be because the Frame Relay (FR) link is dead or if an operator locks the Data Link Connection Identifier (DLCI).

Mib	WirelessNssBssPcu
Values	idle unBlocked localInitiatedBlocked netInitiatedBlocked dead
Default	No default

GROUP PcGtl Nse Nsvc Statistics (Stats)

Properties	Operational
Description	This group contains the Network Service Virtual Connection (NS-VC) statistical information.
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse Nsvc blocksFromSgsn (blksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-BLOCK requests received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc blocksToSgsn (blksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-BLOCK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE PcGtl Nse Nsvc blockAcksFromSgsn (blkAcksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-BLOCK ACKs received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc blockAcksToSgsn (blkAcksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-BLOCK ACK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unblocksFromSgsn (unblksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK requests received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unblocksToSgsn (unblksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unblockAcksFromSgsn (unblkAcksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK ACKs received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unblockAcksToSgsn (unblkAcksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK ACK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unitDatasFromSgsn (unitDataRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unitDatasToSgsn (unitDataTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.

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Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc alivesFromSgsn (aliveRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE requests received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc alivesToSgsn (aliveTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc aliveAcksFromSgsn (aliveAcksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE ACKs received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc aliveAcksToSgsn (aliveAcksTxSgsn)

Access	Read: All Write: Illegal

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Description	This attribute counts the NS-ALIVE ACK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc resetsFromSgsn (rstsRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET requests received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc resetsToSgsn (rstsTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc resetAcksFromSgsn (rstAcksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET ACKs received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc resetAcksToSgsn (rstAcksTxSgsn)

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Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET ACK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc **statusFromSgsn (statusRxSgsn)**

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS PDUs received from the Serving GPRS Support Node (SGSN). The SGSN sends an NS-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the SGSN-PCU direction. The counter to zero wraps when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc **statusToSgsn (statusTxSgsn)**

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS PDUs sent to the Serving GPRS Support Node (SGSN). The Packet Control Unit (PCU) sends an NS-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the PCU-SGSN direction. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc **statusIndications (statusInds)**

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS Indications formatted by the Network Service (NS) for this Network Service Virtual Connection (NS-VC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc fecnBitSet (fecnBit)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from the network that contain the Forward Explicit Congestion Notification (FECN) bit set to 1. Setting of the FECN bit to 1 indicates that frames received from the network can experience congestion.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc becnBitSet (becnBit)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from the network that contain the Backward Explicit Congestion Notification (BECN) bit set to 1. Setting of the BECN bit to 1 indicates that frames transmitted to the network may experience congestion.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc octetsFromSgsn (octsRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc octetsToSgsn (octsTxSgsn)

Access	Read: All Write: Illegal

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Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection

Description	The statistics record generated by the PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection component.

ATTRIBUTE PcGtl Nse Nsvc unitDatasFromSgsn (unitDataRxSgsn)

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc unitDatasToSgsn (unitDataTxSgsn)

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc octetsFromSgsn (octsRxSgsn)

Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc octetsToSgsn (octsTxSgsn)

Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were sent to the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT PcGtl Nse Nsvc AtmConnection (AtmCon)

Groups	GROUP PcGtl Nse Nsvc AtmCon Operational (Oper)
Scope	Device

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Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessNssBssPcu
Common Verbs	Help List Display

GROUP PcGtl Nse Nsvc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse Nsvc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessNssBssPcu
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - PcGtl

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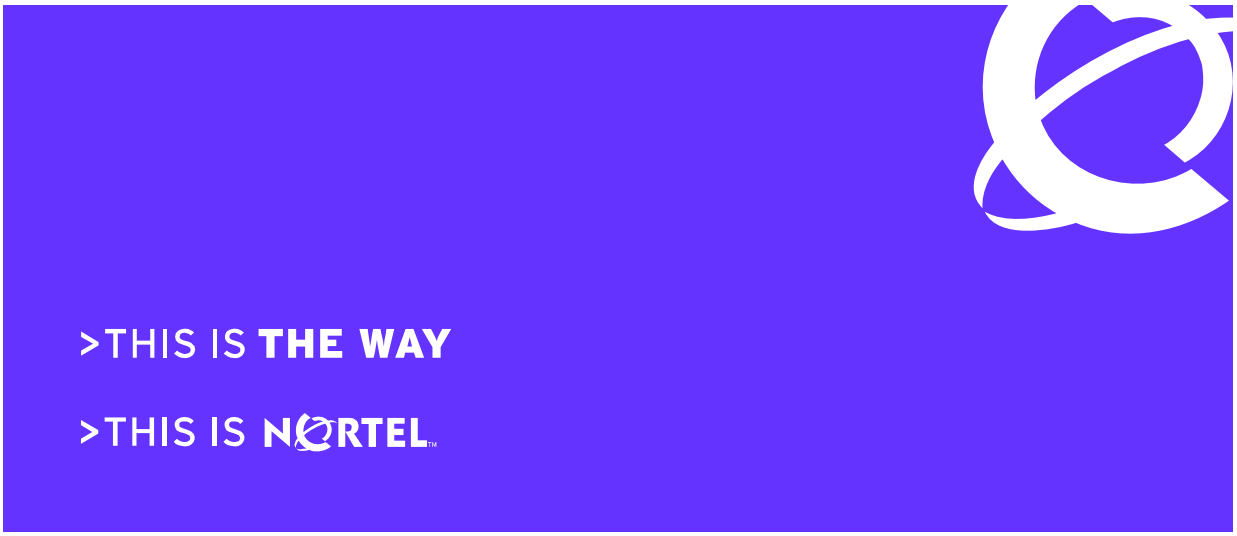

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Pcusa

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Language type: U.S. English

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COMPONENT PCUSupportApplication (Pcusa)

Instance	Decimal (0..15999)
Groups	GROUP Pcusa OsiState (State)
Scope	Device
Description	*PCUSupportApplication/n* This component represents all Packet Control Unit (PCU) for a single Packet Control Unit Services Node (PCUSN). As such, there is one *Pcusa* per PCUSN. This *Pcusa* instance can have up to 24 *Connection* subcomponents.
Mib	Pcusa
Opt. Subcomp.	COMPONENT Pcusa Connection (Conn)
Common Verbs	Help List Display Add DELete

GROUP Pcusa OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Pcusa

ATTRIBUTE Pcusa adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Pcusa
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pcusa operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Pcusa
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pcusa usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Pcusa

Values:
idle
active (activ)
busy

Default: idle

COMPONENT Pcusa Connection (Conn)

Instance: Decimal (0..256)

Groups:
GROUP Pcusa Conn CustomerIdentifierData (CidData)
GROUP Pcusa Conn Provisioned (Prov)
GROUP Pcusa Conn OsiState (State)

Scope: Device

Description:
Pcusa/n Connection/n
This component represents a PCUSA connection which corresponds to a group of channels representing all the PCM links on one Base Station Controller (BSC). This component is linked to an *NSE* component, which provides transport to the Frame Relay network. The *Conn* instance value is the BSC identifier. Each *Conn* must have between 1 and 24 *PcmLink* subcomponents.

Mib: Pcusa

Opt. Subcomp.: COMPONENT Pcusa Conn PcmLink (PcmLk)

Common Verbs:
Help
List
Display
Add
DELete

VERB RESET Pcusa Conn

Impact: Service

Description:
Reset conn/n
The *Reset* verb is used to reset CAS operational counters under a *Connection*.

GROUP Pcusa Conn CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: Pcusa

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ATTRIBUTE Pcusa Conn customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Pcusa
Values	Decimal (0; 1..8191)
Default	0

GROUP Pcusa Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Connection*.
Mib	Pcusa

ATTRIBUTE Pcusa Conn linkToNse (l2nse)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to an *NSE* component, which provides transport to the Frame Relay network.
Mib	Pcusa
Values	Link (Service, linkToPcuConn)
Default	No default

GROUP Pcusa Conn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Pcusa

ATTRIBUTE Pcusa Conn adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Pcusa

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Pcusa Conn operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib Pcusa

Values enabled (ena)
disabled (dis)

Default disabled

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ATTRIBUTE Pcusa Conn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Pcusa
Values	idle active (activ) busy
Default	idle

COMPONENT Pcusa Conn PcmLink (PcmLk)

Instance	Decimal (0..167)
Groups	GROUP Pcusa Conn PcmLk Provisioned (Prov) GROUP Pcusa Conn PcmLk OsiState (State) GROUP Pcusa Conn PcmLk Operational (Oper) GROUP Pcusa Conn PcmLk RelayStatistics (RelStats) GROUP Pcusa Conn PcmLk PcmLkPcu (PcuOper)

COLLECTED STATS PCUSupportApplication Connection PcmLink

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n* This component represents one PCM link and must be linked to a DS1 or E1 channel.
Mib	Pcusa
Subcomponents	COMPONENT Pcusa Conn PcmLk LapdSignaling (LapdSig)
Dyn. Subcomp.	COMPONENT Pcusa Conn PcmLk Cell (Cell) COMPONENT Pcusa Conn PcmLk BssgpVirtualConnection (Bvc) COMPONENT Pcusa Conn PcmLk CgiCell (CgiCell)
Common Verbs	Help List Display Add DELete

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GROUP Pcusa Conn PcmLk **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains provisioning data for the PCM link.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk **interfaceName (ifName)**

Access	Read and write
Criticality	Process
Description	This attribute specifies a service link to a *Chan* component located on the TDM card.
Mib	Pcusa
Values	Link (Service, applicationFramerName)
Default	No default

GROUP Pcusa Conn PcmLk **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Pcusa

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pcusa Conn PcmLk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Pcusa
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pcusa Conn PcmLk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Pcusa
Values	idle active (activ) busy
Default	idle

GROUP Pcusa Conn PcmLk Operational (Oper)

Properties	Operational
Description	This group contains status information about the PCM link coming from PCUSA.

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Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk **processingBlockNumber (pBNum)**

Access	Read only
Description	This attribute indicates the processing block which has been assigned to support this PCM link.
Mib	Pcusa
Values	The name of the component
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **failureCause (failCause)**

Access	Read only
Description	This attribute indicates the cause for the PCM link's failure. The failure cause messages are: ***serviceChanNotReady*** - the TDM LP is down, or waiting for the *Chan* to establish communication. ***operatorLock*** - this failure message occurs when a dependent component is locked by the operator. ***internalError*** - an internal error, which cannot be determined has occurred. ***outOfResource*** - an SPM could not be allocated to handle the requested capacity. ***processingResourceNotReady*** - the allocated SPM is under reset or provisioning. ***none*** - no failure.
Mib	Pcusa
Values	none serviceChanNotReady operatorLock internalError outOfResource processingResourceNotReady
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **pcuRole (role)**

Access	Read only
Description	This attribute indicates the role of the PCM link on the Gb interface. ***master*** - the PCM link manages the BVCI 0. ***slave*** - the PCM link does not manage the BVCI 0.
Mib	Pcusa
Values	master slave

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Default	No default

GROUP Pcusa Conn PcmLk **RelayStatistics (RelStats)**

Properties	Operational
Description	This group contains statistical data that pertains to information on the Frame Relay side.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk **pduDn (pduDn)**

Access	Read only
Description	This attribute counts the BSSGP PDUs received from the SGSN by all the BVCs associated to this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **pduUp (pduUp)**

Access	Read only
Description	This attribute counts the BSSGP PDUs transmitted to the SGSN by all the BVCs associated to this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **octetsDn (octDn)**

Access	Read only
Description	This attribute counts the octets received by all the BVCs associated to this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **octetsUp (octUp)**

Access	Read only

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Description	This attribute counts the octets sent by all the BVCs associated to this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **bvcsBlocked (bvcB)**

Access	Read only
Description	This attribute indicates the BVCs that are currently in blocked state.
Mib	Pcusa
Values	Decimal (0..120)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **bvcsUnBlocked (bvcUB)**

Access	Read only
Description	This attribute indicates the BVCs that are currently in unblocked state.
Mib	Pcusa
Values	Decimal (0..120)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **totalBvcs (totbvc)**

Access	Read only
Description	This attribute indicates the BVCs that currently exist within an NSE.
Mib	Pcusa
Values	Decimal (0..120)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **psPaging (psPag)**

Access	Read only
Description	This attribute counts the BSSGP PAGING PS PDUs received from the SGSN by this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk **csPaging (csPag)**

Access	Read only
Description	This attribute counts the BSSGP PAGING CS PDUs received from the SGSN by this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **dyAgprsLackOfTimeslots (dyAgprsLTs)**

Access	Read only
Description	This attribute counts the number of times that the PCU has not been able to satisfy the request sent by the most loaded cell that appears to have a lack of resource. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk **PcmLkPcu (PcuOper)**

Properties	Operational
Description	This group contains status information about the PCM link coming from the PCU element.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk **agprsVersion (agprsVer)**

Access	Read only
Description	This attribute indicates the AGPRS interface version requested by the BSC. When the version number is incorrect, an alarm is to be raised.
Mib	Pcusa
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk **pcuProvisioningState (pcuProvState)**

Access	Read only

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Description	This attribute indicates if the PCU element has received the provisioning information. ***notReceived*** - one of the provisioning messages has not been received. ***received*** - all the provisioning messages have been received.
Mib	Pcusa
Values	notReceived received
Default	No default

ATTRIBUTE Pcusa Conn PcmLk pcuConfiguration (pcuConfig)

Access	Read only
Description	This attribute indicates if the PCU element has received the configuration message from the BSC. ***pcuConfigMsgReceived*** - the pcuConfig message has been received. ***pcuConfigMsgNotReceived*** - the pcuConfig message has not been received.
Mib	Pcusa
Values	notReceived received
Default	No default

ATTRIBUTE Pcusa Conn PcmLk pcuGbState (pcuGbState)

Access	Read only
Description	This attribute indicates the transmission capability on the Gb interface for the related NSE. ***down*** - the transmission capability is null (that is, none of the related NSVCs are unblocked). ***up*** - the transmission capability is not null (that is, at least one of the related NSVCs is unblocked). ***notReceived*** - the transmission capability on the Gb interface has not been received by the PcuElement application.
Mib	Pcusa
Values	down up notReceived
Default	No default

ATTRIBUTE Pcusa Conn PcmLk pcuSigBvcState (pcuSigBvcState)

Access	Read only
Description	This attribute indicates the state of the signalization BVC on the Gb interface. ***down*** - the BSSGP BVCI 0 procedure has not been successfully

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performed.
up - the BSSGP BVCI 0 procedure has been successfully performed.
notReceived - the BSSGP BVCI 0 procedure status has not yet been received.

Mib — Pcusa

Values — down
up
notReceived

Default — No default

COLLECTED STATS PCUSupportApplication Connection PcmLink

Description — The statistics record generated by the PCUSupportApplication Connection PcmLink component.

ATTRIBUTE Pcusa Conn PcmLk pduDn (pduDn)

Description — This attribute counts the BSSGP PDUs received from the SGSN by all the BVCs associated to this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk pduUp (pduUp)

Description — This attribute counts the BSSGP PDUs transmitted to the SGSN by all the BVCs associated to this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk octetsDn (octDn)

Description — This attribute counts the octets received by all the BVCs associated to this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk octetsUp (octUp)

Description — This attribute counts the octets sent by all the BVCs associated to this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk psPaging (psPag)

Description — This attribute counts the BSSGP PAGING PS PDUs received from the SGSN by this PCM link during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk csPaging (csPag)

Description — This attribute counts the BSSGP PAGING CS PDUs received from the SGSN by this PCM link during the statistics collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk dyAgprsLackOfTimeslots (dyAgprsLTs)

Description This attribute counts the number of time that the PCU has not been able to satisfy the request sent by the most loaded cell on which appears a lack of resource during the statistics collection interval.

Values Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk LapdSignaling (LapdSig)

Instance Decimal (0..31)

Groups GROUP Pcusa Conn PcmLk LapdSig Operational (Oper)
GROUP Pcusa Conn PcmLk LapdSig Lev1ErrStatistics (L1ErrStats)
GROUP Pcusa Conn PcmLk LapdSig Lev2UpStatistics (L2ULStats)
GROUP Pcusa Conn PcmLk LapdSig Lev2DownStatistics (L2DLStats)

COLLECTED STATS PCUSupportApplication Connection PcmLink LapdSignaling

Scope Device

Description *Pcusa/n Conn/n PcmLink/n LapdSignaling*
This component represents the LAPD signaling protocol on a PCM link.

Mib Pcusa

Common Verbs Help
List
Display
Add
DELete

GROUP Pcusa Conn PcmLk LapdSig Operational (Oper)

Properties Operational

Description This group contains status information about the communication link.

Mib Pcusa

ATTRIBUTE Pcusa Conn PcmLk LapdSig sigStatus (sigStus)

Access Read only

Description This attribute indicates the status of the 3 LAPD SAPIs (GSL, RSL, OML) on the AGPRS interface.
down - One of the three LAPD SAPIs is down.
up - The three LAPD SAPIs are up.

Mib Pcusa

Values down
up

Default No default

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ATTRIBUTE Pcusa Conn PcmLk LapdSig **omlStatus (omlStus)**

Access	Read only
Description	This attribute indicates the status of the OML LAPD SAPI on the AGPRS interface. ***down*** - OML LAPD SAPI is down. ***up*** - OML LAPD SAPI is up.
Mib	Pcusa
Values	down up
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig **gslStatus (gslStus)**

Access	Read only
Description	This attribute indicates the status of the GSL LAPD SAPI on the AGPRS interface. ***down*** - GSL LAPD SAPI is down. ***up*** - GSL LAPD SAPI is up.
Mib	Pcusa
Values	down up
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig **rslStatus (rslStus)**

Access	Read only
Description	This attribute indicates the status of the RSL LAPD SAPI on the AGPRS interface. ***down*** - RSL LAPD SAPI is down. ***up*** - RSL LAPD SAPI is up.
Mib	Pcusa
Values	down up
Default	No default

GROUP Pcusa Conn PcmLk LapdSig **Lev1ErrStatistics (L1ErrStats)**

Properties	Operational
Description	This group contains level 1 error counts collected on LAPD signaling layer frames.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostOverflowUp (fLovfUp)**

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Access	Read only
Description	This attribute counts the uplink frames lost due to data overrun or receive buffer overflow. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostOverflowDn (fLovfDn)**

Access	Read only
Description	This attribute counts the downlink frames which were not sent because of buffer overflow. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig **errorsCRC (errCRC)**

Access	Read only
Description	This attribute counts the frames with CRC errors which were received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostAlignment (fLAlign)**

Access	Read only
Description	This attribute counts the frames lost due to abort or lack of alignment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk LapdSig **Lev2UpStatistics (L2ULStats)**

Properties	Operational

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Description	This group contains statistical data collected on uplink frame types.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk LapdSig iFramesUp (iFrmUp)

Access	Read only
Description	This attribute counts the I frames received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig uiFramesUp (uiFrmUp)

Access	Read only
Description	This attribute counts the unnumbered I frames received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk LapdSig Lev2DownStatistics (L2DLStats)

Properties	Operational
Description	This group contains statistical data collected on downlink transmitted frame format.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk LapdSig iFramesDn (iFrmDn)

Access	Read only
Description	This attribute counts the I frames transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig uiFramesDn (uiFrmDn)

Access	Read only

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Description	This attribute counts the unnumbered I frames transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink LapdSignaling
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink LapdSignaling component.

ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostOverflowUp (fLovfUp)**

Description	This attribute counts the uplink frames lost due to data overrun or receive buffer overflow during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostOverflowDn (fLovfDn)**

Description	This attribute counts the downlink frames which were not sent because of buffer overflow during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **errorsCRC (errCRC)**

Description	This attribute counts the frames with CRC errors which were received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **framesLostAlignment (fLAlign)**

Description	This attribute counts the frames lost due to abort or lack of alignment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **iFramesUp (iFrmUp)**

Description	This attribute counts the I frames received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **uiFramesUp (uiFrmUp)**

Description	This attribute counts the unnumbered I frames received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **iFramesDn (iFrmDn)**

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Description	This attribute counts the I frames transmitted during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig **uiFramesDn (uiFrmDn)**

Description	This attribute counts the unnumbered I frames transmitted during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk **Cell (Cell)**

Instance	Decimal (0..4294967295)
Groups	GROUP Pcusa Conn PcmLk Cell Operational (Oper) GROUP Pcusa Conn PcmLk Cell CellIdentifierOperational (CellIdOper) GROUP Pcusa Conn PcmLk Cell PdchAllocStatistics (AllocStats) GROUP Pcusa Conn PcmLk Cell PdchFullDpxStatistics (FDpxStats) GROUP Pcusa Conn PcmLk Cell PdchUplkStatistics (ULStats) GROUP Pcusa Conn PcmLk Cell PdchDownlkStatistics (DLStats) GROUP Pcusa Conn PcmLk Cell DynAgprsStatistics (DynAgprsStats) GROUP Pcusa Conn PcmLk Cell QoSStatistics (QoSStats)

COLLECTED STATS PCUSupportApplication Connection PcmLink Cell

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n* This dynamic component represents a GSM cell. There can be several *Cell*s per PCM. The *Cell*s are uniquely identified in the GSM system by a cellID value.
Mib	Pcusa
Dyn. Subcomp.	COMPONENT Pcusa Conn PcmLk Cell Tdma (Tdma) COMPONENT Pcusa Conn PcmLk Cell Ccch (Ccch) COMPONENT Pcusa Conn PcmLk Cell MobileStation (Ms)
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell **Operational (Oper)**

Properties	Operational
Description	This group contains information about the cell.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell **cellBVCI**

Access	Read only

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Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier corresponding to the cell.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **cellState (state)**

Access	Read only
Description	This attribute indicates the state of a GSM cell as specified by the BSC. ***unConfigured*** - The cell is not configured. ***configured*** - The message cell_config has been received from the BSC and acknowledged. ***availableOos*** - The message cell_available has been received from the BSC and acknowledged. ***inService*** - The message cell_gprs_open has been sent to the BTS, and the BTS has acknowledged the message. ***destroying*** - The cell object instance is being destroyed in the PCU element, and is waiting for completion of the BSSGP BVC blocking procedure.
Mib	Pcusa
Values	unConfigured configured availableOos inService destroying
Default	No default

GROUP Pcusa Conn PcmLk Cell **CellIdentifierOperational (CellIdOper)**

Properties	Operational
Description	This group contains attributes used for cell‘s identification as defined in the GSM 08.18 Technical Specification.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell **msCountryCode (mCC)**

Access	Read only
Description	This attribute indicates the mobile country code.
Mib	Pcusa
Values	Decimal (0..999)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **msNetworkCode (mNC)**

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Access	Read only
Description	This attribute indicates the mobile network code.
Mib	Pcusa
Values	Decimal (0..999)
Default	No default

GROUP Pcusa Conn PcmLk Cell **PdchAllocStatistics (AllocStats)**

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell **upMultiSlotRequests (upMSlotReq)**

Access	Read only
Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station. Index 1 counts the number of 1-timeslot allocation requests. Index 2 counts the number of 2-timeslot allocation requests. Index 3 counts the number of 3-timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **upMultiSlotAllocations (upMSlotAll)**

Access	Read only
Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station. Index 1 counts the number of 1-timeslot granted allocations. Index 2 counts the number of 2-timeslot granted allocations. Index 3 counts the number of 3-timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations. The counters wrap to zero when they exceed their maximum value.

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Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnMultiSlotRequests (dnMSlotReq)

Access	Read only
Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU. Index 1 counts the number of 1-timeslot allocation requests. Index 2 counts the number of 2-timeslots allocation requests. Index 3 counts the number of 3-timeslots allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnMultiSlotAllocations (dnMSlotAll)

Access	Read only
Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU. Index 1 counts the number of 1-timeslot granted allocations. Index 2 counts the number of 2-timeslot granted allocations. Index 3 counts the number of 3-timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

GROUP Pcusa Conn PcmLk Cell PdchFullDpxStatistics (FDpxStats)

Properties	Operational
Description	This group contains statistical data collected on Packet Data Channel (PDCH) full duplex parameters.

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Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell **fullDuplexTbfEstablishment (fdTbfEst)**

Access	Read only
Description	This attribute counts how many full duplex TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **currentFullDuplexTbfEstablishment (currFdTbfEst)**

Access	Read only
Description	This attribute indicates the number of full duplex TBFs currently established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeDowngradedTbf (EDgrdTbf)**

Access	Read only
Description	The attribute counts the EGPRS TBFs downgraded in GPRS.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeTbfEstReq (ETbfEstReq)**

Access	Read only
Description	The attribute counts the EGPRS TBF establishment requests.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell **PdchUplkStatistics (ULStats)**

Properties	Operational
Description	This group contains statistical data collected on PDCH uplink parameters.
Mib	Pcusa

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ATTRIBUTE Pcusa Conn PcmLk Cell **upTbfEstablishment (upTbfEst)**

Access	Read only
Description	This attribute counts how many uplink TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **currentUpTbfEstablishment (currUpTbfEst)**

Access	Read only
Description	This attribute indicates the number of uplink TBFs currently established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **allocatedBlocksUpTbf (allBUpTbf)**

Access	Read only
Description	This attribute counts the blocks allocated for the uplink TBFs. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **currentAllocatedBlocksUpTbf (currAllBUpTbf)**

Access	Read only
Description	This attribute indicates the blocks currently allocated for the uplink TBFs.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **nonAckUpTbfEstablishment (nAckUpTbfEst)**

Access	Read only
Description	This attribute counts the non-acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentNonAckUpTbfEstablishment (currNAckUpTbfEst)

Access	Read only
Description	This attribute indicates the current non-acknowledged uplink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell ackUpTbfEstablishment (ackUpTbfEst)

Access	Read only
Description	This attribute counts the acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentAckUpTbfEstablishment (currAckUpTbfEst)

Access	Read only
Description	This attribute indicates the current acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell upTbfReleases (upTbfRel)

Access	Read only
Description	This attribute counts how many uplink TBFs were released.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Access	Read only

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Description	This attribute counts the close-ended uplink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeUpCumUsefulDataPerCell (EUpCumUseDt)**

Access	Read only
Description	This attribute indicates the cumulated size, in octets, of all the RLC EDGE data blocks received for the first time on a pipe in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeUpUsefulDataDurationPerCell (EUpUseDtDur)**

Access	Read only
Description	This attribute indicates the cumulated time, in multiple of 20ms, where the pipes for UL EGPRS TBF are in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell **PdchDownlkStatistics (DLStats)**

Properties	Operational
Description	This group contains statistical data collected on PDCH downlink parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfEstablishment (dnTbfEst)**

Access	Read only
Description	This attribute counts how many downlink TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **currentDnTbfEstablishment (currDnTbfEst)**

Access	Read only

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Description	This attribute indicates the current downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentAllocatedBlocksDnTbf (currAllBDnTbf)

Access	Read only
Description	This attribute indicates the blocks currently allocated for the downlink TBFs.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckDnTbfEstablishment (nAckDnTbfEst)

Access	Read only
Description	This attribute counts the non-acknowledged downlink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentNonAckDnTbfEstablishment (currNAckDnTbfEst)

Access	Read only
Description	This attribute indicates the current non-acknowledged downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell ackDnTbfEstablishment (ackDnTbfEst)

Access	Read only
Description	This attribute counts the acknowledged downlink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **currentAckDnTbfEstablishment (currAckDnTbfEst)**

Access	Read only
Description	This attribute indicates the current acknowledged downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfReleases (dnTbfRel)**

Access	Read only
Description	This attribute counts how many downlink TBFs were released.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeDnCumUsefulDataPerCell (EDnCumUseDt)**

Access	Read only
Description	This attribute indicates the cumulated size, in octets, of all the RLC EDGE data blocks sent for the first time on a pipe in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeDnUsefulDataDurationPerCell (EDnUseDtDur)**

Access	Read only
Description	This attribute indicates the cumulated time, in multiple of 20ms, where the pipes for DL EGPRS TBF are in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell **DynAgprsStatistics (DynAgprsStats)**

Properties	Operational
Description	This group contains statistical data collected on dynamic AGPRS parameters.
Mib	Pcusa

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ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsNbModif (dyAgprsNbMod)**

Access	Read only
Description	This attribute indicates the number of changes to allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)**

Access	Read only
Description	This attribute indicates the average number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMinNbTimeslots (dyAgprsMinNbTs)**

Access	Read only
Description	This attribute indicates the minimum number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)**

Access	Read only
Description	This attribute indicates the maximum number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)**

Access	Read only
Description	This attribute indicates the average AGPRS load criterion value.
Mib	Pcusa
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)**

Access	Read only
Description	This attribute indicates the maximum AGPRS load criterion value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeDynAgprsJokerCumNbTimeslot (EDyAJkCumTs)**

Access	Read only
Description	This attribute indicates the cumulative number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeDynAgprsJokerMinNbTimeslot (EDyAJkMinTs)**

Access	Read only
Description	This attribute indicates the minimum number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeDynAgprsJokerMaxNbTimeslot (EDyAJkMaxTs)**

Access	Read only
Description	This attribute indicates the maximum number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **pcuEdgeAgprsJokerNbofBlocks (EAJkNbBlks)**

Access	Read only
Description	This attribute indicates the total number of TRAU EDGE data blocks sent on the Agprs Joker channels in the DL direction.
Mib	Pcusa

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeAgprsMainNbofBlocks (EAMnNbBlks)

Access	Read only
Description	This attribute indicates the total number of TRAU EDGE data blocks sent on the Agprs Main channels in the DL direction.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell QoSStatistics (QoSStats)

Properties	Operational
Description	This group contains statistical data collected on downlink TBFs on which a QoS parameter is attributed.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Access	Read only

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Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)**

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)**

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)**

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)**

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Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)**

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)**

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink Cell
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink Cell component.

ATTRIBUTE Pcusa Conn PcmLk Cell **cellBVCI**

Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Cell **upMultiSlotRequests (upMSlotReq)**

Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell **upMultiSlotAllocations (upMSlotAll)**

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Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnMultiSlotRequests (dnMSlotReq)**

Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnMultiSlotAllocations (dnMSlotAll)**

Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell **fullDuplexTbfEstablishment (fdTbfEst)**

Description	This attribute counts how many full duplex TBFs were established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **upTbfReleases (upTbfRel)**

Description	This attribute counts how many uplink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **cumulativeTimeUpTbf (cumTimeUpTbf)**

Description	This attribute indicates the cumulative duration of all uplink TBFs released during the statistics collection interval.

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Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk Cell allocatedBlocksUpTbf (allBUpTbf)

Description	This attribute counts the blocks allocated for the uplink TBFs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckUpTbfEstablishment (nAckUpTbfEst)

Description	This attribute counts the non-acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell ackUpTbfEstablishment (ackUpTbfEst)

Description	This attribute counts the acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Description	This attribute counts the close-ended uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfReleases (dnTbfRel)

Description	This attribute counts how many downlink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell cumulativeTimeDnTbf (cumTimeDnTbf)

Description	This attribute indicates the cumulative duration of all downlink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckDnTbfEstablishment (nAckDnTbfEst)

Description	This attribute counts the non-acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell ackDnTbfEstablishment (ackDnTbfEst)

Description	This attribute counts the acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsNbModif (dyAgprsNbMod)**

Description — This attribute counts the modifications of Agprs timeslots allocated in the cell during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)**

Description — This attribute indicates the average number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMinNbTimeslots (dyAgprsMinNbTs)**

Description — This attribute indicates the minimum number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)**

Description — This attribute indicates the maximum number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)**

Description — This attribute indicates the average Agprs load criterion value during the statistics collection interval.

Values — Decimal (0..100)

Units — %

ATTRIBUTE Pcusa Conn PcmLk Cell **dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)**

Description — This attribute indicates the maximum Agprs load criterion value during the statistics collection interval.

Values — Decimal (0..100)

Units — %

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)**

Description — This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)**

Description — This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)**

Description This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)**

Description This attribute counts the downlink TBFs with gold QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)**

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)**

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)**

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)**

Description This attribute counts the downlink TBFs with silver QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)**

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)**

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Description	This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)**

Description	This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell **dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)**

Description	This attribute counts the downlink TBFs with bronze QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk Cell **Tdma (Tdma)**

Instance	Decimal (0..15)
Groups	GROUP Pcusa Conn PcmLk Cell Tdma Operational (Oper) GROUP Pcusa Conn PcmLk Cell Tdma Statistics (Stats) GROUP Pcusa Conn PcmLk Cell Tdma UplkStatistics (ULStats) GROUP Pcusa Conn PcmLk Cell Tdma DownlkStatistics (DLStats) GROUP Pcusa Conn PcmLk Cell Tdma PdchAllocationStatistics (PdchAllocStats) GROUP Pcusa Conn PcmLk Cell Tdma ReleaseStatistics (RelStats)

COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Tdma

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n* This component represents a TDMA. There can be several TDMA per *Cell*.
Mib	Pcusa
Dyn. Subcomp.	COMPONENT Pcusa Conn PcmLk Cell Tdma Timeslot (Ts) COMPONENT Pcusa Conn PcmLk Cell Tdma JokerTimeslot (JokerTs)
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Tdma **Operational (Oper)**

Properties	Operational
Description	This group contains attributes describing the time division multiple access.

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Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **tdmaState (state)**

Access	Read only
Description	This attribute indicates the state of a TDMA relative to the BSC.
Mib	Pcusa
Values	unconfigured configured available
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **pcuTdmaEdgeCapacity (edgeCap)**

Access	Read only
Description	This attribute indicates the EDGE capacity of a TDMA.
Mib	Pcusa
Values	noEdge upToMCS4DlFullEdgeUl fullEdge upToMCS4DlUl
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma **Statistics (Stats)**

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **localBusy (locBus)**

Access	Read only
Description	This attribute counts the blocks sent with the window stalled indicator set. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **remoteBusy (remBus)**

Access	Read only
Description	This attribute counts the blocks received with the window stalled indicator set. The counter wraps to zero when it exceeds its maximum value.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma **UplkStatistics (ULStats)**

Properties	Operational
Description	This group contains statistical data collected by counters in uplink transmission mode.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **llcPacketsUp (llcPktUp)**

Access	Read only
Description	This attribute counts the LLC packets reassembled and transmitted to the LLC relay. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **dataBlocksUp (dataBUp)**

Access	Read only
Description	This attribute counts the uplink RLC data blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **controlBlocksUp (ctrlBUp)**

Access	Read only
Description	This attribute counts the uplink RLC control blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **invalidBlocksUp (invalidBUp)**

Access	Read only

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Description	This attribute counts the uplink invalid radio blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **invalidProtocolErrorBlocksUp (invalidProtErrBUp)**

Access	Read only
Description	This attribute counts the uplink invalid radio blocks received with invalid RLC protocol. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **outOfSequenceBlocksUp (outOfSeqBUp)**

Access	Read only
Description	This attribute counts the data blocks received uplink with Block Sequence Number outside the received window. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **packetAckNackUp (pktANUp)**

Access	Read only
Description	This attribute counts the PACKET-UPLINK-ACK-NACK messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **totalRetransmissionRequested (totRtxReq)**

Access	Read only

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Description	This attribute counts the RLC/MAC block retransmission requests. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **pcuEdgeDataBlocksUp (EDtBlkUp)**

Access	Read only
Description	This attribute counts the cumulative number of EGPRS RLC data blocks received by the PCU on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **pcuEdgeUpCumMeanBep (EUpCumMnBep)**

Access	Read only
Description	This attribute counts the cumulated value of the assumed BEP received by the PCU in each EGPRS RLC data block on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **pcuEdgeUpNbsMeanBep (EUpNbMnBep)**

Access	Read only
Description	This attribute counts the MEAN_BEP values received by the PCU in each EGPRS RLC data block on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma **DownlkStatistics (DLStats)**

Properties	Operational

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Description	This group contains statistical data collected by counters in downlink transmission mode.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **llcPacketsDn (llcPktDn)**

Access	Read only
Description	This attribute counts the LLC packets segmented into RLC data blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **dataBlocksDn (dataBDn)**

Access	Read only
Description	This attribute counts the downlink RLC data blocks transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **controlBlocksDn (ctrlBDn)**

Access	Read only
Description	This attribute counts the downlink RLC control blocks transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **retransmittedDataBlocksDn (rtxDataBDn)**

Access	Read only
Description	This attribute counts the data blocks retransmitted downlink. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **packetAckNackDn (pktANDn)**

Access	Read only
Description	This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **pcuEdgeDataBlocksDn (EDtBlkDn)**

Access	Read only
Description	This attribute counts the cumulative number of EGPRS RLC data blocks sent by the PCU on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **pcuEdgeDnCum8PskMeanBep (EDnCum8PMnB)**

Access	Read only
Description	This attribute counts the cumulative value of the 8PSK_BEP derived from the 8PSK_MEAN_BEP received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (8PSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **pcuEdgeDnNbs8PskMeanBep (EDnNb8PMnB)**

Access	Read only
Description	This attribute counts the 8PSK_MEAN_BEP values received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (8PSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeDnCumGmskMeanBep (EDnCumGMnB)

Access	Read only
Description	This attribute counts the cumulative value of the GMSK_BEP derived from the GMSK_MEAN_BEP received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (GMSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeDnNbsGmskMeanBep (EDnNbGMnB)

Access	Read only
Description	This attribute counts the GMSK_MEAN_BEP values received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (GMSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma PdchAllocationStatistics (PdchAllocStats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma configuredTimeslots (cfgTs)

Access	Read only
Description	This attribute indicates the number of configured timeslots.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma unavailableTimeslots (unavailTs)

Access	Read only
Description	This attribute indicates the unavailable timeslots as signalled by the BSC.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **upActiveTimeslots (upActTs)**

Access	Read only
Description	This attribute indicates the current number of active uplink timeslots bearing at least one TBF.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **dnActiveTimeslots (dnActTs)**

Access	Read only
Description	This attribute indicates the current number of active downlink timeslots bearing at least one TBF.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma **ReleaseStatistics (RelStats)**

Properties	Operational
Description	This group contains statistical data collected by release counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **tbfNormalReleaseUp (tbfNormRelUp)**

Access	Read only
Description	This attribute counts the uplink TBFs that terminated normally. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **tbfNormalReleaseDn (tbfNormRelDn)**

Access	Read only
Description	This attribute counts the downlink TBFs that terminated normally. The counter wraps to zero when it exceeds its maximum value.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma noPacketResourceReq (noPktResReq)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to non-receipt of Packet Resource Request. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComNN002Max (lOCNN002Max)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to V(Q) non-progression. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3169 (lOCT3169)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3169 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComNT0001 (lOCNT0001)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to NT0001 timer expiry. The counter wraps to zero when it exceeds its maximum value.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComT3195 (lOCT3195)**

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3195 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComT3191 (lOCT3191)**

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3191 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Tdma
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink Cell Tdma component.

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **localBusy (locBus)**

Description	This attribute counts the blocks sent with the window stalled indicator set during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **remoteBusy (remBus)**

Description	This attribute counts the blocks received with the window stalled indicator set during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **configuredTimeslots (cfgTs)**

Description	This attribute indicates the number of configured timeslots at the end of the statistics collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUnavailableTimeslots (cumUnavailTs)**

Description This attribute indicates the cumulative number of unavailable timeslots at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUpActiveTimeslots (cumUpActTs)**

Description This attribute indicates the cumulative number of active uplink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUpTbfPerTimeslots (cumUpTbfPerTs)**

Description This attribute indicates the cumulative number of uplink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeDnActiveTimeslots (cumDnActTs)**

Description This attribute indicates the cumulative number of active downlink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeDnTbfPerTimeslots (cumDnTbfPerTs)**

Description This attribute indicates the cumulative number of downlink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **nbSamples (nbS)**

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Description	This attribute indicates how many samples were taken during the statistics collection interval. This value can be used with the cumulative attribute for average calculs.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **llcPacketsUp (llcPktUp)**

Description	This attribute counts the LLC packets reassembled and transmitted to the LLC relay during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **dataBlocksUp (dataBUp)**

Description	This attribute counts the uplink RLC data blocks received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **controlBlocksUp (ctrlBUp)**

Description	This attribute counts the uplink RLC control blocks received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **invalidBlocksUp (invalidBUp)**

Description	This attribute counts the uplink invalid radio blocks received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **invalidProtocolErrorBlocksUp (invalidProtErrBUp)**

Description	This attribute counts the uplink invalid radio blocks received with invalid RLC protocol during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **outOfSequenceBlocksUp (outOfSeqBUp)**

Description	This attribute counts the data blocks received uplink with Block Sequence Number outside the received window during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **packetAckNackUp (pktANUp)**

Description	This attribute counts the PACKET-UPLINK-ACK-NACK messages received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **totalRetransmissionRequested (totRtxReq)**

Description	This attribute counts the RLC/MAC block retransmission requests during the statistics collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUpRxQual (cumUpRxQual)**

Description This attribute indicates the cumulative uplink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeUpRxLev (cumUpRxLev)**

Description This attribute indicates the cumulative uplink RxLev value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **nbSamplesUpQuality (nbSamplesUpQuality)**

Description This attribute counts the samples for RxQual and RxLev cumulative values during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **llcPacketsDn (llcPktDn)**

Description This attribute counts the LLC packets segmented into RLC data blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **dataBlocksDn (dataBDn)**

Description This attribute counts the downlink RLC data blocks transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **controlBlocksDn (ctrlBDn)**

Description This attribute counts the downlink RLC control blocks transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **retransmittedDataBlocksDn (rtxDataBDn)**

Description This attribute counts the data blocks retransmitted downlink during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **packetAckNackDn (pktANDn)**

Description This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted during the statistics collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **cumulativeDnRxQual (cumDnRxQual)**

Description This attribute indicates the cumulative downlink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **nbSamplesDnQuality (nbSamplesDnQuality)**

Description This attribute counts the samples for RxQual cumulative values during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **tbfNormalReleaseUp (tbfNormRelUp)**

Description This attribute counts the uplink TBFs which terminated normally during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **tbfNormalReleaseDn (tbfNormRelDn)**

Description This attribute counts the downlink TBFs which terminated normally during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **noPacketResourceReq (noPktResReq)**

Description This attribute counts the TBFs abnormally released due to non receipt of Packet Resource Request during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComNN002Max (lOCNN002Max)**

Description This attribute counts the TBFs abnormally released due to V(Q) non progression during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComT3169 (lOCT3169)**

Description This attribute counts the TBFs abnormally released due to timer T3169 expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComNT0001 (lOCNT0001)**

Description This attribute counts the TBFs abnormally released due to NT0001 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComT3195 (lOCT3195)**

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Description	This attribute counts the TBFs abnormally released due to T3195 timer expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma **lossOfComT3191 (lOCT3191)**

Description	This attribute counts the TBFs abnormally released due to T3191 timer expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk Cell Tdma **Timeslot (Ts)**

Instance	Decimal (0..7)
Groups	GROUP Pcusa Conn PcmLk Cell Tdma Ts Operational (Oper)
Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n Ts/n* This dynamic component represents a GPRS timeslot in a TDMA. This element is used to obtain configuration information.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Tdma Ts **Operational (Oper)**

Properties	Operational
Description	This group contains all attributes describing radio parts of the network.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma Ts **tsNumber (tsNum)**

Access	Read only
Description	This attribute indicates the 16 kbit/s timeslot in the DS0 channel.
Mib	Pcusa
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma Ts **tsState (state)**

Access	Read only
Description	This attribute indicates the state of a *Timeslot*.
Mib	Pcusa
Values	unsynchronized synchronized

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma Ts **ds0Channel (ds0Ch)**

Access	Read only
Description	This attribute indicates the DS0 channel number carrying this TDMA timeslot in the AGPRS PCM.
Mib	Pcusa
Values	Decimal (0..30)
Default	No default

COMPONENT Pcusa Conn PcmLk Cell Tdma **JokerTimeslot (JokerTs)**

Instance	Decimal (0..23)
Groups	GROUP Pcusa Conn PcmLk Cell Tdma JokerTs Operational (Oper)
Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n* Joker*Ts/n* This dynamic component represents a GPRS EDGE joker timeslot in a TDMA. This element is used to obtain configuration information.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Tdma JokerTs **Operational (Oper)**

Properties	Operational
Description	This group contains all attributes describing radio parts of the network.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma JokerTs **tsNumber (tsNum)**

Access	Read only
Description	This attribute indicates the 16 kbit/s timeslot in the DS0 channel.
Mib	Pcusa
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma JokerTs **tsState (state)**

Access	Read only
Description	This attribute indicates the state of a *Timeslot*.
Mib	Pcusa

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Values	unsynchronized synchronized
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma JokerTs **ds0Channel (ds0Ch)**

Access	Read only
Description	This attribute indicates the DS0 channel number carrying this TDMA timeslot in the AGPRS PCM.
Mib	Pcusa
Values	Decimal (0..30)
Default	No default

COMPONENT Pcusa Conn PcmLk Cell **Ccch (Ccch)**

Groups	GROUP Pcusa Conn PcmLk Cell Ccch UplkStatistics (ULStats) GROUP Pcusa Conn PcmLk Cell Ccch DownlkStatistics (DLStats)

COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Ccch

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Ccch* This dynamic component represents the *Cell*'s common control channel.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Ccch **UplkStatistics (ULStats)**

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmediateAssignment (immAssUp)**

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoPdch (noPdch)**

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoTs (noTs)**

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoTbf (noTbf)**

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **channelRequest (chanReq)**

Access	Read only
Description	This attribute counts the CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access

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uplink TBF establishment.

The counter wraps to zero when it exceeds its maximum value.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetResourceRequest (pktResReq)**

Access	Read only
Description	This attribute counts the PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **deleteIndicationUp (delIndUp)**

Access	Read only
Description	This attribute counts the DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetUpAssignment (pktUpAss)**

Access	Read only
Description	This attribute counts the PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoPdch (pktNoPdch)**

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Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoTs (pktNoTs)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoTbf (pktUpNoTbf)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Ccch **DownlkStatistics (DLStats)**

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfImmediateAssignment (immAssDn)**

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Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **pagingRequest (pagReq)**

Access	Read only
Description	This attribute counts the PAGING-REQUEST messages generated by the PCU to the mobile station. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **deleteIndicationDn (delIndDn)**

Access	Read only
Description	This attribute counts the DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetDnAssignment (pktDnAss)**

Access	Read only
Description	This attribute counts the PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoTs (pktDnNoTs)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Ccch
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink Cell Ccch component.

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmediateAssignment (immAssUp)**

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Description	This attribute counts IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoPdch (noPdch)**

Description	This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoTs (noTs)**

Description	This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfImmAssigRejectNoTbf (noTbf)**

Description	This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **channelRequest (chanReq)**

Description	This attribute counts CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetResourceRequest (pktResReq)**

Description	This attribute counts PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **deleteIndicationUp (delIndUp)**

Description	This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetUpAssignment (pktUpAss)**

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Description	This attribute counts PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two_phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoPdch (pktNoPdch)**

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoTs (pktNoTs)**

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **upTbfPacketAccessRejectNoTbf (pktUpNoTbf)**

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfImmediateAssignment (immAssDn)**

Description	This attribute counts IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **pagingRequest (pagReq)**

Description	This attribute counts PAGING-REQUEST messages generated by the PCU to the mobile station during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **deleteIndicationDn (delIndDn)**

Description	This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **packetDnAssignment (pktDnAss)**

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Description	This attribute counts PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment phase during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)**

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoTs (pktDnNoTs)**

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch **dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)**

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk Cell **MobileStation (Ms)**

Instance	Decimal (0..4294967295)
Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n MobileStation/n* This dynamic component represents a mobile station in a *Cell*. It is used to display information on the mobile.
Mib	Pcusa
Common Verbs	Help List Display

COMPONENT Pcusa Conn PcmLk **BssgpVirtualConnection (Bvc)**

Instance	Decimal (0..3072)
Groups	GROUP Pcusa Conn PcmLk Bvc Operational (Oper) GROUP Pcusa Conn PcmLk Bvc Statistics (Stats) GROUP Pcusa Conn PcmLk Bvc BvcUnitDataStatistics

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(BvcUnitDataStats)
GROUP Pcusa Conn PcmLk Bvc BvcComSigStatistics (BvcComSigStats)

COLLECTED STATS PCUSupportApplication Connection PcmLink BssgpVirtualConnection

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n BssgpVirtualConnection/n* This dynamic component represents a BSSGP Virtual Connection. There is one *Bvc* per *Cell*. It is identified by a *Bvc* identifier coming from the PCU when the *Cell* is created.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Bvc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes describing *Bvc* upon receipt of a *Cell* configuration request.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcState (state)

Access	Read only
Description	This attribute indicates the BVC state. The SGSN sends the BVC blocked and unblocked status to the PCU on the Gb interface. This attribute is set to ***blocked*** when the transmission or reception is stopped and ***unblocked*** when the transmission or reception is resumed.
Mib	Pcusa
Values	blocked unblocked
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc maxBucketSize (maxBktSize)

Access	Read only
Description	This attribute indicates the maximum bucket size for the BVC. This parameter sent by the PCU is used by the BVC flow control algorithm in SGSN.
Mib	Pcusa
Values	Decimal (0..32000)
Units	kbyte

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **bucketLeakRate (bktLRate)**

Access	Read only
Description	This attribute indicates the maximum allowed BVC leak rate. The SGSN does not leak more traffic for a BVC to the PCU than is specified by this attribute.
Mib	Pcusa
Values	Decimal (0..6144)
Units	bit/s
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **bufferSize (buffSize)**

Access	Read only
Description	This attribute indicates the number of bytes currently buffered for a BVC.
Mib	Pcusa
Values	Decimal (0..32000)
Units	kbyte
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **cell**

Access	Read only
Description	This attribute indicates the cell identity number associated with this BVC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcCellLocationArea (bvcCLA)**

Access	Read only
Description	This attribute indicates the location area associated with the BVC and the cell. This attribute is used for paging.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcCellRoutingArea (bvcCRA)**

Access	Read only

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Description	This attribute indicates the routing area associated with the BVC and the cell.
Mib	Pcusa
Values	Decimal (0..256)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcNumberMs (bvcNbMs)

Access	Read only
Description	This attribute indicates the number of mobiles in the cell that are currently transferring data.
Mib	Pcusa
Values	Decimal (0..960)
Default	No default

GROUP Pcusa Conn PcmLk Bvc Statistics (Stats)

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDn

Access	Read only
Description	This attribute counts the PDUs received by this BVC from the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc pduUp

Access	Read only
Description	This attribute counts the PDUs sent by this BVC to the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDn (octDn)

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Access	Read only
Description	This attribute counts the octets received by the BVC from the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsUp (octUp)**

Access	Read only
Description	This attribute counts the octets sent by the BVC to the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Bvc **BvcUnitDataStatistics (BvcUnitDataStats)**

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduDataDn**

Access	Read only
Description	This attribute counts the UNIT-DATA PDUs received by the BVC from the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduDataUp**

Access	Read only
Description	This attribute counts the UNIT-DATA PDUs sent by the BVC to the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsDataDn**

Access	Read only
Description	This attribute counts the octets received by the BVC from the Gb interface in DL-UNIT-DATA PDUs. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsDataUp**

Access	Read only
Description	This attribute counts the octets sent by the BVC to the Gb interface in UL-UNIT-DATA PDUs. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **maxSizeDataDn**

Access	Read only
Description	This attribute indicates the largest size of LLC frame received.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **maxSizeDataUp**

Access	Read only
Description	This attribute indicates the largest size of LLC frame sent.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Bvc **BvcComSigStatistics (BvcComSigStats)**

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Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcBlockRequests (bvcBReq)

Access	Read only
Description	This attribute counts the number of times the BVC-BLOCK PDU message was sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcUnBlockRequests (bvcUBReq)

Access	Read only
Description	This attribute counts the number of times the BVC-UNBLOCK PDU message was sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct1TimeOuts (t1TO)

Access	Read only
Description	This attribute counts the number of times the BVC-BLOCK-ACK timer as well as BVC-UNBLOCK-ACK timer expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcResetRequestsUp (bvcResReqUp)

Access	Read only
Description	This attribute counts the number of times a BVC-RESET PDU message was sent by a BVC. The counter wraps to zero when it exceeds its maximum value.

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Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcResetRequestsDn (bvcResReqDn)

Access	Read only
Description	This attribute counts the number of times a BVC-RESET PDU message was received by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct2TimeOuts (t2TO)

Access	Read only
Description	This attribute counts the number of times the BVC-RESET-ACK timer expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcFlowControlRequests (bvcFCtrlReq)

Access	Read only
Description	This attribute counts the FLOW-CONTROL-BVC PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlowControlRequests (msFCtrlReq)

Access	Read only
Description	This attribute counts the FLOW-CONTROL-MS PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

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Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **llcDiscardedPdu (llcDiscPdu)**

Access	Read only
Description	This attribute counts the LLC-DISCARDED PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **llcDiscardedOctets (llcDiscOct)**

Access	Read only
Description	This attribute counts the octets discarded according to the LLC-DISCARDED-INDICATION message sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **nmStatusUp (nmStusUp)**

Access	Read only
Description	This attribute counts the NM-STATUS PDUs sent by a BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **nmStatusDn (nmStusDn)**

Access	Read only
Description	This attribute counts the NM-STATUS PDUs received by a BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

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ATTRIBUTE Pcusa Conn PcmLk Bvc **msFlushLLRequest (msFlushLLReq)**

Access	Read only
Description	This attribute counts the FLUSH-LL PDUs sent from the SGSN to the PCU. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **msRadioStatusInd (msRadStusInd)**

Access	Read only
Description	This attribute counts the INDICATION messages when a radio exception condition occurred on the radio interface in the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **msSuspendReq (msSusReq)**

Access	Read only
Description	This attribute counts the SUSPEND PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **msRaCapabilityInd (msRaCapInd)**

Access	Read only
Description	This attribute counts the RA-CAPABILITY PDUs received by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **msRaCapabilityUpdateReq (msRaCapUpdateReq)**

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Access	Read only
Description	This attribute counts the RA-CAPABILITY-UPDATE PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct3TimeOuts (t3TO)**

Access	Read only
Description	This attribute counts the number of times the SUSPEND-ACK timer expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct5TimeOuts (t5TO)**

Access	Read only
Description	This attribute counts the number of times the RA-CAPABILITY-UPDATE-ACK timer expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc **msCellTransitionDn (msCellTransDn)**

Access	Read only
Description	This attribute counts the FLUSH-LL PDUs that are sent by SGSN to PCU when the Mobile Station located on a cell indicated by the BVCI has moved to another cell indicated to the new BVCI. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

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Default	COLLECTED STATS PCUSupportApplication Connection PcmLink BssgpVirtualConnection
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink BssgpVirtualConnection component.

ATTRIBUTE Pcusa Conn PcmLk Bvc **cell**

Description	This attribute indicates the cell identity number associated to this BVC.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduDn**

Description	This attribute counts the PDUs received by this BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduUp**

Description	This attribute counts the PDUs sent by this BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsDn (octDn)**

Description	This attribute counts the octets received by the BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsUp (octUp)**

Description	This attribute counts the octets sent by the BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduDataDn**

Description	This attribute counts the UNIT-DATA PDUs received by the BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **pduDataUp**

Description	This attribute counts the UNIT-DATA PDUs sent by the BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsDataDn**

Description	This attribute counts the octets received by the BVC from the Gb interface in DL-UNIT-DATA PDUs during the statistics collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Bvc **octetsDataUp**

Description — This attribute counts the octets sent by the BVC to the Gb interface in UL-UNIT-DATA PDUs during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **maxSizeDataDn**

Description — This attribute indicates the largest size of LLC frame received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **maxSizeDataUp**

Description — This attribute indicates the biggest size of LLC frames sent during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcBlockRequests (bvcBReq)**

Description — This attribute counts BVC-BLOCK PDU messages sent by the BVC during the statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcUnBlockRequests (bvcUBReq)**

Description — This attribute counts BVC-UNBLOCK PDU messages sent by the BVC during the statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct1TimeOuts (t1TO)**

Description — This attribute counts BVC-BLOCK-ACK and BVC-UNBLOCK-ACK timer expiries during the statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcResetRequestsUp (bvcResReqUp)**

Description — This attribute counts BVC-RESET PDU messages sent by a BVC during the statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvcResetRequestsDn (bvcResReqDn)**

Description — This attribute counts BVC-RESET PDU messages received by the BVC during the statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct2TimeOuts (t2TO)**

Description — This attribute counts BVC-RESET-ACK timer expiries during the statistics collection interval.

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Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcFlowControlRequests (bvcFCtrlReq)

Description This attribute counts FLOW-CONTROL-BVC PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlowControlRequests (msFCtrlReq)

Description This attribute counts FLOW-CONTROL-MS PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc llcDiscardedPdu (llcDiscPdu)

Description This attribute counts LLC-DISCARDED PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc llcDiscardedOctets (llcDiscOct)

Description This attribute counts the octets discarded with a LLC-DISCARDED-INDICATION message sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc nmStatusUp (nmStusUp)

Description This attribute counts NM-STATUS PDUs sent by a BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc nmStatusDn (nmStusDn)

Description This attribute counts NM-STATUS PDUs received by a BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlushLLRequest (msFlushLLReq)

Description This attribute counts FLUSH-LL PDUs sent from the SGSN to the PCU during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msRadioStatusInd (msRadStusInd)

Description This attribute counts INDICATION messages reporting that a radio exception condition occurred on the radio interface in the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk Bvc **msSuspendReq (msSusReq)**

Description — This attribute counts SUSPEND PDUs sent by the BVC during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msRaCapabilityInd (msRaCapInd)**

Description — This attribute counts RA-CAPABILITY-INDICATION PDUs received by the BVC during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msRaCapabilityUpdateReq (msRaCapUpdateReq)**

Description — This attribute counts RA-CAPABILITY-UPDATE PDUs sent by the BVC during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct3TimeOuts (t3TO)**

Description — This attribute counts SUSPEND-ACK timer expiries during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **bvct5TimeOuts (t5TO)**

Description — This attribute counts RA-CAPABILITY-UPDATE-ACK timer expiries during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc **msCellTransitionDn (msCellTransDn)**

Description — This attribute counts FLUSH-LL PDUs sent by the SGSN to the PCU when the mobile station located on a cell indicated by the BVCI has moved to another cell indicated to the new BVCI.

Values — Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk **CgiCell (CgiCell)**

Instance — cellLocationArea [Decimal (0..65535)]
cellId [Decimal (0..65535)]

Groups — GROUP Pcusa Conn PcmLk CgiCell Operational (Oper)
GROUP Pcusa Conn PcmLk CgiCell CellIdentifierOperational (CellIdOper)
GROUP Pcusa Conn PcmLk CgiCell PdchAllocStatistics (AllocStats)
GROUP Pcusa Conn PcmLk CgiCell PdchFullDpxStatistics (FDpxStats)
GROUP Pcusa Conn PcmLk CgiCell PdchUplkStatistics (ULStats)
GROUP Pcusa Conn PcmLk CgiCell PdchDownlkStatistics (DLStats)
GROUP Pcusa Conn PcmLk CgiCell DynAgprsStatistics (DynAgprsStats)
GROUP Pcusa Conn PcmLk CgiCell QoSStatistics (QoSStats)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell

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Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n* Cgi*Cell/n* This dynamic component represents a GSM cell. There can be several *CgiCell* components per PCM. Each *CgiCell* component is uniquely identified in the GSM system by its cell location area and cellID index.
Mib	Pcusa
Dyn. Subcomp.	COMPONENT Pcusa Conn PcmLk CgiCell Tdma (Tdma) COMPONENT Pcusa Conn PcmLk CgiCell Ccch (Ccch) COMPONENT Pcusa Conn PcmLk CgiCell MobileStation (Ms)
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Operational (Oper)

Properties	Operational
Description	This group contains information about the cell.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell cellBVCI

Access	Read only
Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier corresponding to the cell.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell cellState (state)

Access	Read only
Description	This attribute indicates the state of a GSM cell as specified by the BSC. ***unConfigured*** - The cell is not configured. ***configured*** - The message cell_config has been received from the BSC and acknowledged. ***availableOos*** - The message cell_available has been received from the BSC and acknowledged. ***inService*** - The message cell_gprs_open has been sent to the BTS, and the BTS has acknowledged the message. ***destroying*** - The cell object instance is being destroyed in the PCU element, and is waiting for completion of the BSSGP BVC blocking procedure.
Mib	Pcusa

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Values	unConfigured configured availableOos inService destroying
Default	No default

GROUP Pcusa Conn PcmLk CgiCell CellIdentifierOperational (CellIdOper)

Properties	Operational
Description	This group contains attributes used for cell‘s identification as defined in the GSM 08.18 Technical Specification.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell msCountryCode (mCC)

Access	Read only
Description	This attribute indicates the mobile country code.
Mib	Pcusa
Values	Decimal (0..999)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell msNetworkCode (mNC)

Access	Read only
Description	This attribute indicates the mobile network code.
Mib	Pcusa
Values	Decimal (0..999)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell PdchAllocStatistics (AllocStats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell upMultiSlotRequests (upMSlotReq)

Access	Read only
Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station. Index 1 counts the number of 1-timeslot allocation requests. Index 2 counts the number of 2-timeslot allocation requests. Index 3 counts the number of 3-timeslot allocation requests.

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	Index 4 counts the number of 4- or more timeslot allocation requests. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **upMultiSlotAllocations (upMSlotAll)**

Access	Read only
Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station. Index 1 counts the number of 1-timeslot granted allocations. Index 2 counts the number of 2-timeslot granted allocations. Index 3 counts the number of 3-timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnMultiSlotRequests (dnMSlotReq)**

Access	Read only
Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU. Index 1 counts the number of 1-timeslot allocation requests. Index 2 counts the number of 2-timeslots allocation requests. Index 3 counts the number of 3-timeslots allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnMultiSlotAllocations (dnMSlotAll)**

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Access	Read only
Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU. Index 1 counts the number of 1-timeslot granted allocations. Index 2 counts the number of 2-timeslot granted allocations. Index 3 counts the number of 3-timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell PdchFullDpxStatistics (FDpxStats)

Properties	Operational
Description	This group contains statistical data collected on Packet Data Channel (PDCH) full duplex parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell fullDuplexTbfEstablishment (fdTbfEst)

Access	Read only
Description	This attribute counts how many full duplex TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentFullDuplexTbfEstablishment (currFdTbfEst)

Access	Read only
Description	This attribute indicates the number of full duplex TBFs currently established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDowngradedTbf (EDgrdTbf)

Access	Read only

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Description	The attribute counts the EGPRS TBFs downgraded in GPRS.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **pcuEdgeTbfEstReq (ETbfEstReq)**

Access	Read only
Description	The attribute counts the EGPRS TBF establishment requests.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell **PdchUplkStatistics (ULStats)**

Properties	Operational
Description	This group contains statistical data collected on PDCH uplink parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell **upTbfEstablishment (upTbfEst)**

Access	Read only
Description	This attribute counts how many uplink TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **currentUpTbfEstablishment (currUpTbfEst)**

Access	Read only
Description	This attribute indicates the number of uplink TBFs currently established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **allocatedBlocksUpTbf (allBUpTbf)**

Access	Read only
Description	This attribute counts the blocks allocated for the uplink TBFs. The counter wraps to zero when it exceeds its maximum value.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **currentAllocatedBlocksUpTbf (currAllBUpTbf)**

Access	Read only
Description	This attribute indicates the blocks currently allocated for the uplink TBFs.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **nonAckUpTbfEstablishment (nAckUpTbfEst)**

Access	Read only
Description	This attribute counts the non-acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **currentNonAckUpTbfEstablishment (currNAckUpTbfEst)**

Access	Read only
Description	This attribute indicates the current non-acknowledged uplink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **ackUpTbfEstablishment (ackUpTbfEst)**

Access	Read only
Description	This attribute counts the acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **currentAckUpTbfEstablishment (currAckUpTbfEst)**

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Access	Read only
Description	This attribute indicates the current acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **upTbfReleases (upTbfRel)**

Access	Read only
Description	This attribute counts how many uplink TBFs were released.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **closeEndedUpTbfEstablishment (closeEndUpTbfEst)**

Access	Read only
Description	This attribute counts the close-ended uplink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **pcuEdgeUpCumUsefulDataPerCell (EUpCumUseDt)**

Access	Read only
Description	This attribute indicates the cumulated size, in octets, of all the RLC EDGE data blocks received for the first time on a pipe in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **pcuEdgeUpUsefulDataDurationPerCell (EUpUseDtDur)**

Access	Read only
Description	This attribute indicates the cumulated time, in multiple of 20ms, where the pipes for UL EGPRS TBF are in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

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GROUP Pcusa Conn PcmLk CgiCell **PdchDownlkStatistics (DLStats)**

Properties	Operational
Description	This group contains statistical data collected on PDCH downlink parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfEstablishment (dnTbfEst)**

Access	Read only
Description	This attribute counts how many downlink TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **currentDnTbfEstablishment (currDnTbfEst)**

Access	Read only
Description	This attribute indicates the current downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **currentAllocatedBlocksDnTbf (currAllBDnTbf)**

Access	Read only
Description	This attribute indicates the blocks currently allocated for the downlink TBFs.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **nonAckDnTbfEstablishment (nAckDnTbfEst)**

Access	Read only
Description	This attribute counts the non-acknowledged downlink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentNonAckDnTbfEstablishment (currNAckDnTbfEst)

Access	Read only
Description	This attribute indicates the current non-acknowledged downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell ackDnTbfEstablishment (ackDnTbfEst)

Access	Read only
Description	This attribute counts the acknowledged downlink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentAckDnTbfEstablishment (currAckDnTbfEst)

Access	Read only
Description	This attribute indicates the current acknowledged downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfReleases (dnTbfRel)

Access	Read only
Description	This attribute counts how many downlink TBFs were released.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDnCumUsefulDataPerCell (EDnCumUseDt)

Access	Read only
Description	This attribute indicates the cumulated size, in octets, of all the RLC EDGE data blocks sent for the first time on a pipe in verbose state.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **pcuEdgeDnUsefulDataDurationPerCell (EDnUseDtDur)**

Access	Read only
Description	This attribute indicates the cumulated time, in multiple of 20ms, where the pipes for DL EGPRS TBF are in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell **DynAgprsStatistics (DynAgprsStats)**

Properties	Operational
Description	This group contains statistical data collected on dynamic AGPRS parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dyAgprsNbModif (dyAgprsNbMod)**

Access	Read only
Description	This attribute indicates the number of changes to allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)**

Access	Read only
Description	This attribute indicates the average number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dyAgprsMinNbTimeslots (dyAgprsMinNbTs)**

Access	Read only
Description	This attribute indicates the minimum number of allocated AGPRS timeslots in the cell.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)

Access	Read only
Description	This attribute indicates the maximum number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)

Access	Read only
Description	This attribute indicates the average AGPRS load criterion value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Access	Read only
Description	This attribute indicates the maximum AGPRS load criterion value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDynAgprsJokerCumNbTimeslot (EDyAJkCumTs)

Access	Read only
Description	This attribute indicates the cumulative number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDynAgprsJokerMinNbTimeslot (EDyAJkMinTs)

Access	Read only

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Description	This attribute indicates the minimum number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **pcuEdgeDynAgprsJokerMaxNbTimeslot (EDyAJkMaxTs)**

Access	Read only
Description	This attribute indicates the maximum number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **pcuEdgeAgprsJokerNbofBlocks (EAJkNbBlks)**

Access	Read only
Description	This attribute indicates the total number of TRAU EDGE data blocks sent on the Agprs Joker channels in the DL direction.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **pcuEdgeAgprsMainNbofBlocks (EAMnNbBlks)**

Access	Read only
Description	This attribute indicates the total number of TRAU EDGE data blocks sent on the Agprs Main channels in the DL direction.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell **QoSStatistics (QoSStats)**

Properties	Operational
Description	This group contains statistical data collected on downlink TBFs on which a QoS parameter is attributed.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)**

Access	Read only

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Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)**

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)**

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)**

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)**

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Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

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Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell **cellBVCI**

Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **upMultiSlotRequests (upMSlotReq)**

Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **upMultiSlotAllocations (upMSlotAll)**

Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnMultiSlotRequests (dnMSlotReq)**

Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnMultiSlotAllocations (dnMSlotAll)**

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Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **fullDuplexTbfEstablishment (fdTbfEst)**

Description	This attribute counts how many full duplex TBFs were established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **upTbfReleases (upTbfRel)**

Description	This attribute counts how many uplink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **cumulativeTimeUpTbf (cumTimeUpTbf)**

Description	This attribute indicates the cumulative duration of all uplink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk CgiCell **allocatedBlocksUpTbf (allBUpTbf)**

Description	This attribute counts the blocks allocated for the uplink TBFs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **nonAckUpTbfEstablishment (nAckUpTbfEst)**

Description	This attribute counts the non-acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **ackUpTbfEstablishment (ackUpTbfEst)**

Description	This attribute counts the acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **closeEndedUpTbfEstablishment (closeEndUpTbfEst)**

Description	This attribute counts the close-ended uplink TBFs established during the statistics collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfReleases (dnTbfRel)

Description This attribute counts how many downlink TBFs were released during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell cumulativeTimeDnTbf (cumTimeDnTbf)

Description This attribute indicates the cumulative duration of all downlink TBFs released during the statistics collection interval.

Values Decimal (0..4294967295)

Units seconds

ATTRIBUTE Pcusa Conn PcmLk CgiCell nonAckDnTbfEstablishment (nAckDnTbfEst)

Description This attribute counts the non-acknowledged downlink TBFs established during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell ackDnTbfEstablishment (ackDnTbfEst)

Description This attribute counts the acknowledged downlink TBFs established during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsNbModif (dyAgprsNbMod)

Description This attribute counts the modifications of Agprs timeslots allocated in the cell during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)

Description This attribute indicates the average number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMinNbTimeslots (dyAgprsMinNbTs)

Description This attribute indicates the minimum number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)

Description This attribute indicates the maximum number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)

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Description	This attribute indicates the average Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Description	This attribute indicates the maximum Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)

Description	This attribute counts the downlink TBFs with gold QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

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Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)**

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)**

Description	This attribute counts the downlink TBFs with silver QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)**

Description	This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)**

Description	This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)**

Description	This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell **dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)**

Description	This attribute counts the downlink TBFs with bronze QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk CgiCell **Tdma (Tdma)**

Instance	Decimal (0..15)

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Groups	GROUP Pcusa Conn PcmLk CgiCell Tdma Operational (Oper) GROUP Pcusa Conn PcmLk CgiCell Tdma Statistics (Stats) GROUP Pcusa Conn PcmLk CgiCell Tdma UplkStatistics (ULStats) GROUP Pcusa Conn PcmLk CgiCell Tdma DownlkStatistics (DLStats) GROUP Pcusa Conn PcmLk CgiCell Tdma PdchAllocationStatistics (PdchAllocStats) GROUP Pcusa Conn PcmLk CgiCell Tdma ReleaseStatistics (RelStats)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Tdma

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n* This component represents a TDMA. There can be several TDMA per *Cell*.
Mib	Pcusa
Dyn. Subcomp.	COMPONENT Pcusa Conn PcmLk CgiCell Tdma Timeslot (Ts) COMPONENT Pcusa Conn PcmLk CgiCell Tdma JokerTimeslot (JokerTs)
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Tdma Operational (Oper)

Properties	Operational
Description	This group contains attributes describing the time division multiple access.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma tdmaState (state)

Access	Read only
Description	This attribute indicates the state of a TDMA relative to the BSC.
Mib	Pcusa
Values	unconfigured configured available
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuTdmaEdgeCapacity (edgeCap)

Access	Read only
Description	This attribute indicates the EDGE capacity of a TDMA.
Mib	Pcusa
Values	noEdge upToMCS4DlFullEdgeUl

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	fullEdge upToMCS4DIUI
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma **Statistics (Stats)**

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **localBusy (locBus)**

Access	Read only
Description	This attribute counts the blocks sent with the window stalled indicator set. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **remoteBusy (remBus)**

Access	Read only
Description	This attribute counts the blocks received with the window stalled indicator set. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma **UplkStatistics (ULStats)**

Properties	Operational
Description	This group contains statistical data collected by counters in uplink transmission mode.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **llcPacketsUp (llcPktUp)**

Access	Read only
Description	This attribute counts the LLC packets reassembled and transmitted to the LLC relay. The counter wraps to zero when it exceeds its maximum value.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **dataBlocksUp (dataBUp)**

Access	Read only
Description	This attribute counts the uplink RLC data blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **controlBlocksUp (ctrlBUp)**

Access	Read only
Description	This attribute counts the uplink RLC control blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **invalidBlocksUp (invalidBUp)**

Access	Read only
Description	This attribute counts the uplink invalid radio blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **invalidProtocolErrorBlocksUp (invalidProtErrBUp)**

Access	Read only
Description	This attribute counts the uplink invalid radio blocks received with invalid RLC protocol. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **outOfSequenceBlocksUp (outOfSeqBUp)**

Access	Read only
Description	This attribute counts the data blocks received uplink with Block Sequence Number outside the received window. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **packetAckNackUp (pktANUp)**

Access	Read only
Description	This attribute counts the PACKET-UPLINK-ACK-NACK messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **totalRetransmissionRequested (totRtxReq)**

Access	Read only
Description	This attribute counts the RLC/MAC block retransmission requests. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **pcuEdgeDataBlocksUp (EDtBlkUp)**

Access	Read only
Description	This attribute counts the cumulative number of EGPRS RLC data blocks received by the PCU on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **pcuEdgeUpCumMeanBep (EUpCumMnBep)**

Access	Read only
Description	This attribute counts the cumulated value of the assumed BEP received by the PCU in each EGPRS RLC data block on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **pcuEdgeUpNbsMeanBep (EUpNbMnBep)**

Access	Read only
Description	This attribute counts the MEAN_BEP values received by the PCU in each EGPRS RLC data block on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma **DownlkStatistics (DLStats)**

Properties	Operational
Description	This group contains statistical data collected by counters in downlink transmission mode.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **llcPacketsDn (llcPktDn)**

Access	Read only
Description	This attribute counts the LLC packets segmented into RLC data blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **dataBlocksDn (dataBDn)**

Access	Read only

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Description	This attribute counts the downlink RLC data blocks transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **controlBlocksDn (ctrlBDn)**

Access	Read only
Description	This attribute counts the downlink RLC control blocks transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **retransmittedDataBlocksDn (rtxDataBDn)**

Access	Read only
Description	This attribute counts the data blocks retransmitted downlink. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **packetAckNackDn (pktANDn)**

Access	Read only
Description	This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **pcuEdgeDataBlocksDn (EDtBlkDn)**

Access	Read only
Description	This attribute counts the cumulative number of EGPRS RLC data blocks sent by the PCU on this TDMA.

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The counter wraps to zero when it exceeds its maximum value.

Mib Pcusa

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDnCum8PskMeanBep (EDnCum8PMnB)

Access Read only

Description This attribute counts the cumulative value of the 8PSK_BEP derived from the 8PSK_MEAN_BEP received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (8PSK_MEAN_BEP).

The counter wraps to zero when it exceeds its maximum value.

Mib Pcusa

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDnNbs8PskMeanBep (EDnNb8PMnB)

Access Read only

Description This attribute counts the 8PSK_MEAN_BEP values received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (8PSK_MEAN_BEP).

The counter wraps to zero when it exceeds its maximum value.

Mib Pcusa

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDnCumGmskMeanBep (EDnCumGMnB)

Access Read only

Description This attribute counts the cumulative value of the GMSK_BEP derived from the GMSK_MEAN_BEP received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (GMSK_MEAN_BEP).

The counter wraps to zero when it exceeds its maximum value.

Mib Pcusa

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDnNbsGmskMeanBep (EDnNbGMnB)

Access Read only

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Description	This attribute counts the GMSK_MEAN_BEP values received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (GMSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma **PdchAllocationStatistics (PdchAllocStats)**

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **configuredTimeslots (cfgTs)**

Access	Read only
Description	This attribute indicates the number of configured timeslots.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **unavailableTimeslots (unavailTs)**

Access	Read only
Description	This attribute indicates the unavailable timeslots as signalled by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **upActiveTimeslots (upActTs)**

Access	Read only
Description	This attribute indicates the current number of active uplink timeslots bearing at least one TBF.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **dnActiveTimeslots (dnActTs)**

Access	Read only

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Description	This attribute indicates the current number of active downlink timeslots bearing at least one TBF.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma **ReleaseStatistics (RelStats)**

Properties	Operational
Description	This group contains statistical data collected by release counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **tbfNormalReleaseUp (tbfNormRelUp)**

Access	Read only
Description	This attribute counts the uplink TBFs that terminated normally. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **tbfNormalReleaseDn (tbfNormRelDn)**

Access	Read only
Description	This attribute counts the downlink TBFs that terminated normally. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **noPacketResourceReq (noPktResReq)**

Access	Read only
Description	This attribute counts the TBFs abnormally released due to non-receipt of Packet Resource Request. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComNN002Max (lOCNN002Max)**

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Access	Read only
Description	This attribute counts the TBFs abnormally released due to V(Q) non-progression. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3169 (IOCT3169)**

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3169 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComNT0001 (IOCNT0001)**

Access	Read only
Description	This attribute counts the TBFs abnormally released due to NT0001 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3195 (IOCT3195)**

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3195 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3191 (IOCT3191)**

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Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3191 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Tdma
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell Tdma component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **localBusy (locBus)**

Description	This attribute counts the blocks sent with the window stalled indicator set during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **remoteBusy (remBus)**

Description	This attribute counts the blocks received with the window stalled indicator set during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **configuredTimeslots (cfgTs)**

Description	This attribute indicates the number of configured timeslots at the end of the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUnavailableTimeslots (cumUnavailTs)**

Description	This attribute indicates the cumulative number of unavailable timeslots at the sample time during the statistics collection interval. The average can be calculated by dividing this attribute value by the *nbSamples* value.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUpActiveTimeslots (cumUpActTs)**

Description	This attribute indicates the cumulative number of active uplink timeslots bearing at least one TBF at the sample time during the statistics collection interval. The average can be calculated by dividing this attribute value by the *nbSamples* value.

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Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUpTbfPerTimeslots (cumUpTbfPerTs)**

Description This attribute indicates the cumulative number of uplink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeDnActiveTimeslots (cumDnActTs)**

Description This attribute indicates the cumulative number of active downlink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeDnTbfPerTimeslots (cumDnTbfPerTs)**

Description This attribute indicates the cumulative number of downlink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **nbSamples (nbS)**

Description This attribute indicates how many samples were taken during the statistics collection interval.

This value can be used with the cumulative attribute for average calculs.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **llcPacketsUp (llcPktUp)**

Description This attribute counts the LLC packets reassembled and transmitted to the LLC relay during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **dataBlocksUp (dataBUp)**

Description This attribute counts the uplink RLC data blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **controlBlocksUp (ctrlBUp)**

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Description	This attribute counts the uplink RLC control blocks received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **invalidBlocksUp (invalidBUp)**

Description	This attribute counts the uplink invalid radio blocks received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **invalidProtocolErrorBlocksUp (invalidProtErrBUp)**

Description	This attribute counts the uplink invalid radio blocks received with invalid RLC protocol during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **outOfSequenceBlocksUp (outOfSeqBUp)**

Description	This attribute counts the data blocks received uplink with Block Sequence Number outside the received window during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **packetAckNackUp (pktANUp)**

Description	This attribute counts the PACKET-UPLINK-ACK-NACK messages received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **totalRetransmissionRequested (totRtxReq)**

Description	This attribute counts the RLC/MAC block retransmission requests during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUpRxQual (cumUpRxQual)**

Description	This attribute indicates the cumulative uplink RxQual value during the statistics collection interval. The average can be calculated by dividing this attribute value by the *nbSamples* value.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeUpRxLev (cumUpRxLev)**

Description	This attribute indicates the cumulative uplink RxLev value during the statistics collection interval. The average can be calculated by dividing this attribute value by the *nbSamples* value.
Values	Decimal (0..4294967295)

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **nbSamplesUpQuality (nbSamplesUpQuality)**

Description — This attribute counts the samples for RxQual and RxLev cumulative values during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **llcPacketsDn (llcPktDn)**

Description — This attribute counts the LLC packets segmented into RLC data blocks received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **dataBlocksDn (dataBDn)**

Description — This attribute counts the downlink RLC data blocks transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **controlBlocksDn (ctrlBDn)**

Description — This attribute counts the downlink RLC control blocks transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **retransmittedDataBlocksDn (rtxDataBDn)**

Description — This attribute counts the data blocks retransmitted downlink during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **packetAckNackDn (pktANDn)**

Description — This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **cumulativeDnRxQual (cumDnRxQual)**

Description — This attribute indicates the cumulative downlink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **nbSamplesDnQuality (nbSamplesDnQuality)**

Description — This attribute counts the samples for RxQual cumulative values during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **tbfNormalReleaseUp (tbfNormRelUp)**

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Description	This attribute counts the uplink TBFs which terminated normally during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **tbfNormalReleaseDn (tbfNormRelDn)**

Description	This attribute counts the downlink TBFs which terminated normally during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **noPacketResourceReq (noPktResReq)**

Description	This attribute counts the TBFs abnormally released due to non receipt of Packet Resource Request during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComNN002Max (lOCNN002Max)**

Description	This attribute counts the TBFs abnormally released due to V(Q) non progression during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3169 (lOCT3169)**

Description	This attribute counts the TBFs abnormally released due to timer T3169 expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComNT0001 (lOCNT0001)**

Description	This attribute counts the TBFs abnormally released due to NT0001 timer expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3195 (lOCT3195)**

Description	This attribute counts the TBFs abnormally released due to T3195 timer expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma **lossOfComT3191 (lOCT3191)**

Description	This attribute counts the TBFs abnormally released due to T3191 timer expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk CgiCell Tdma **Timeslot (Ts)**

Instance	Decimal (0..7)
Groups	GROUP Pcusa Conn PcmLk CgiCell Tdma Ts Operational (Oper)
Scope	Device

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Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n Ts/n* This dynamic component represents a GPRS timeslot in a TDMA. This element is used to obtain configuration information.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Tdma Ts **Operational (Oper)**

Properties	Operational
Description	This group contains all attributes describing radio parts of the network.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma Ts **tsNumber (tsNum)**

Access	Read only
Description	This attribute indicates the 16 kbit/s timeslot in the DS0 channel.
Mib	Pcusa
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma Ts **tsState (state)**

Access	Read only
Description	This attribute indicates the state of a *Timeslot*.
Mib	Pcusa
Values	unsynchronized synchronized
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma Ts **ds0Channel (ds0Ch)**

Access	Read only
Description	This attribute indicates the DS0 channel number carrying this TDMA timeslot in the AGPRS PCM.
Mib	Pcusa
Values	Decimal (0..30)
Default	No default

COMPONENT Pcusa Conn PcmLk CgiCell Tdma **JokerTimeslot (JokerTs)**

Instance	Decimal (0..23)

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Groups	GROUP Pcusa Conn PcmLk CgiCell Tdma JokerTs Operational (Oper)
Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n* Joker*Ts/n* This dynamic component represents a GPRS EDGE joker timeslot in a TDMA. This element is used to obtain configuration information.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Tdma JokerTs Operational (Oper)

Properties	Operational
Description	This group contains all attributes describing radio parts of the network.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma JokerTs tsNumber (tsNum)

Access	Read only
Description	This attribute indicates the 16 kbit/s timeslot in the DS0 channel.
Mib	Pcusa
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma JokerTs tsState (state)

Access	Read only
Description	This attribute indicates the state of a *Timeslot*.
Mib	Pcusa
Values	unsynchronized synchronized
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma JokerTs ds0Channel (ds0Ch)

Access	Read only
Description	This attribute indicates the DS0 channel number carrying this TDMA timeslot in the AGPRS PCM.
Mib	Pcusa
Values	Decimal (0..30)
Default	No default

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COMPONENT Pcusa Conn PcmLk CgiCell Ccch (Ccch)

Groups
GROUP Pcusa Conn PcmLk CgiCell Ccch UplkStatistics (ULStats)
GROUP Pcusa Conn PcmLk CgiCell Ccch DownlkStatistics (DLStats)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Ccch

Scope: Device

Description: *Pcusa/n Conn/n PcmLink/n Cell/n Ccch*
This dynamic component represents the *Cell*'s common control channel.

Mib: Pcusa

Common Verbs: Help, List, Display

GROUP Pcusa Conn PcmLk CgiCell Ccch UplkStatistics (ULStats)

Properties: Operational

Description: This group contains statistical data collected by counters.

Mib: Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmediateAssignment (immAssUp)

Access: Read only

Description: This attribute counts the IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment.

The counter wraps to zero when it exceeds its maximum value.

Mib: Pcusa

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoPdch (noPdch)

Access: Read only

Description: This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment.

The counter wraps to zero when it exceeds its maximum value.

Mib: Pcusa

Values: Decimal (0..4294967295)

Default: No default

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ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmAssigRejectNoTs (noTs)**

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmAssigRejectNoTbf (noTbf)**

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **channelRequest (chanReq)**

Access	Read only
Description	This attribute counts the CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetResourceRequest (pktResReq)**

Access	Read only
Description	This attribute counts the PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.

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Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **deleteIndicationUp (delIndUp)**

Access	Read only
Description	This attribute counts the DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetUpAssignment (pktUpAss)**

Access	Read only
Description	This attribute counts the PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoPdch (pktNoPdch)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoTs (pktNoTs)**

Access	Read only

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Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoTbf (pktUpNoTbf)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Ccch **DownlkStatistics (DLStats)**

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfImmediateAssignment (immAssDn)**

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **pagingRequest (pagReq)**

Access	Read only
Description	This attribute counts the PAGING-REQUEST messages generated by the PCU to the mobile station.

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	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **deleteIndicationDn (delIndDn)**

Access	Read only
Description	This attribute counts the DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetDnAssignment (pktDnAss)**

Access	Read only
Description	This attribute counts the PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoTs (pktDnNoTs)**

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Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)**

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Ccch
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell Ccch component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmediateAssignment (immAssUp)**

Description	This attribute counts IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmAssigRejectNoPdch (noPdch)**

Description	This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmAssigRejectNoTs (noTs)**

Description	This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS

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per TS is reached" in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfImmAssigRejectNoTbf (noTbf)**

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of "Maximum TBF per TDMA is reached" in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **channelRequest (chanReq)**

Description This attribute counts CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetResourceRequest (pktResReq)**

Description This attribute counts PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **deleteIndicationUp (delIndUp)**

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetUpAssignment (pktUpAss)**

Description This attribute counts PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two_phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoPdch (pktNoPdch)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of "No PDCH available for GPRS" in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoTs (pktNoTs)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of "Maximum MS per TS is

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reached" in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **upTbfPacketAccessRejectNoTbf (pktUpNoTbf)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of "Maximum TBF per TDMA is reached" in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfImmediateAssignment (immAssDn)**

Description This attribute counts IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **pagingRequest (pagReq)**

Description This attribute counts PAGING-REQUEST messages generated by the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **deleteIndicationDn (delIndDn)**

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **packetDnAssignment (pktDnAss)**

Description This attribute counts PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment phase during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of "No PDCH available for GPRS" in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoTs (pktDnNoTs)**

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of "Maximum MS per TS is reached" in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

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Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch **dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)**

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk CgiCell **MobileStation (Ms)**

Instance	Decimal (0..4294967295)
Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n MobileStation/n* This dynamic component represents a mobile station in a *Cell*. It is used to display information on the mobile.
Mib	Pcusa
Common Verbs	Help List Display

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Pcusa

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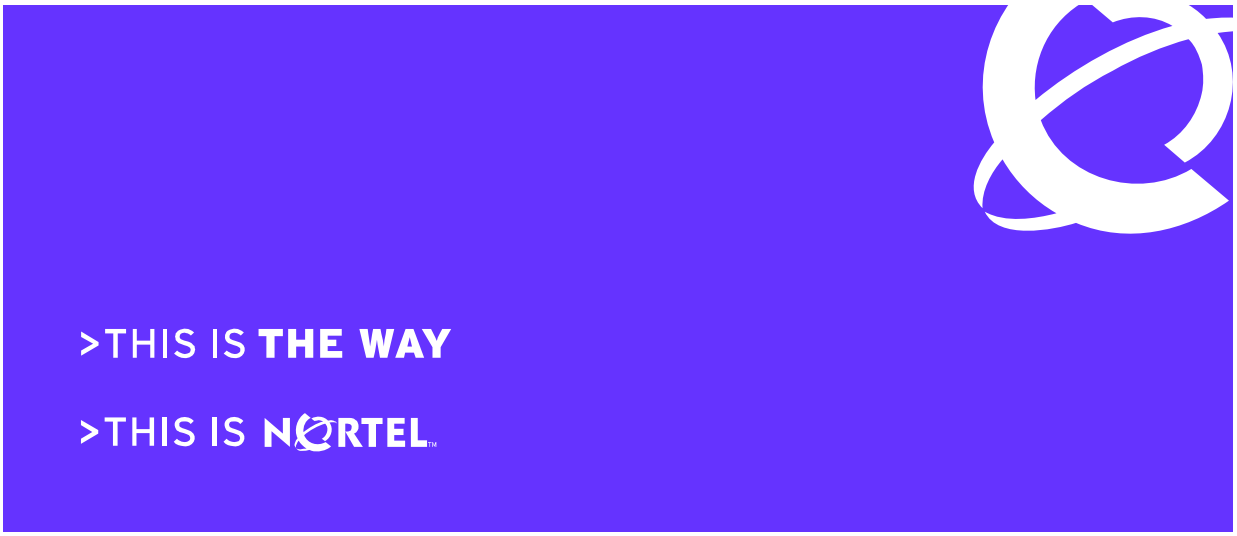

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Pcusn

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Language type: U.S. English

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COMPONENT PacketControlUnitSupportNode (Pcusn)

Scope	Application
Description	*PacketControlUnitSupportNode* This component represents the Packet Control Unit Support Node (PCUSN) functionality of GPRS and organizes all its related subcomponents.
Mib	WirelessNssBssPcu
Subcomponents	COMPONENT Pcusn GprsTransportLayer (Gtl)
Opt. Subcomp.	COMPONENT Pcusn NetworkServiceEntity (Nse)
Common Verbs	Help List Display Add DELete

COMPONENT Pcusn GprsTransportLayer (Gtl)

Groups	GROUP Pcusn Gtl NsProv
Scope	Application
Description	*Pcusn GprsTransportLayer* This component represents the Transport Layer functionality of the Gb interface of the Packet Control Unit Support Node (PCUSN).
Mib	WirelessNssBssPcu
Common Verbs	Help List Display

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GROUP Pcusn Gtl NsProv

Properties	Provisioned
Description	This group contains provisionable attributes for the Network Service (NS) protocol layer of GPRS.
Mib	WirelessNssBssPcu

ATTRIBUTE Pcusn Gtl nsBlockTimer (tnsBlk)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) BLOCK and UNBLOCK procedures. This is the time interval between an NS-BLOCK and NS-BLOCK ACK, or between an NS-UNBLOCK and NS-UNBLOCK ACK. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu
Values	Decimal (1..120)
Units	seconds
Default	3

ATTRIBUTE Pcusn Gtl nsBlockRetries (nBlk)

Access	Read: All Write: All
Description	This attribute specifies the number of times the NS-BLOCK message can be retried if NS-BLOCK ACK is not received before the *nsBlockTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..10)
Default	3

ATTRIBUTE Pcusn Gtl nsUnBlockRetries (nUnBlk)

Access	Read: All Write: All
Description	This attribute specifies the number of times the NS-UNBLOCK message can be retried if NS-UNBLOCK ACK is not received before the *nsBlockTimer* expires. The default value is the value provided in the GPRS specification.

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Mib	WirelessNssBssPcu
Values	Decimal (3..15)
Default	3

ATTRIBUTE Pcusn Gtl nsResetTimer (tnsReset)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) RESET procedure. This is the time interval between an NS-RESET and NS-RESET ACK. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu
Values	Decimal (1..120)
Units	seconds
Default	3

ATTRIBUTE Pcusn Gtl nsResetRetries (nReset)

Access	Read: All Write: All
Description	This attribute specifies the times the NS-RESET message can be retried if NS-RESET ACK is not received before the *nsResetTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (3..10)
Default	5

ATTRIBUTE Pcusn Gtl nsTestTimer (tnsTest)

Access	Read: All Write: All
Description	This attribute specifies the periodicity of the Network Service Virtual Connection (NS-VC) TEST procedure which is the initiation of the NS-ALIVE Protocol Data Unit (PDU). The range is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu
Values	Decimal (1..60)
Units	seconds

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Default	30

ATTRIBUTE Pcusn Gtl nsAliveTimer (tnsAlive)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) ALIVE procedure. This is the time interval between an NS-ALIVE and NS-ALIVE ACK. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu
Values	Decimal (1..10)
Units	seconds
Default	3

ATTRIBUTE Pcusn Gtl nsAliveRetries (nAlive)

Access	Read: All Write: All
Description	This attribute specifies the number of times the NS-ALIVE message can be retried if NS-ALIVE ACK is not received before the *nsAliveTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (3..10)
Default	10

COMPONENT Pcusn NetworkServiceEntity (Nse)

Instance	Decimal (0..65535)
Groups	GROUP Pcusn Nse Provisioned (Prov)
Scope	Application
Description	*Pcusn NetworkServiceEntity/<nsei>* This component represents a Network Service Entity (NSE). Each NSE is associated with a single Packet Control Unit (PCU) and is identified by means of a Network Service Entity Identifier (NSEI). The same NSE can

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be provisioned in multiple PcGtl instances to enable load sharing.

Mib WirelessNssBssPcu

Common Verbs
Help
List
Display
Add
DELete

GROUP Pcusn Nse Provisioned (Prov)

Properties Provisioned

Description This group contains provisionable attributes for the BSS GPRS Protocol (BSSGP) layer of GPRS.

Mib WirelessNssBssPcu

ATTRIBUTE Pcusn Nse linkToPcuConn (lToPcu)

Access Read: All
Write: All

Description This attribute specifies a *Pcusa Connection* component that this NSE associates with. The purpose is to associate an NSE (Gb interface) with a *Connection* which groups the PCM links to a BSC (a GPRS interface). The operator will provision this link when setting up the conections through the PCUSN for the BSC to SGSN.

Mib WirelessNssBssPcu

Values Link (Service, linkToNse)

Default No default

ATTRIBUTE Pcusn Nse bvcBlockUnblockTimer (tBlkUnblk)

Access Read: All
Write: All

Description This attribute specifies the timer to guard the blocking and unblocking procedures. The Packet Control Unit (PCU) sends a BVC-BLOCK (UNBLOCK) Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) and starts the *bvcBlockUnblockTimer*. The PCU stops the timer upon reception of a BVC-BLOCK (UNBLOCK)-ACK PDU from the SGSN. If the timer expires, the PCU retries the BVC-BLOCK(UNBLOCK) procedure.

The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).

Mib WirelessNssBssPcu

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Values	Decimal (1..30)
Units	seconds
Default	15

ATTRIBUTE Pcusn Nse bvcBlockRetries (nBvcBlk)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can send the BVC-BLOCK Protocol Data Unit (PDU) in case a BVC-BLOCK ACK is not received before the *bvcBlockUnblockTimer* expiry (defined in *Pcusn Nse* component).
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse bvcUnblockRetries (nBvcUnblk)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the BVC-UNBLOCK Protocol Data Unit (PDU) in case a BVC-UNBLOCK ACK is not received before the *bvcBlockUnblockTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse bvcResetReqTimer (tReset)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the BVC-RESET procedure. The Packet Control Unit (PCU) sends a BVC-RESET Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) and starts the *bvcResetReqTimer* for a BVC. The PCU stops the timer upon reception of a BVC-RESET-ACK PDU from the SGSN. If the timer expires, the PCU retries the BVC-RESET procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessNssBssPcu
Values	Decimal (1..120)

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Units	seconds
Default	60

ATTRIBUTE Pcusn Nse bvcResetReqRetries (nBvcRst)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the BVC-RESET Protocol Data Unit (PDU) in case a BVC-RESET ACK is not received before the *bvcResetReqTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse suspendTimer (tSuspend)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the SUSPEND procedure. The Packet Control Unit (PCU) sends a SUSPEND Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) and starts the *suspendTimer*. The PCU stops the timer upon reception of a SUSPEND-ACK (NACK) PDU from the SGSN. If the timer expires, the PCU retries the SUSPEND procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessNssBssPcu
Values	Decimal (1..10)
Units	seconds
Default	5

ATTRIBUTE Pcusn Nse suspendRetries (nSuspend)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the SUSPEND Protocol Data Unit (PDU) in case a SUSPEND ACK is not received before the *suspendTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)

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Default	3

ATTRIBUTE Pcusn Nse resumeTimer (tResume)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the RESUME procedure. The Packet Control Unit (PCU) sends a RESUME Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) and starts the *resumeTimer*. The PCU stops the timer upon reception of a RESUME-ACK (NACK) PDU from the SGSN. If the timer expires, the PCU retries the RESUME procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessNssBssPcu
Values	Decimal (1..10)
Units	seconds
Default	5

ATTRIBUTE Pcusn Nse resumeRetries (nResume)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the RESUME PDU in case a RESUME ACK is not received before the *resumeTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse raCapabilityUpTimer (tRaUp)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the RA-CAPABILITY-UPDATE procedure. When the Packet Control Unit (PCU) sends a RA-CAPABILITY-UPDATE Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) it starts the *raCapabilityUpTimer*. The PCU stops the timer upon reception of a RA-CAPABILITY-UPDATE-ACK PDU from the SGSN. If the timer expires, the PCU retries the RA-CAPABILITY-UPDATE procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessNssBssPcu

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Values	Decimal (1..30)
Units	seconds
Default	15

ATTRIBUTE Pcusn Nse raCapabiltyUpRetries (nRaUp)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the RA-CAPABILITY-UPDATE PDU in case a RA-CAPABILITY-UPDATE ACK is not received before the *raCapabilityUpTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse flowControlMaxRate (flCntlMaxRt)

Access	Read: All Write: All
Description	This attribute specifies the minimum interval between sending consequent Flow Control Protocol Data Unit (PDU) for a given BSS GPRS Virtual Connection (BVC) or for a Mobile Station (MS). Changing the value can affect the flow control function at the Packet Control Unit (PCU) level, with the Logical Link Control (LLC) frames discarded due to overflow of the MS or the BVC buckets.
Mib	WirelessNssBssPcu
Values	Decimal (1001..9999)
Units	msec
Default	2000

ATTRIBUTE Pcusn Nse tsFlowCntlBucketSize (tsBmax)

Access	Read: All Write: All
Description	This attribute specifies the maximum bucket size (Bmax) for a BSS GPRS Virtual Connection (BVC) Flow Control procedure. The value is the BVC Max Bucket size for a BVC with 1 time slot. The Packet Control Unit (PCU) calculates the actual BVC Max Bucket size for the configuration, by multiplying this provisioned value by the number of time slots in the cell, dynamically given by the Base Station Control (BSC). The default value has been estimated based on the *msFlowCntlBucketSize* default value, with 8 Mobiles in downlink transfer. The unit is 100 bytes.
Mib	WirelessNssBssPcu

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Values	Decimal (0..65535)
Default	5760

ATTRIBUTE Pcusn Nse tsLeakRate (tsLeakRt)

Access	Read: All Write: All
Description	This attribute specifies the leak rate parameter for a BSS GPRS Virtual Connection (BVC) with 1 time slot. The Packet Control Unit (PCU) calculates the actual BVC leak rate for the configuration, by multiplying this provisioned value by the number of time slots in the cell, dynamically given by the Base Station Control (BSC). The default value assumes a CS1 Mobile Station (MS), with a throughput of 10000 bit/s, with assumption that the flow is statistically regular in the cell. The unit is 100 bit/s.
Mib	WirelessNssBssPcu
Values	Decimal (0..65535)
Default	125

ATTRIBUTE Pcusn Nse msFlowCntlBucketSize (msBmax)

Access	Read: All Write: All
Description	This attribute specifies the Mobile Station (MS) maximum bucket size. The default value assumes 6 Logical Link Control (LLC) frames in the bucket. The unit is 100 bytes.
Mib	WirelessNssBssPcu
Values	Decimal (241..65535)
Default	720

ATTRIBUTE Pcusn Nse msLeakRate (msLeakRt)

Access	Read: All Write: All
Description	This attribute specifies the Mobile Station (MS) leak rate parameter. The default value is based on the fact that the MS Bucket has a null throughput during the radio datapath establishment with the MS. The unit is 100 bit/s.
Mib	WirelessNssBssPcu
Values	Decimal (0..65535)
Default	50

ATTRIBUTE Pcusn Nse flowControlMaxDelay (flCntMaxDelay)

Access	Read: All Write: All

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Description	This attribute specifies the maximum interval between two consecutive MS-Flow-Control messages sent to the SGSN. It must be smaller than the Th timer defined in the SGSN (from GSM8.18). It must be greater than *flowControlMaxRate* + 3 seconds. The value of 3 seconds is considered as the maximum tranmission delay between a PCUSN and a SGSN.
Mib	WirelessNssBssPcu
Values	Decimal (5..6000)
Units	seconds
Default	300

ATTRIBUTE Pcusn Nse linkToSlaveNse (lTonse)

Access	Read: All Write: All
Description	This attribute specifies the corresponding *PcGtl Nse* component instances provisioned on the FPs. The purpose is to provide common parameters to all instances of this NSE on the FPs and also to associate the *Pcusa Connection* component with this NSE.
Mib	WirelessNssBssPcu
List of	Link (Service, linkToMasterNse)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Pcusn

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Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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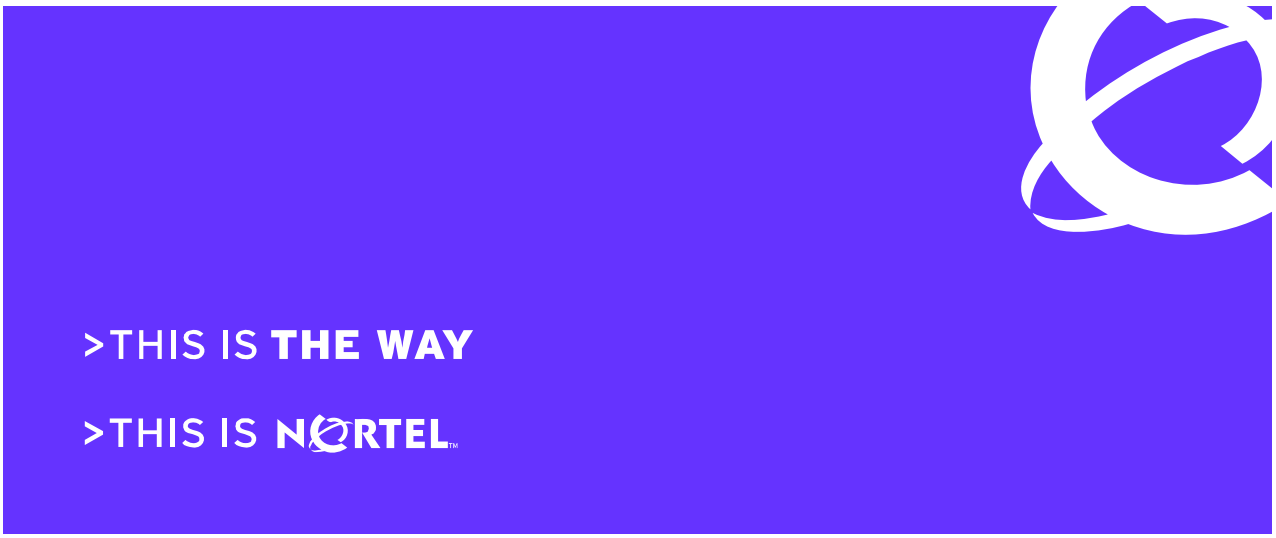

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Piwf

NN10600-060

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Language type: U.S. English

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COMPONENT PppIwf (Piwf)

Instance	Decimal (1..65535)
Groups	GROUP Piwf CustomerIdentifierData (CidData) GROUP Piwf IfEntryProv (IfEntry) GROUP Piwf OsiState (State) GROUP Piwf OperationalStatus (OperStatus)
Scope	Application
Description	*PppIwf/n* This component defines an instance of the *Ppp* interworking function. It provides a means for Ppp (RFC1661) to interwork with different forms of transport protocols (MPLS and AtmMpe).
Mib	PppIwf
Subcomponents	COMPONENT Piwf Link (Lnk) COMPONENT Piwf LinkQualityMonitor (Lqm) COMPONENT Piwf NetworkControlProtocol (Ncp)
Opt. Subcomp.	COMPONENT Piwf Framer COMPONENT Piwf AtmAdaptionPoint (AtmAp) COMPONENT Piwf MlpppFramer (MlFramer)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Piwf CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	PppIwf

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ATTRIBUTE Piwf customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	PppIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP Piwf IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	PppIwf

ATTRIBUTE Piwf ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	PppIwf
Values	up down testing
Default	up

ATTRIBUTE Piwf ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

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Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	PppIwf
Values	Decimal (1..65535)
Default	No default

GROUP Piwf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	PppIwf

ATTRIBUTE Piwf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	PppIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Piwf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

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The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: PppIwf

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Piwf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: PppIwf

Values: idle
active (activ)
busy

Default: idle

GROUP Piwf OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: PppIwf

ATTRIBUTE Piwf snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: PppIwf

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Values	up down testing
Default	up

COMPONENT Piwf Link (Lnk)

Groups	GROUP Piwf Lnk Provisioned (Prov) GROUP Piwf Lnk Operational (Oper)
Scope	Application
Description	*Ppp/n Link* This component is used to contain all the attributes related to the *Ppp* link. This is a mandatory subcomponent of *Ppp* and does not need to be added.
Mib	PppIwf
Common Verbs	Help List Display

GROUP Piwf Lnk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Ppp* Link component.
Mib	PppIwf

ATTRIBUTE Piwf Lnk configInitialMru (cimru)

Access	Read and write
Description	This is the initial Maximum Receive Unit (Mru) that the local *Ppp* entity will advertise to the remote entity. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	Decimal (68..18000)
Units	octets
Default	18000

ATTRIBUTE Piwf Lnk configMagicNumber (cmn)

Access	Read and write
Description	If ***enabled*** the local node will attempt to perform Magic Number negotiation with the remote node. If ***disabled*** this negotiation is not performed. In any event, the local node will comply with any magic number negotiations attempted by the remote node, per the *Ppp* specification. A

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	change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	disabled enabled
Default	enabled

ATTRIBUTE Piwf Lnk restartTimer (rtimer)

Access	Read and write
Description	This is the time, in milliseconds, that *Ppp* will wait for a response to a configure request or a terminate request before retrying.
Mib	PppIwf
Values	Decimal (1000..10000)
Units	msec
Default	3000

ATTRIBUTE Piwf Lnk continuityMonitor (cntmon)

Access	Read and write
Description	This attribute turns on/off (***enabled/disabled***) the Link Continuity Monitor. If set to ***enabled***, periodic keep alive echo packet will be sent over the *Ppp* link. If set to ***disabled***, no keep alive packets will be sent. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	enabled disabled
Default	disabled

ATTRIBUTE Piwf Lnk negativeAckTries (naks)

Access	Read and write
Description	This attribute specifies the maximum negative acknowledgments sent to the remote *Ppp* entity during negotiation before defaulting its configuration parameters.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	10

ATTRIBUTE Piwf Lnk qualityThreshold (quality)

Access	Read and write

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Description	This attribute specifies the minimum allowed line quality before the line is considered too poor to continue operation. The value for this attribute is a percentage measure of the line quality given in integers (10 to 99). The higher the value, the more stringent the line requirements.
Mib	PppIwf
Values	Decimal (10..99)
Units	%
Default	90

ATTRIBUTE Piwf Lnk qualityWindow (qwindow)

Access	Read and write
Description	This attribute specifies the number of seconds used for sampling line quality. If line quality drops below the level set with the *qualityThreshold* attribute during this window, this instance of *Ppp* will be marked down until line quality recovers.
Mib	PppIwf
Values	Decimal (10..400)
Units	seconds
Default	30

ATTRIBUTE Piwf Lnk terminateRequestTries (term)

Access	Read and write
Description	This attribute specifies the maximum terminate requests to be sent, when closing the connection, and not answered before this instance of *Ppp* enters a closing state.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	10

ATTRIBUTE Piwf Lnk configureRequestTries (try)

Access	Read and write
Description	This attribute specifies the number of configuration requests that will be sent out and not answered before this instance of *Ppp* enters a listening state. If both sides enter the listening state then the link will not come up. To eliminate this possibility, this attribute should be set to 1000000000. This will ensure that this end of the *Ppp* link will continue to try until the link is good.
Mib	PppIwf
Values	Decimal (0..4294967295)

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Default	1000000000

GROUP Piwf Lnk Operational (Oper)

Properties	Operational
Description	This group contains the *Ppp* Link Operational attributes.
Mib	PppIwf

ATTRIBUTE Piwf Lnk operState (state)

Access	Read only
Description	This is the operational state of the Link Control Protocol. For more information as to the definition of each state see RFC1331 section 5.3.
Mib	PppIwf
Values	initial starting closed stopped closing stopping reqsent ackrcvd acksent opened
Default	initial

ATTRIBUTE Piwf Lnk lineCondition (lcond)

Access	Read only
Description	This attribute describes the condition of the physical line that *Ppp* is running over. ***ok***: The condition of the line is good. ***looped***: The line is looped back on itself, probably at the remote end. ***noClock***: There is a hardware problem with the line. The cable may not be plugged in correctly. ***badLineCondition***: The quality of the line is below the *qualityThreshold*.
Mib	PppIwf
Values	ok looped noClock badLineCondition
Default	ok

ATTRIBUTE Piwf Lnk badAddresses (ba)

Access	Read only

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Description	This attribute counts the number of packets received with an incorrect Address Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lnk badControls (bc)

Access	Read only
Description	This attribute counts the number of packets received on this link with an incorrect Control Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lnk packetTooLongs (ptl)

Access	Read only
Description	This attribute counts the number of packets received that have been discarded because their length exceeded the Maximum Receive Unit (Mru). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lnk badFcss (bfcs)

Access	Read only
Description	This attribute counts the number of packets received that have been discarded due to having an incorrect Frame Check Sequence (Fcs). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Piwf Lnk localMru (lmru)

Access	Read only
Description	This is the current value of the Maximum Receive Unit (Mru) for the local *Ppp* Entity. This value is the Mru that the remote entity is using when sending packets to the local *Ppp* entity.
Mib	PppIwf
Values	Decimal (1..2147483648)
Units	octets
Default	1

ATTRIBUTE Piwf Lnk remoteMru (rmru)

Access	Read only
Description	This is the current value of the Maximum Receive Unit (Mru) for the remote *Ppp* entity. This value is the Mru that the local entity is using when sending packets to the remote *Ppp* entity.
Mib	PppIwf
Values	Decimal (1..2147483648)
Units	octets
Default	No default

ATTRIBUTE Piwf Lnk transmitFcsSize (tfcs)

Access	Read only
Description	This is the size of the Frame Check Sequence (Fcs) in bits that the local node will generate when sending packets to the remote node.
Mib	PppIwf
Values	Decimal (0..128)
Units	bits
Default	0

ATTRIBUTE Piwf Lnk receiveFcsSize (rfcs)

Access	Read only
Description	This is the size of the Frame Check Sequence (Fcs) in bits that the remote node will generate when sending packets to the local node.
Mib	PppIwf
Values	Decimal (0..128)
Units	bits

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Default	0

COMPONENT Piwf LinkQualityMonitor (Lqm)

Groups	GROUP Piwf Lqm Provisioned (Prov) GROUP Piwf Lqm Operational (Oper)
Scope	Application
Description	*Ppp/n LinkQualityMonitor* This component is used to contain all the operational attributes for the *Ppp* Link Quality Monitor. This is a mandatory subcomponent of *Ppp* and does not need to be manually added.
Mib	PppIwf
Common Verbs	Help List Display

GROUP Piwf Lqm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Ppp* Link Quality Monitor component.
Mib	PppIwf

ATTRIBUTE Piwf Lqm configPeriod (cfgper)

Access	Read and write
Description	This is the *Lqm* reporting period that the local *Ppp* entity will attempt to negotiate with the remote entity, in units of hundredths of a second. A value of “0” allows the remote *Ppp* entity to determine the reporting period. A value greater than 180,000 (1/2 hour) allows the period to be determined dynamically as a function of the transmit data rate. A value from 1-9 is rounded up to 10 during negotiation. A change to this attribute does not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	Decimal (0..2147483647)
Units	centiseconds
Default	0

ATTRIBUTE Piwf Lqm configStatus (cfgstat)

Access	Read and write
Criticality	Process
Description	If this attribute is ***enabled***, the local node will attempt to perform *Lqm* negotiation with the remote node. If it is ***disabled*** this negotiation is not

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	performed. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	disabled enabled
Default	disabled

GROUP Piwf Lqm Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Ppp* Link Quality Monitor component.
Mib	PppIwf

ATTRIBUTE Piwf Lqm quality (qual)

Access	Read only
Description	This is the current quality of the link as declared by the local *Ppp* entity's LinkQuality Management modules. A value of ***good*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and *Link quality* is above *LinkQuality Threshold*. A value of ***bad*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and *Link quality* is not above *Link qualityThreshold*. A value of ***notDetermined*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and the quality of the link has not been calculated yet or *LinkQualityMonitor configStatus* is ***disabled***.
Mib	PppIwf
Values	good bad notDetermined
Default	notDetermined

ATTRIBUTE Piwf Lqm inGoodOctets (ingo)

Access	Read only
Description	This attribute counts the number of good octets received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lqm localPeriod (localp)

Access	Read only

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Description	This is the *Lqm* reporting period, in hundredths of a second that is in effect for the local *Ppp* entity.
Mib	PppIwf
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Piwf Lqm remotePeriod (remotep)

Access	Read only
Description	This is the *Lqm* reporting period, in hundredths of a second, that is in effect for the remote *Ppp* entity.
Mib	PppIwf
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Piwf Lqm outLqrs (outr)

Access	Read only
Description	This attribute counts the number of link quality reports sent out. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lqm inLqrs (inr)

Access	Read only
Description	This attribute counts the number of link quality reports received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT Piwf NetworkControlProtocol (Ncp)

Groups	GROUP Piwf Ncp IpOperational (IpOper) GROUP Piwf Ncp MplsOperational (MplsOper)
Scope	Application

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Description	*Ppp/n NetworkControlProtocol* This component is used to contain all the operational attributes for the *Ppp* Network Control Protocols (*Ncp*). This is a mandatory subcomponent of *Ppp* and does not need to be manually added.
Mib	PppIwf
Common Verbs	Help List Display

GROUP Piwf Ncp IpOperational (IpOper)

Properties	Operational
Description	This group contains the Ip Network Control Protocol operational attributes.
Mib	PppIwf

ATTRIBUTE Piwf Ncp ipOperState (ipostate)

Access	Read only
Description	This is the operational state of the Ip network protocol. For more information as to the definition of each state see RFC1331 section 5.3.
Mib	PppIwf
Values	initial starting closed stopped closing stopping reqsent ackrcvd acksent opened
Default	initial

GROUP Piwf Ncp MplsOperational (MplsOper)

Properties	Operational
Description	This group contains the MPLS Network Control Protocol operational attribute.
Mib	PppIwf

ATTRIBUTE Piwf Ncp mplsOperState (mplsostate)

Access	Read only
Description	This attribute indicates the operational states of the MPLS Network Control Protocol. In the initial state the lower layer (LCP in this case) is in a

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Down state The lower layer is also Down in the starting state where in contrast an administrative Open has been received. When the lower Layer is Up a req-sent is sent to the peer awaiting an ackrcvd. An ack-sent is reached when an ack is sent in reply to the peer ack-req request. An open state is reached when both peers have sent ack-req and received ack-rcvd. Closing is before closed state when waiting for a terminate-ack after sending a terminate-req. The same for stopping and stopped states with the difference that the The Stopping state provides a well defined opportunity to terminate the link before allowing new traffic. (for more information as to the definition of each state see RFC 1331 section 5.3).

Mib — PppIwf

Values
initial
starting
closed
stopped
closing
stopping
reqsent
ackrcvd
acksent
opened

Default — initial

COMPONENT Piwf Framer

Groups
GROUP Piwf Framer Provisioned (Prov)
GROUP Piwf Framer OsiState (State)
GROUP Piwf Framer Statistics (Stats)
GROUP Piwf Framer LinkUtilization (Util)
GROUP Piwf Framer DiscardStatistics (Disc)

COLLECTED STATS PppIwf Framer

Scope — Application

Description

Ppp/n Framer
PppIwf/n Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer* that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute that binds the application component to a specific hardware

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component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib PppIwf

Common Verbs
Help
List
Display
Add
DELete

GROUP Piwf Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib PppIwf

ATTRIBUTE Piwf Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the logical processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib PppIwf

Values Link (Hardware, applicationFramerName)

Default No default

GROUP Piwf Framer OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	PppIwf

ATTRIBUTE Piwf Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	PppIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Piwf Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	PppIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Piwf Framer usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	PppIwf
Values	idle active (activ) busy
Default	idle

GROUP Piwf Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer, MlpppFramer or MlpppLink* component.
Mib	PppIwf

ATTRIBUTE Piwf Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Piwf Framer **lrcErrors**

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Framer **nonOctetErrors**

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Framer **overruns**

Access	Read only
Description	This attribute counts the total number of frames received from the interface for which overruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Framer **underruns**

Access	Read only
Description	This attribute counts the total number of frames transmitted to the interface for which underruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Piwf Framer **largeFrmErrors**

Access	Read only
Description	This attribute counts the total number of frames received that were too large. The frame exeeceded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Framer **octetToIf**

Access	Read only
Description	This attribute indicates the number of octets transmitted by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppIwf
Values	Long Integer
Default	No default

ATTRIBUTE Piwf Framer **octetFromIf**

Access	Read only
Description	This attribute indicates the number of octets received by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets received by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets received by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppIwf
Values	Long Integer
Default	No default

ATTRIBUTE Piwf Framer **frmFromIf**

Access	Read only

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Description	This attribute indicates the number of LCP, NCP and Data frames received by the *Framer.* This attribute indicates the number of NCP and Data frames received by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments received by the *MlpppLink.*
Mib	PppIwf
Values	Long Integer
Default	No default

ATTRIBUTE Piwf Framer frmToIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames transmitted by the *Framer.* This attribute indicates the number of NCP and Data frames transmitted by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments transmitted by the *MlpppLink.*
Mib	PppIwf
Values	Long Integer
Default	No default

GROUP Piwf Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	PppIwf

ATTRIBUTE Piwf Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data sent to the interface as a percentage of the available bandwidth of the link (*Framer*) or the MLPPP Bundle (*MlpppFramer*). The utilization is the average for the last minute.
Mib	PppIwf

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Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Piwf Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data received from the interface as a percentage of the available bandwidth on the link(*Framer*) or the MLPPP Bundle (*MlpppFramer*). The utilization is the average for the last minute.
Mib	PppIwf
Values	Decimal (0..100)
Units	%
Default	0

GROUP Piwf Framer DiscardStatistics (Disc)

Properties	Operational
Description	This group contains the operational discards statistics for the *Framer/ MlpppFramer* component.
Mib	PppIwf

ATTRIBUTE Piwf Framer discCongFrmToIfEp0 (disc0)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 0 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppIwf
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

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ATTRIBUTE Piwf Framer discCongFrmToIfEp1 (disc1)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 1 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppIwf
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Piwf Framer discCongFrmToIfEp2 (disc2)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 2 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppIwf
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Piwf Framer discCongFrmToIfEp3 (disc3)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 3 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.

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Mib	PppIwf
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

COLLECTED STATS PppIwf Framer

Description	The statistics record generated by the PppIwf Framer component.

ATTRIBUTE Piwf Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Piwf Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Piwf Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Piwf Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Piwf Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Piwf AtmAdaptionPoint (AtmAp)

Groups	GROUP Piwf AtmAp Provisioned (AtmApProv) GROUP Piwf AtmAp OsiState (State) GROUP Piwf AtmAp Operational (AapOper)
Scope	Application

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Description	*Piwf/n AtmAdaptionPoint* This component represents a SoftPVC between Point-to-Point Protocol and remote ATM Interface. Multiprotocol Encapsulation as specified in RFC1483 is used to transfer higher-layer protocol (IP) data across a virtual channel in an ATM network.
Mib	PppIwf
Subcomponents	COMPONENT Piwf AtmAp TrafficManagement (Tm)
Dyn. Subcomp.	COMPONENT Piwf AtmAp AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete

VERB Restart Piwf AtmAp

Impact	Service
Description	This command is used to restart the automatic connections procedure. The operational attributes *retryTimerValue* and *retryFailures* will also be reset. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed, as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection will first be released. This command will fail if the *channel* associated with the *Framer* component is disabled, or if *spvcStatus* has the value ***initialising***. If *spvcStatus* has the value ***failed***, this command may fail.

GROUP Piwf AtmAp Provisioned (AtmApProv)

Properties	Provisioned
Description	This group contains the previsional attribute for *AtmAdaptionPoint* component.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp maxTransmissionUnit (mtu)

Access	Read and write
Criticality	Process
Description	This attribute specifies the size of the largest datagram which can be sent

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on the SoftPVC. This includes the size of the Logical Link Control header (if applicable) as well as the protocol data unit.

Mib	PppIwf
Values	Decimal (256..9188)
Units	octets
Default	9188

ATTRIBUTE Piwf AtmAp encapType (etype)

Access	Read and write
Criticality	Process
Description	This attribute specifies the RFC1483 encapsulation type to be used for the *AtmConnections* under this *PppAtmIwf*. Specifying ***llcEncap*** allows multiplexing of multiple protocols over the VCCs. The protocol of the carried PDU will be identified by an IEEE 802.2 Logical Link Control header. If Bridging or Inverse ARP is to be carried over a VCC, ***llcEncap*** must be used. Specifying ***ipVcEncap*** indicates that the VCC (e.g. *AtmConnection*) under an *AtmAdaptionPoint* component will use VC based multiplexing and will carry IP PDUs only.
Mib	PppIwf
Values	llcEncap ipVcEncap
Default	ipVcEncap

ATTRIBUTE Piwf AtmAp localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the local NSAP address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on *nodePrefix* will be provided. If *ModuleData nodePrefix* is empty and one or more alternate switch prefixes (the *alternatePorsPrefixes* attribute of the *ModuleData* component) have been provisioned, a default value for *localAddress* based on the first provisioned *alternatePorsPrefix* value will be provided. If switch prefixes are empty, *localAddress* will default to an empty string. To obtain a valid default *localAddress* in this case, either or both of the *ModuleData nodePrefix* and *ModuleData alternatePorsPrefixes* attributes

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must be provisioned, and this end point component must then be deleted and re-added.

Mib	PppIwf
Values	String (40, AESANsapAddress)
Default	No default

ATTRIBUTE Piwf AtmAp calledVpiVci (vc)

Access	Read and write
Criticality	Process
Description	*calledVpiVci* specifies the identity of the PVC at the remote ATM node on which the SoftPVC connection terminates.
Mib	PppIwf
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

ATTRIBUTE Piwf AtmAp addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the remote NSAP address which this *AtmAdaptionPoint* will call.
Mib	PppIwf
Values	String (40, AESANsapAddress)
Default	No default

ATTRIBUTE Piwf AtmAp firstRetryInterval (int)

Access	Read and write
Criticality	Process
Description	This attribute specifies the time to wait, in seconds, before attempting to establish the connection after the first failed attempt. The time to wait between subsequent call attempts will generally differ due to a backoff scheme.
Mib	PppIwf
Values	Decimal (1..3600)
Units	seconds

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Default	10

ATTRIBUTE Piwf AtmAp retryLimit (limit)

Access	Read and write
Criticality	Process
Description	*retryLimit* specifies the maximum number of consecutive unsuccessful connection setup attempts that may be made before further attempts are abandoned. If this limit is reached, the *Restart* verb may be used to restart connection attempts. If *retryLimit* is ***0***, there is no limit; attempts will continue indefinitely until a successful connection is established.
Mib	PppIwf
Values	Decimal (0..65535)
Default	0

GROUP Piwf AtmAp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	PppIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Piwf AtmAp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	PppIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Piwf AtmAp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	PppIwf
Values	idle active (activ) busy
Default	idle

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GROUP Piwf AtmAp Operational (AapOper)

Properties	Operational
Description	This group contains operational attributes for *AtmAdaptionPoint* component.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp spvcStatus (status)

Access	Read only
Description	*spvcStatus* indicates the status of the incoming and outgoing connections. When this attribute has the value ***initialising***, it indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests will be sent. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that a connection has not been established, and the component is waiting to restart. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed***, it indicates that the ATM Networking resources are not available to setup the connection.
Mib	PppIwf
Values	initialising connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Piwf AtmAp retryTimeRemaining (timer)

Access	Read only
Description	*retryTimerValue* is the current value of the retry timer for this connection; it

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indicates the number of seconds before the next connection attempt will be made. *retryTimerValue* is initialized when a connection attempt fails.

When *retryTimerValue* reaches ***0***, an attempt will be made to establish the connection.

When the timer is not running, for example when the connection has been established, *retryTimerValue* will be ***0***.

Mib PppIwf

Values Decimal (0..86400)

Units seconds

Default No default

ATTRIBUTE Piwf AtmAp retryFailures (failures)

Access Read only

Description

retryFailures counts the number of consecutive failed connection attempts.

retryFailures is reset to ***0*** whenever a connection is successfully established, or the connection is restarted using the *Restart* verb. The counter wraps when the maximum value is exceeded.

Mib PppIwf

Values Decimal (0..2147483647)

Default No default

ATTRIBUTE Piwf AtmAp lastSetupFailureCause (failCause)

Access Read only

Description

lastSetupFailureCause indicates the cause of the last connection setup failure.

The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib PppIwf

Values Decimal (0..255)

Default No default

ATTRIBUTE Piwf AtmAp lastSetupFailureDiagnostic (failDiag)

Access Read only

Description

lastSetupFailureDiagnostic provides a diagnostic to supplement the

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lastSetupFailureCause attribute.

The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib	PppIwf
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Piwf AtmAp lastTearDownCause (cause)

Access	Read only
Description	*lastTearDownCause* indicates the cause of the last connection tear down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	PppIwf
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Piwf AtmAp lastTearDownDiagnostic (diag)

Access	Read only
Description	*lastTearDownDiagnostic* provides a diagnostic to supplement the *lastTearDownCause* attribute. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	PppIwf
Values	String (0..8, ASCII)
Default	No default

COMPONENT Piwf AtmAp TrafficManagement (Tm)

Groups	GROUP Piwf AtmAp Tm Provisioned (TmProv)
Scope	Application

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Description	*Piwf/n AtmAp trafficManagement* This component contains ATM QoS information used by the SPVC connection to request a particular QoS from ATM.
Mib	PppIwf
Common Verbs	Help List Display LOCK Unlock

GROUP Piwf AtmAp Tm Provisioned (TmProv)

Properties	Provisioned
Description	This group contains the provisional attribute for *TrafficManagement* component.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp Tm atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the desired ATM service category for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	PppIwf
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr)
Default	unspecifiedBitRate

ATTRIBUTE Piwf AtmAp Tm peakCellRate (pcr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the desired peak cell rate (PCR) for this connection.

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	Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	PppIwf
Values	Decimal (0..2147483647)
Default	0

COMPONENT Piwf AtmAp AtmConnection (AtmCon)

Groups	GROUP Piwf AtmAp AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	PppIwf
Common Verbs	Help List Display

GROUP Piwf AtmAp AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	PppIwf
Values	The name of the component
Default	No default

COMPONENT Piwf MIpppFramer (MIFramer)

Groups	GROUP Piwf MIFramer Provisioned (Prov) GROUP Piwf MIFramer OsiState (State) GROUP Piwf MIFramer Statistics (Stats) GROUP Piwf MIFramer LinkUtilization (Util) GROUP Piwf MIFramer DiscardStatistics (Disc)

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GROUP Piwf MlFramer MlpppFramerOper (Oper)
GROUP Piwf MlFramer MlpppFramerStatistics (MlStats)

COLLECTED STATS PppIwf MlpppFramer

Scope: Application

Description:

Ppp/n MlpppFramer
PppIwf/n MlpppFramer

The *MlpppFramer* component contains a group of links representing a Multilink Point To Point Protocol (MLPPP) Bundle, as describe in RFC 1990.

This component contains provisionable and operational atributes that represent the MLPPP Bundle.

Mib: PppIwfMlFramer

Opt. Subcomp.: COMPONENT Piwf MlFramer MlpppLink (Lk)

Common Verbs:
Help
List
Display
Add
DELete

GROUP Piwf MlFramer Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the provisioning data for the *MlpppFramer* component.

Mib: PppIwfMlFramer

ATTRIBUTE Piwf MlFramer fragmentSize (fragSize)

Access: Read and write

Description:

This attribute specifies the maximum fragment size in octets for the payload. The fragment size does not include the 8 octets of MLPPP Header, or the 4 octets for FCS.

When the value of this attribute is set to ***no***, NCP and Data frames transmitted to the interface will not be fragmented.

When the value of this attribute is not equal to ***no***, all NCP and Data frames transmitted to the interface will be divided in data fragments which are sent over different links in a bundle. During LCP configuration if the *remoteMru* is less than the provisioned *fragmentSize*, LCP will send a Configure-Nak for the MRU with a value of 1500 bytes.

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	The fragment size is configured for the local bundle. The fragment size of the remote bundle does not need be the same.
Mib	PppIwfMlFramer
Values	Decimal (48; 96; 144; 192; 240; 288; 336; 384; 432; 480) no
Units	octets
Default	no

ATTRIBUTE Piwf MlFramer ep0Treatment

Access	Read and write
Criticality	Process
Description	This attribute specifies the handling of egress frames sent at Emission Priority (EP) 0. If a value of ***normal*** is specified then frames sent on EP0 will be fragmentented according to the fragmentSize attribute. If a value of ***doNotFragment*** is specified then frames sent on EPO will not be fragmented but the MLPPP Header will still be prepended to the frame. If the value of ***noMlpppHeader*** is specified then the frames sent to EP0 will not be fragmented and the MLPPP Header will not be prepended to the frame. When this value is used misordering can occur.
Mib	PppIwfMlFramer
Values	normal doNotFragment noMlpppHeader
Default	normal

ATTRIBUTE Piwf MlFramer configMrru (cmrru)

Access	Read and write
Criticality	Process
Description	This attribute specifies the Maximum Receive Reconstructed Unit (MRRU) that the local MLPPP bundle will advertise to the remote entity. This value includes 8 bytes for the MLPPP header, and an additional 2 bytes for the protocol field of the payload.
Mib	PppIwfMlFramer
Values	Decimal (68..9204)

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Units	octets
Default	1524

ATTRIBUTE Piwf MlFramer endpointDiscriminator (epd)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the endpoint discriminator is used during the configuration phase of a link. If the value of ***noEndpointDisc*** is specified the endpoint discriminator is not included during Link Control Protocol(LCP) negotiation. If the value ***local*** is specified the endpoint discriminator option is included during LCP negotiation. The value consists of the system's node name appended with the *Ppp/Piwf* interface component name and instance number.
Mib	PppIwfMlFramer
Values	noEndpointDisc local
Default	local

GROUP Piwf MlFramer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — PppIwfMlFramer

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Piwf MlFramer operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — PppIwfMlFramer

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Piwf MlFramer usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — PppIwfMlFramer

Values — idle
active (activ)
busy

Default — idle

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GROUP Piwf MlFramer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer, MlpppFramer or MlpppLink* component.
Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned.

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	For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the interface for which overruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the interface for which underruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received that were too large. The frame exeeceded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer octetToIf

Access	Read only

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Description	This attribute indicates the number of octets transmitted by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Piwf MlFramer octetFromIf

Access	Read only
Description	This attribute indicates the number of octets received by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets received by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets received by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Piwf MlFramer frmFromIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames received by the *Framer.* This attribute indicates the number of NCP and Data frames received by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments received by the *MlpppLink.*
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Piwf MlFramer frmToIf

Access	Read only

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Description	This attribute indicates the number of LCP, NCP and Data frames transmitted by the *Framer.* This attribute indicates the number of NCP and Data frames transmitted by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments transmitted by the *MlpppLink.*
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

GROUP Piwf MlFramer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer normPrioLinkUtilToIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data sent to the interface as a percentage of the available bandwidth of the link (*Framer*) or the MLPPP Bundle (*MlpppFramer*). The utilization is the average for the last minute.
Mib	PppIwfMlFramer
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Piwf MlFramer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data received from the interface as a percentage of the available bandwidth on the link(*Framer*) or the MLPPP Bundle (*MlpppFramer*). The utilization is the average for the last minute.
Mib	PppIwfMlFramer

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Values	Decimal (0..100)
Units	%
Default	0

GROUP Piwf MlFramer DiscardStatistics (Disc)

Properties	Operational
Description	This group contains the operational discards statistics for the *Framer/MlpppFramer* component.
Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer discCongFrmToIfEp0 (disc0)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 0 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppIwfMlFramer
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Piwf MlFramer discCongFrmToIfEp1 (disc1)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 1 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppIwfMlFramer
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence

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Default	No default

ATTRIBUTE Piwf MlFramer discCongFrmToIfEp2 (disc2)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 2 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppIwfMlFramer
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Piwf MlFramer discCongFrmToIfEp3 (disc3)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 3 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppIwfMlFramer
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

GROUP Piwf MlFramer MlpppFramerOper (Oper)

Properties	Operational
Description	This group contains the operational data for the *MlpppFramer* component.
Mib	PppIwfMlFramer

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ATTRIBUTE Piwf MlFramer **localMrru (lmrru)**

Access	Read only
Description	This attribute indicates the negotiated value of the Maximum Receive Reconstructed Unit (MRRU) for the local MLPPP bundle. This value is the MRRU that the remote entity is using when sending packets to the local MLPPP Bundle. This value includes 8 bytes for the MLPPP header, and an additional 2 bytes for the protocol field of the payload.
Mib	PppIwfMlFramer
Values	Decimal (1..18000)
Units	octets
Default	No default

ATTRIBUTE Piwf MlFramer **remoteMrru (rmrru)**

Access	Read only
Description	This attribute indicates the current Maximum Receive Reconstructed Unit (MRRU) for the remote MLPPP bundle. This value is the MTU that the local entity is using when sending packets to the remote MLPPP Bundle. This value includes 8 bytes for the MLPPP header, and an additional 2 bytes for the protocol field of the payload.
Mib	PppIwfMlFramer
Values	Decimal (1..18000)
Units	octets
Default	No default

ATTRIBUTE Piwf MlFramer **localEndpointDiscriminator (lepd)**

Access	Read only
Description	This attribute indicates the end point disciminator of the local bundle.
Mib	PppIwfMlFramer
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Piwf MlFramer **remoteEndpointDiscriminator (repd)**

Access	Read only

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Description	This attribute indicates the end point disciminator of the remote bundle, as it was received from the first successfully negotiated link.
Mib	PppIwfMlFramer
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Piwf MlFramer expectedSequenceNumber (esn)

Access	Read only
Description	This attribute indicates the expected sequence number of the next MLPPP frsme received from the link. The attribute is set to the sequence number of the last fragment received plus one.
Mib	PppIwfMlFramer
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Piwf MlFramer sentSequenceNumber (ssn)

Access	Read only
Description	This attribute indicates the sequence number of the next MLPPP frame to be sent to the link.
Mib	PppIwfMlFramer
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Piwf MlFramer bundleSpeed

Access	Read only
Description	This attribute indicates the aggregate speed of all enabled *MlpppLinks* under the *MlpppFramer*.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

GROUP Piwf MlFramer MlpppFramerStatistics (MlStats)

Properties	Operational
Description	This group contains the statistical attributes of the *MlpppFramer* component.

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Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer discardedFrmFromIf

Access	Read only
Description	This attribute indicates the number of frames that have been received by a *MlpppLink* but are discarded by the MLPPP Bundle. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Piwf MlFramer sequencingErrors

Access	Read only
Description	This attribute indicates the number of sequencing errors detected on a MLPPP Bundle. A sequencing error occurs when one or more MLPPP frames are determined to be lost. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Piwf MlFramer mrruExceededErrors

Access	Read only
Description	This attribute indicates the number of times a reassembled packet exceeded the *localMrru* value of an MLPPP Bundle. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

COLLECTED STATS PppIwf MlpppFramer

Description	The statistics record generated by the PppIwf MlpppFramer component.

ATTRIBUTE Piwf MlFramer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

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Values Long Integer

ATTRIBUTE Piwf MlFramer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Piwf MlFramer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Piwf MlFramer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Piwf MlFramer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT Piwf MlFramer MlpppLink (Lk)

Instance Decimal (0..15)

Groups
GROUP Piwf MlFramer Lk Provisioned (Prov)
GROUP Piwf MlFramer Lk OsiState (State)
GROUP Piwf MlFramer Lk Statistics (Stats)
GROUP Piwf MlFramer Lk LinkOperational (Lnk)
GROUP Piwf MlFramer Lk LqmOperational (Lqm)

Scope Application

Description

Ppp/n MlFramer MlpppLink/m
PppIwf/n MlFramer MlpppLink/m

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This component is used to define the links belonging to a *MlpppFramer* component.

Mib PppIwfMlFramer

Opt. Subcomp. COMPONENT Piwf MlFramer Lk Override (Ov)

Common Verbs
Help
List
Display
Add
DELete

GROUP Piwf MlFramer Lk Provisioned (Prov)

Properties Provisioned

Description
This group contains the provisioning data for the *MlpppLink* component.

Mib PppIwfMlFramer

ATTRIBUTE Piwf MlFramer Lk interfaceName

Access Read and write

Criticality Component

Description
This attribute specifies a hardware component name.

The attribute associates the application with a specific link. This defines the logical processor on which *MlpppLink* component (as well as *MlpppFramer* itself) will run.

Mib PppIwfMlFramer

Values Link (Hardware, applicationFramerName)

Default No default

GROUP Piwf MlFramer Lk OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib PppIwfMlFramer

ATTRIBUTE Piwf MlFramer Lk adminState (osiAdmin)

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	PppIwfMlFramer
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Piwf MlFramer Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	PppIwfMlFramer
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Piwf MlFramer Lk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	PppIwfMlFramer
Values	idle active (activ) busy
Default	idle

GROUP Piwf MlFramer Lk Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer, MlpppFramer or MlpppLink* component.
Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer Lk aborts

Access	Read only
Description	This attribute counts the total number of aborts received. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk lrcErrors

Access	Read only

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Description	This attribute counts the total number of frames with LRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk overruns

Access	Read only
Description	This attribute counts the total number of frames received from the interface for which overruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the interface for which underruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk largeFrmErrors

Access	Read only

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Description	This attribute counts the total number of frames received that were too large. The frame exeeceded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk octetToIf

Access	Read only
Description	This attribute indicates the number of octets transmitted by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Piwf MlFramer Lk octetFromIf

Access	Read only
Description	This attribute indicates the number of octets received by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets received by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets received by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Piwf MlFramer Lk frmFromIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames received by the *Framer.*

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This attribute indicates the number of NCP and Data frames received by the *MlpppFramer.*

This attribute indicates the number of LCP frames, and NCP and Data frames or frragments received by the *MlpppLink.*

Mib PppIwfMlFramer

Values Long Integer

Default No default

ATTRIBUTE Piwf MlFramer Lk frmToIf

Access Read only

Description This attribute indicates the number of LCP, NCP and Data frames transmitted by the *Framer.*

This attribute indicates the number of NCP and Data frames transmitted by the *MlpppFramer.*

This attribute indicates the number of LCP frames, and NCP and Data frames or frragments transmitted by the *MlpppLink.*

Mib PppIwfMlFramer

Values Long Integer

Default No default

GROUP Piwf MlFramer Lk LinkOperational (Lnk)

Properties Operational

Description This group contains the Link Control Protocol operational attributes for the *MlpppLink/n*.

Mib PppIwfMlFramer

ATTRIBUTE Piwf MlFramer Lk lcpState (state)

Access Read only

Description This attribute indicates the operational state of the Link Control Protocol.

The ***initial*** state, the link is unavailable (disabled), and no Open has occurred.

The ***starting*** state LCP is has been initialized, but the link is unavailable (disabled).

In the ***closed*** state, the link is available (enabled), but no Open has occurred.

In the ***stopped*** state LCP is waiting for a Down event after the This-Layer-

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Finished action, or after sending a Terminate-Ack.

In the ***closing*** state, an attempt is made to terminate the connection. A Terminate-Request has been sent a but a Terminate-Ack has not been received.

In the ***stopping*** state a Terminate-Request has been sent and the Restart timer is running, but a Terminate-Ack has not yet been received.

In the request sent (***reqsent***) state an attempt is made to configure the connection. A Configure-Request has been sent and the Restart timer is running, but a Configure-Ack has not yet been received nor has one been sent.

In the ack received (***ackrcvd***) state, a Configure-Request has been sent and a Configure-Ack has been received.

In the ack sent (***acksent***) state, a Configure-Request and a Configure-Ack have both been sent, but a Configure-Ack has not yet been received. The Restart timer is running, since a Configure-Ack has not yet been received.

In the ***opened*** state, a Configure-Ack has been both sent and received.

For more information as to the definition of each state see RFC1331 section 5.3.

Mib — PppIwfMlFramer

Values
initial
starting
closed
stopped
closing
stopping
reqsent
ackrcvd
acksent
opened

Default — initial

ATTRIBUTE Piwf MlFramer Lk lineCondition (lcond)

Access — Read only

Description — This attribute indicates the condition of the physical line that the Link Control Protocol is running over.

ok: The condition of the line is good.
looped: The line is looped back on itself, probably at the remote end.
misconfigured: The value of the remote MRRU or Endpoint Discriminator in the LCP configuration request does not match the operational value of the *MlpppFramer remoteMrru* or *remoteEndpointDiscriminator* attibutes.

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noClock: There is a hardware problem with the line. The cable may not be plugged in correctly.
badLineCondition: The quality of the line is below the *Ppp/n Lnk qualityThreshold*.

Mib	PppIwfMlFramer
Values	ok looped misconfigured noClock badLineCondition
Default	ok

ATTRIBUTE Piwf MlFramer Lk badAddress (ba)

Access	Read only
Description	This attribute indicates the number of packets received with an incorrect Address Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than PPP. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk badControl (bc)

Access	Read only
Description	This attribute indicates the number of packets received on this link with an incorrect Control Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than PPP. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk packetTooLong (ptl)

Access	Read only
Description	This attribute indicates the number of packets received that have been discarded because their length exceeded the Maximum Receive Unit

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	(MRU). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk badFcs (bfcs)

Access	Read only
Description	This attribute indicates the number of packets received that have been discarded due to having an incorrect Frame Check Sequence (FCS). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk localMru (lmru)

Access	Read only
Description	This attribute indicates the current value of the Maximum Receive Unit (MRU) for the local *MlpppLink* Entity. This value is the MRU that the remote entity is using when sending packets to the local *MlpppLink* entity.
Mib	PppIwfMlFramer
Values	Decimal (1..18000)
Units	octets
Default	1

ATTRIBUTE Piwf MlFramer Lk remoteMru (rmru)

Access	Read only
Description	This attribute indicates the current value of the Maximum Receive Unit (MRU) for the remote *MlpppLink* entity. This value is the MRU that the local entity is using when sending packets to the remote *MlpppLink* entity.
Mib	PppIwfMlFramer
Values	Decimal (1..18000)
Units	octets
Default	No default

ATTRIBUTE Piwf MlFramer Lk transmitFcsSize (tfcs)

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Access	Read only
Description	This attribute indicates the size of the Frame Check Sequence (Fcs) in bits that the local node will generate when sending packets to the remote node.
Mib	PppIwfMlFramer
Values	Decimal (0..128)
Units	bits
Default	0

ATTRIBUTE Piwf MlFramer Lk receiveFcsSize (rfcs)

Access	Read only
Description	This attribute indicates the size of the Frame Check Sequence (FCS) in bits that the remote node will generate when sending packets to the local node.
Mib	PppIwfMlFramer
Values	Decimal (0..128)
Units	bits
Default	0

GROUP Piwf MlFramer Lk LqmOperational (Lqm)

Properties	Operational
Description	This group contains the Link Quality Monitor operational attributes for the *MlpppLink*.
Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer Lk quality (qual)

Access	Read only
Description	This attribute indicates the current quality of the link. A value of ***good*** indicates that *Ppp/n LinkQualityMonitor configStatus* is ***enabled*** and link quality is above *Ppp/n Lnk linkQuality Threshold*. A value of ***bad*** indicates that *Ppp/n LinkQualityMonitor configStatus* is ***enabled*** and and link quality is not above *Ppp/n Lnk linkQuality Threshold*. A value of ***notDetermined*** indicates that either the *Ppp/n LinkQualityMonitor configStatus* is ***enabled*** and the quality of the link has not been calculated yet, or the *Ppp/n LinkQualityMonitor configStatus* is ***disabled***.
Mib	PppIwfMlFramer

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Values	good bad notDetermined
Default	notDetermined

ATTRIBUTE Piwf MlFramer Lk inGoodOctets (ingo)

Access	Read only
Description	This attribute indicates the number of good octets received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Piwf MlFramer Lk localPeriod (localp)

Access	Read only
Description	This attribute indicates the *Ppp/n Lqm* reporting period, in hundredths of a second that is in effect for the local link.
Mib	PppIwfMlFramer
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Piwf MlFramer Lk remotePeriod (remotep)

Access	Read only
Description	This attribute indicates the *Ppp/n Lqm* reporting period, in hundredths of a second, that is in effect for the remote link.
Mib	PppIwfMlFramer
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Piwf MlFramer Lk outLqrs (outr)

Access	Read only
Description	This attribute indicates the number of link quality reports sent out. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf MlFramer Lk inLqrs (inr)

Access	Read only
Description	This attribute indicates the number of link quality reports received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967295)
Default	0

COMPONENT Piwf MlFramer Lk Override (Ov)

Groups	GROUP Piwf MlFramer Lk Ov LinkControlProtocol (Lcp) GROUP Piwf MlFramer Lk Ov LinkQualityMonitor (Lqm)
Scope	Application
Description	*Ppp/n MlFramer Lk/n Override* *Piwf/n MlFramer Lk/n Override* This component contains all the attributes related to the *MlpppLink Override* component. When added the provisioned values for the Link Control Protocol (*Ppp/Piwf Lnk)*, and the Link Quality Monitor (*Ppp/Piwf Lqm*) will be overriden for this particular *MlpppLink* instance. This is an optional subcomponent of *MlpppLink*.
Mib	PppIwfMlFramer
Common Verbs	Help List Display Add DELete

GROUP Piwf MlFramer Lk Ov LinkControlProtocol (Lcp)

Properties	Provisioned
Description	This group contains the override attributes for the Link Control Protocol. These attributes will override the value provisioned under the *Ppp Link* or *Piwf Link* component.

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Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer Lk Ov **configInitialMru (cimru)**

Access	Read and write
Description	This is the initial Maximum Receive Unit (Mru) that the local *MlpppLink* entity will advertise to the remote entity. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used. A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).
Mib	PppIwfMlFramer
Values	Decimal (68..18000) sameAsLnk
Units	octets
Default	sameAsLnk

ATTRIBUTE Piwf MlFramer Lk Ov **configMagicNumber (cmn)**

Access	Read and write
Description	If ***enabled*** the local node will attempt to perform Magic Number negotiation with the remote node. If ***disabled*** this negotiation is not performed. In any event, the local node will comply with any magic number negotiations attempted by the remote node, per the Ppp specification. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used. A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).
Mib	PppIwfMlFramer
Values	disabled enabled sameAsLnk
Default	sameAsLnk

ATTRIBUTE Piwf MlFramer Lk Ov **restartTimer (rtimer)**

Access	Read and write

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Description	This is the time, in milliseconds, that *MlpppLink* will wait for a response to a configure request or a terminate request before retrying.
Mib	PppIwfMlFramer
Values	Decimal (1000..10000) sameAsLnk
Units	msec
Default	sameAsLnk

ATTRIBUTE Piwf MlFramer Lk Ov **continuityMonitor (cntmon)**

Access	Read and write
Description	This attribute turns on/off (***enabled/disabled***) the Link Continuity Monitor. If set to ***enabled***, periodic keep alive echo packet will be sent over the *MlpppLink*. If set to ***disabled***, no keep alive packets will be sent. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used. A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).
Mib	PppIwfMlFramer
Values	enabled disabled sameAsLnk
Default	sameAsLnk

ATTRIBUTE Piwf MlFramer Lk Ov **negativeAckTries (naks)**

Access	Read and write
Description	This attribute specifies the maximum negative acknowledgments sent to the remote *MlpppLink* entity during negotiation before defaulting its configuration parameters. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967294) sameAsLnk
Default	sameAsLnk

ATTRIBUTE Piwf MlFramer Lk Ov **qualityThreshold (quality)**

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Access	Read and write
Description	This attribute specifies the minimum allowed line quality before the line is considered too poor to continue operation. The value for this attribute is a percentage measure of the line quality given in integers (10 to 99). The higher the value, the more stringent the line requirements. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.
Mib	PppIwfMlFramer
Values	Decimal (10..99) sameAsLnk
Units	%
Default	sameAsLnk

ATTRIBUTE Piwf MlFramer Lk Ov **qualityWindow (qwindow)**

Access	Read and write
Description	This attribute specifies the number of seconds used for sampling line quality. If line quality drops below the level set with the *Ppp Lnk qualityThreshold* attribute during this window, this instance of *MlpppLink* will be marked down until line quality recovers. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.
Mib	PppIwfMlFramer
Values	Decimal (10..400) sameAsLnk
Units	seconds
Default	sameAsLnk

ATTRIBUTE Piwf MlFramer Lk Ov **terminateRequestTries (term)**

Access	Read and write
Description	This attribute specifies the maximum terminate requests to be sent, when closing the connection, and not answered before this instance of *MlpppLink* enters a closing state. When set to ***sameAsLnk***, this attribute is not override and the value provisioned under *Ppp/Piwf Lnk* component will be used.

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Mib	PppIwfMlFramer
Values	Decimal (0..4294967294) sameAsLnk
Default	sameAsLnk

ATTRIBUTE Piwf MlFramer Lk Ov **configureRequestTries (try)**

Access	Read and write
Description	This attribute specifies the number of configuration requests that will be sent out and not answered before this instance of *MlpppLink* enters a listening state. If both sides enter the listening state then the link will not come up. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.
Mib	PppIwfMlFramer
Values	Decimal (0..4294967294) sameAsLnk
Default	sameAsLnk

GROUP Piwf MlFramer Lk Ov **LinkQualityMonitor (Lqm)**

Properties	Provisioned
Description	This group contains the override attributes for the Link Quality Monitor. These attributes will override the value provisioned under the *Ppp Lqm* or *Piwf Lqm* component.
Mib	PppIwfMlFramer

ATTRIBUTE Piwf MlFramer Lk Ov **configPeriod (cfgper)**

Access	Read and write
Description	This attribute specifies the Link Quality Monitor's reporting period that the local *MlpppLink* entity will attempt to negotiate with the remote entity, in units of hundredths of a second. A value of "0" allows the remote *Mlppp* entity to determine the reporting period. A value greater than 180,000 (1/2 hour) allows the period to be determined dynamically as a function of the transmit data rate. A value from 1-9 is rounded up to 10 during negotiation. When set to ***sameAsLqm*** the value provisioned under *Ppp/Piwf Lnk* component will be used.

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	A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).
Mib	PppIwfMlFramer
Values	Decimal (0..2147483647) sameAsLqm
Units	centiseconds
Default	sameAsLqm

ATTRIBUTE Piwf MlFramer Lk Ov configStatus (cfgstat)

Access	Read and write
Description	If this attribute is ***enabled***, the local node will attempt to perform *Lqm* negotiation with the remote node. If it is ***disabled*** this negotiation is not performed. When set to ***sameAsLqm*** the value provisioned under *Ppp/Piwf Lnk* component will be used. A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).
Mib	PppIwfMlFramer
Values	disabled enabled sameAsLqm
Default	sameAsLqm

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Piwf

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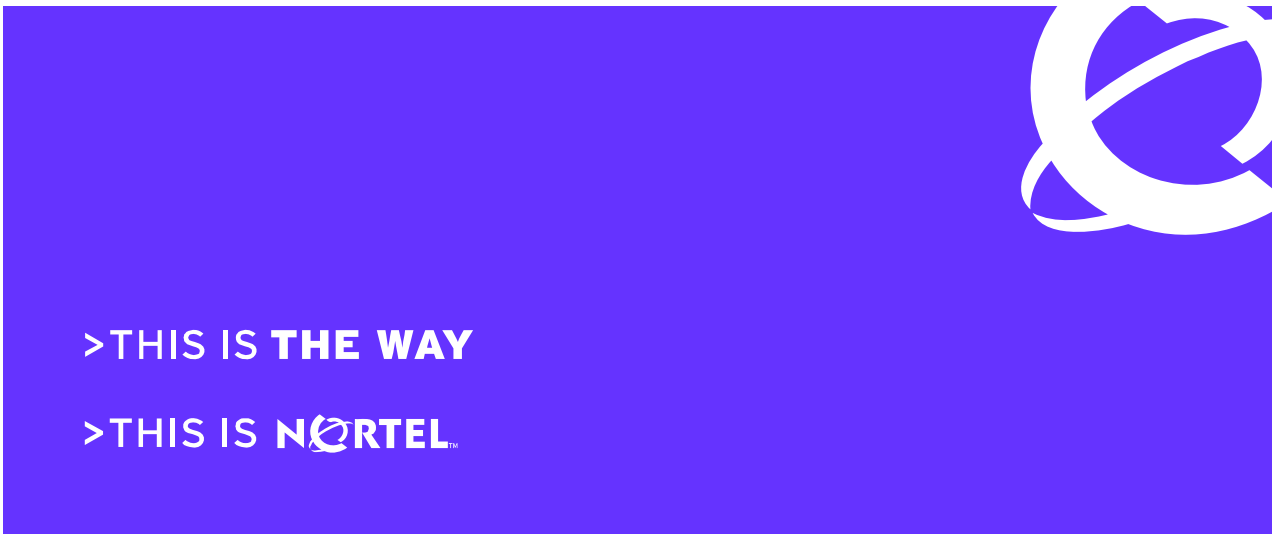

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Ppp

NN10600-060

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COMPONENT PointToPointProtocol (Ppp)

Instance	Decimal (1..65535)
Groups	GROUP Ppp CustomerIdentifierData (CidData) GROUP Ppp IfEntryProv (IfEntry) GROUP Ppp MediaProv (Mp) GROUP Ppp OsiState (State) GROUP Ppp OperationalStatus (OperStatus) GROUP Ppp PppProv (Ppp)
Scope	Application
Description	*PointToPointProtocol/n* This component defines an instance of the *Ppp* link level protocol. The component instance value is a unique number.
Mib	Ppp
Subcomponents	COMPONENT Ppp Link (Lnk) COMPONENT Ppp LinkQualityMonitor (Lqm) COMPONENT Ppp NetworkControlProtocol (Ncp)
Opt. Subcomp.	COMPONENT Ppp ConnectionAdministrator (Ca) COMPONENT Ppp Framer COMPONENT Ppp LinkEmissionQueue (Leq) COMPONENT Ppp MlpppFramer (MlFramer) COMPONENT Ppp EgressWeightedFairQueuing (Ewfq)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Ppp CustomerIdentifierData (CidData)

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Ppp

ATTRIBUTE Ppp customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Ppp
Values	Decimal (0; 1..8191)
Default	0

GROUP Ppp IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Ppp

ATTRIBUTE Ppp ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ppp
Values	up down testing
Default	up

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ATTRIBUTE Ppp ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Ppp
Values	Decimal (1..65535)
Default	No default

GROUP Ppp MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the Media Application component.
Mib	Ppp

ATTRIBUTE Ppp linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	Ppp
Values	Link (Service, linkToMedia)
Default	No default

GROUP Ppp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ppp

ATTRIBUTE Ppp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Ppp

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Ppp operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Ppp

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Ppp usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ppp
Values	idle active (activ) busy
Default	idle

GROUP Ppp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ppp

ATTRIBUTE Ppp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ppp
Values	up down testing
Default	up

GROUP Ppp PppProv (Ppp)

Properties	Provisioned
Description	This group contains the provisioning data for the *Ppp* link level protocol component.
Mib	Ppp

ATTRIBUTE Ppp linkToApplication

Access	Read and write
Criticality	Component
Description	This attribute contains a *PppApplication* component name. The attribute associates the *Ppp* link level protocol component with a *PppApplication* component.
Mib	Ppp

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Values	Link (Service, linkToMedia)
Default	No default

COMPONENT Ppp ConnectionAdministrator (Ca)

Groups	GROUP Ppp Ca Provisioned (Prov) GROUP Ppp Ca Operational (Oper)
Scope	Application
Description	*Ppp/n ConnectionAdministrator* This component manages the link bandwidth, and reports the information about the link usage. This component can only be provisioned if the *MplsPort* component is provisioned.
Mib	Ppp
Common Verbs	Help List Display Add DELete

GROUP Ppp Ca Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ca* component.
Mib	Ppp

ATTRIBUTE Ppp Ca percentBandwidthManaged (pBwManaged)

Access	Read and write
Description	This attribute specifies the percentage of link capacity used for transmitting the network clients' MPLS traffic and managed by the bandwidth manager. If this percent is selected to be less than 100% then an explicit amount of bandwidth is reserved for other traffic that is not managed by the bandwidth manager such as IP native traffic or IP control traffic. It should be noted that this attribute is used for bandwidth reservation for Connection Admission Control purpose and does not control the actual transmission of traffic which is controlled by the scheduler configuration. The total bandwidth for transmitting the network clients' MPLS traffic (*managedBandwidthTotal*) can be obtained as the multiplication of this attribute and the link transmitting capacity.
Mib	Ppp

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Values	Decimal (0..100)
Units	%
Default	100

GROUP Ppp Ca Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the *Ca* component.
Mib	Ppp

ATTRIBUTE Ppp Ca managedBandwidthTotal (bwTotal)

Access	Read only
Description	This attribute indicates the total bandwidth for transmitting the network clients' traffic. Its value is equal to the multiplication of link capacity and the provisioned value of *percentBandwidthManaged*.
Mib	Ppp
Values	Decimal (0..4294967295)
Units	kbit/s
Default	No default

ATTRIBUTE Ppp Ca maxBandwidthPool (maxBwPool)

Access	Read only
Description	This attribute indicates the maximum amount of bandwidth allowed for each pool. The value of each pool is equal to the multiplication of *managedBandwidthTotal* and the provisioned value of *percentMaxBandwidthPool*.
Mib	Ppp
Vector of	Decimal (0..4294967295)
Units	kbit/s
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Ppp Ca guaranteedBandwidthPool (gBwPool)

Access	Read only
Description	This attribute indicates the amount of bandwidth guaranteed for each pool. This value is equal to the multiplication of *managedBandwidthTotal* and the provisioned value of *percentGuaranteeBandwidthPool*.

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Mib	Ppp
Vector of	Decimal (0..4294967295)
Units	kbit/s
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Ppp Ca poolAdmittedBandwidth (poolAdmBw)

Access	Read only
Description	This attribute indicates the bandwidth reserved by the admitted T-LSPs in each bandwidth pool by each holding priority.
Mib	Ppp
Array of	Decimal (0..4294967295)
Units	kbit/s
Row	pool [Decimal (0..3)]
Column	holdingPriority [Decimal (0..7)]
Default	No default

ATTRIBUTE Ppp Ca poolAvailableBandwidth (poolAvlBw)

Access	Read only
Description	This attribute indicates the available bandwidth in each bandwidth pool by each setup priority.
Mib	Ppp
Array of	Decimal (0..4294967295)
Units	kbit/s
Row	pool [Decimal (0..3)]
Column	setupPriority [Decimal (0..7)]
Default	No default

ATTRIBUTE Ppp Ca igAvailBwDataPath (igBwDp)

Access	Read only
Description	For cards with multiple ingress datapaths, this attribute indicates the available bandwidth on each ingress card datapath. On the ***1pOC48SmSrPos*** and ***1pOC48SmIrPos*** FPs there are two ingress card datapath each limited to 1,198,080 kbit/s (OC-24). Connections with an even receive service label (*receiveLabel*) are

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	assigned to card datapath 0, connections with an odd receive service label are assigned to card datapath 1. This attribute is not displayed for other cards.
Mib	Ppp
Vector of	Decimal (0..100)
Units	%
Index	Decimal (0..1)
Default	No default

ATTRIBUTE Ppp Ca egAvailBwDataPath (egBwDp)

Access	Read only
Description	For cards with multiple egress datapaths, this attribute indicates the available bandwidth on each egress card datapath. On the ***1pOC48SmSrPos*** and ***1pOC48SmIrPos*** FPs, there are two egress card datapaths each limited to 1,198,080 kbit/s (OC-24). Connections with an even transmit service label (*transmitLabel*) are assigned to card datapath 0, connections with an odd transmit service label are assigned to card datapath 1. This attribute is not displayed for other cards.
Mib	Ppp
Vector of	Decimal (0..100)
Units	%
Index	Decimal (0..1)
Default	No default

COMPONENT Ppp Link (Lnk)

Groups	GROUP Ppp Lnk Provisioned (Prov) GROUP Ppp Lnk Operational (Oper)
Scope	Application
Description	*Ppp/n Link* This component is used to contain all the attributes related to the *Ppp* link.

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This is a mandatory subcomponent of *Ppp* and does not need to be added.

Mib	Ppp
Common Verbs	Help List Display

GROUP Ppp Lnk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Ppp* Link component.
Mib	Ppp

ATTRIBUTE Ppp Lnk configInitialMru (cimru)

Access	Read and write
Description	This is the initial Maximum Receive Unit (Mru) that the local *Ppp* entity will advertise to the remote entity. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	Decimal (68..18000)
Units	octets
Default	18000

ATTRIBUTE Ppp Lnk configMagicNumber (cmn)

Access	Read and write
Description	If ***enabled*** the local node will attempt to perform Magic Number negotiation with the remote node. If ***disabled*** this negotiation is not performed. In any event, the local node will comply with any magic number negotiations attempted by the remote node, per the *Ppp* specification. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	disabled enabled
Default	enabled

ATTRIBUTE Ppp Lnk restartTimer (rtimer)

Access	Read and write
Description	This is the time, in milliseconds, that *Ppp* will wait for a response to a configure request or a terminate request before retrying.

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Mib	Ppp
Values	Decimal (1000..10000)
Units	msec
Default	3000

ATTRIBUTE Ppp Lnk continuityMonitor (cntmon)

Access	Read and write
Description	This attribute turns on/off (***enabled/disabled***) the Link Continuity Monitor. If set to ***enabled***, periodic keep alive echo packet will be sent over the *Ppp* link. If set to ***disabled***, no keep alive packets will be sent. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	enabled disabled
Default	disabled

ATTRIBUTE Ppp Lnk negativeAckTries (naks)

Access	Read and write
Description	This attribute specifies the maximum negative acknowledgments sent to the remote *Ppp* entity during negotiation before defaulting its configuration parameters.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	10

ATTRIBUTE Ppp Lnk qualityThreshold (quality)

Access	Read and write
Description	This attribute specifies the minimum allowed line quality before the line is considered too poor to continue operation. The value for this attribute is a percentage measure of the line quality given in integers (10 to 99). The higher the value, the more stringent the line requirements.
Mib	Ppp
Values	Decimal (10..99)
Units	%
Default	90

ATTRIBUTE Ppp Lnk qualityWindow (qwindow)

Access	Read and write

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Description	This attribute specifies the number of seconds used for sampling line quality. If line quality drops below the level set with the *qualityThreshold* attribute during this window, this instance of *Ppp* will be marked down until line quality recovers.
Mib	Ppp
Values	Decimal (10..400)
Units	seconds
Default	30

ATTRIBUTE Ppp Lnk terminateRequestTries (term)

Access	Read and write
Description	This attribute specifies the maximum terminate requests to be sent, when closing the connection, and not answered before this instance of *Ppp* enters a closing state.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	10

ATTRIBUTE Ppp Lnk configureRequestTries (try)

Access	Read and write
Description	This attribute specifies the number of configuration requests that will be sent out and not answered before this instance of *Ppp* enters a listening state. If both sides enter the listening state then the link will not come up. To eliminate this possibility, this attribute should be set to 1000000000. This will ensure that this end of the *Ppp* link will continue to try until the link is good.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	1000000000

GROUP Ppp Lnk Operational (Oper)

Properties	Operational
Description	This group contains the *Ppp* Link Operational attributes.
Mib	Ppp

ATTRIBUTE Ppp Lnk operState (state)

Access	Read only
Description	This is the operational state of the Link Control Protocol. For more information as to the definition of each state see RFC1331 section 5.3.

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Mib	Ppp
Values	initial starting closed stopped closing stopping reqsent ackrcvd acksent opened
Default	initial

ATTRIBUTE Ppp Lnk lineCondition (lcond)

Access	Read only
Description	This attribute describes the condition of the physical line that *Ppp* is running over. ***ok***: The condition of the line is good. ***looped***: The line is looped back on itself, probably at the remote end. ***noClock***: There is a hardware problem with the line. The cable may not be plugged in correctly. ***badLineCondition***: The quality of the line is below the *qualityThreshold*.
Mib	Ppp
Values	ok looped noClock badLineCondition
Default	ok

ATTRIBUTE Ppp Lnk badAddresses (ba)

Access	Read only
Description	This attribute counts the number of packets received with an incorrect Address Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lnk badControls (bc)

Access	Read only

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Description	This attribute counts the number of packets received on this link with an incorrect Control Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lnk packetTooLongs (ptl)

Access	Read only
Description	This attribute counts the number of packets received that have been discarded because their length exceeded the Maximum Receive Unit (Mru). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lnk badFcss (bfcs)

Access	Read only
Description	This attribute counts the number of packets received that have been discarded due to having an incorrect Frame Check Sequence (Fcs). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lnk localMru (lmru)

Access	Read only
Description	This is the current value of the Maximum Receive Unit (Mru) for the local *Ppp* Entity. This value is the Mru that the remote entity is using when sending packets to the local *Ppp* entity.
Mib	Ppp
Values	Decimal (1..2147483648)
Units	octets
Default	1

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ATTRIBUTE Ppp Lnk remoteMru (rmru)

Access	Read only
Description	This is the current value of the Maximum Receive Unit (Mru) for the remote *Ppp* entity. This value is the Mru that the local entity is using when sending packets to the remote *Ppp* entity.
Mib	Ppp
Values	Decimal (1..2147483648)
Units	octets
Default	No default

ATTRIBUTE Ppp Lnk transmitFcsSize (tfcs)

Access	Read only
Description	This is the size of the Frame Check Sequence (Fcs) in bits that the local node will generate when sending packets to the remote node.
Mib	Ppp
Values	Decimal (0..128)
Units	bits
Default	0

ATTRIBUTE Ppp Lnk receiveFcsSize (rfcs)

Access	Read only
Description	This is the size of the Frame Check Sequence (Fcs) in bits that the remote node will generate when sending packets to the local node.
Mib	Ppp
Values	Decimal (0..128)
Units	bits
Default	0

COMPONENT Ppp LinkQualityMonitor (Lqm)

Groups	GROUP Ppp Lqm Provisioned (Prov) GROUP Ppp Lqm Operational (Oper)
Scope	Application
Description	*Ppp/n LinkQualityMonitor* This component is used to contain all the operational attributes for the *Ppp*

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	Link Quality Monitor. This is a mandatory subcomponent of *Ppp* and does not need to be manually added.
Mib	Ppp
Common Verbs	Help List Display

GROUP Ppp Lqm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Ppp* Link Quality Monitor component.
Mib	Ppp

ATTRIBUTE Ppp Lqm configPeriod (cfgper)

Access	Read and write
Description	This is the *Lqm* reporting period that the local *Ppp* entity will attempt to negotiate with the remote entity, in units of hundredths of a second. A value of “0” allows the remote *Ppp* entity to determine the reporting period. A value greater than 180,000 (1/2 hour) allows the period to be determined dynamically as a function of the transmit data rate. A value from 1-9 is rounded up to 10 during negotiation. A change to this attribute does not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	Decimal (0..2147483647)
Units	centiseconds
Default	0

ATTRIBUTE Ppp Lqm configStatus (cfgstat)

Access	Read and write
Criticality	Process
Description	If this attribute is ***enabled***, the local node will attempt to perform *Lqm* negotiation with the remote node. If it is ***disabled*** this negotiation is not performed. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	disabled enabled
Default	disabled

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GROUP Ppp Lqm Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Ppp* Link Quality Monitor component.
Mib	Ppp

ATTRIBUTE Ppp Lqm quality (qual)

Access	Read only
Description	This is the current quality of the link as declared by the local *Ppp* entity's LinkQuality Management modules. A value of ***good*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and *Link quality* is above *LinkQuality Threshold*. A value of ***bad*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and *Link quality* is not above *Link qualityThreshold*. A value of ***notDetermined*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and the quality of the link has not been calculated yet or *LinkQualityMonitor configStatus* is ***disabled***.
Mib	Ppp
Values	good bad notDetermined
Default	notDetermined

ATTRIBUTE Ppp Lqm inGoodOctets (ingo)

Access	Read only
Description	This attribute counts the number of good octets received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lqm localPeriod (localp)

Access	Read only
Description	This is the *Lqm* reporting period, in hundredths of a second that is in effect for the local *Ppp* entity.
Mib	Ppp
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

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ATTRIBUTE Ppp Lqm remotePeriod (remotep)

Access	Read only
Description	This is the *Lqm* reporting period, in hundredths of a second, that is in effect for the remote *Ppp* entity.
Mib	Ppp
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Ppp Lqm outLqrs (outr)

Access	Read only
Description	This attribute counts the number of link quality reports sent out. This counter wraps around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lqm inLqrs (inr)

Access	Read only
Description	This attribute counts the number of link quality reports received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

COMPONENT Ppp NetworkControlProtocol (Ncp)

Groups	GROUP Ppp Ncp IpOperational (IpOper) GROUP Ppp Ncp MplsOperational (MplsOper)
Scope	Application
Description	*Ppp/n NetworkControlProtocol* This component is used to contain all the operational attributes for the *Ppp* Network Control Protocols (*Ncp*). This is a mandatory subcomponent of *Ppp* and does not need to be manually added.
Mib	Ppp
Common Verbs	Help List Display

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GROUP Ppp Ncp IpOperational (IpOper)

Properties	Operational
Description	This group contains the Ip Network Control Protocol operational attributes.
Mib	Ppp

ATTRIBUTE Ppp Ncp ipOperState (ipostate)

Access	Read only
Description	This is the operational state of the Ip network protocol. For more information as to the definition of each state see RFC1331 section 5.3.
Mib	Ppp
Values	initial starting closed stopped closing stopping reqsent ackrcvd acksent opened
Default	initial

GROUP Ppp Ncp MplsOperational (MplsOper)

Properties	Operational
Description	This group contains the MPLS Network Control Protocol operational attribute.
Mib	Ppp

ATTRIBUTE Ppp Ncp mplsOperState (mplsostate)

Access	Read only
Description	This attribute indicates the operational states of the MPLS Network Control Protocol. In the initial state the lower layer (LCP in this case) is in a Down state The lower layer is also Down in the starting state where in contrast an administrative Open has been received. When the lower Layer is Up a req-sent is sent to the peer awaiting an ackrcvd. An ack-sent is reached when an ack is sent in reply to the peer ack-req request. An open state is reached when both peers have sent ack-req and received ack-rcvd. Closing is before closed state when waiting for a terminate-ack after sending a terminate-req. The same for stopping and stopped states with the difference that the The Stopping state provides a well defined opportunity to terminate the link before allowing new traffic. (for more information as to the definition of each state see RFC 1331 section 5.3).

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Mib	Ppp
Values	initial starting closed stopped closing stopping reqsent ackrcvd acksent opened
Default	initial

COMPONENT Ppp Framer

Groups	GROUP Ppp Framer Provisioned (Prov) GROUP Ppp Framer OsiState (State) GROUP Ppp Framer Statistics (Stats) GROUP Ppp Framer LinkUtilization (Util) GROUP Ppp Framer DiscardStatistics (Disc)

COLLECTED STATS PointToPointProtocol Framer

Scope	Application
Description	*Ppp/n Framer* *PppIwf/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer* that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute that binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface

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datapath statistics (such as frame counts and aborts).

Mib	Ppp
Common Verbs	Help List Display Add DELete

GROUP Ppp Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	Ppp

ATTRIBUTE Ppp Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the logical processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	Ppp
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Ppp Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ppp

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ATTRIBUTE Ppp Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ppp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ppp Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ppp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ppp Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib Ppp

Values idle
active (activ)
busy

Default idle

GROUP Ppp Framer Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics data for a *Framer, MlpppFramer or MlpppLink* component.

Mib Ppp

ATTRIBUTE Ppp Framer aborts

Access Read only

Description This attribute counts the total number of aborts received.

For a *MlpppFramer*this will be the sum for all links in the bundle.

Mib Ppp

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Ppp Framer crcErrors

Access Read only

Description This attribute counts the total number of frames with CRC errors.

For a *MlpppFramer*this will be the sum for all links in the bundle.

Mib Ppp

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Ppp Framer lrcErrors

Access Read only

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Description	This attribute counts the total number of frames with LRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the interface for which overruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the interface for which underruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Framer largeFrmErrors

Access	Read only

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Description	This attribute counts the total number of frames received that were too large. The frame exeeceded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Framer octetToIf

Access	Read only
Description	This attribute indicates the number of octets transmitted by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	Ppp
Values	Long Integer
Default	No default

ATTRIBUTE Ppp Framer octetFromIf

Access	Read only
Description	This attribute indicates the number of octets received by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets received by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets received by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	Ppp
Values	Long Integer
Default	No default

ATTRIBUTE Ppp Framer frmFromIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames received by the *Framer.*

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	This attribute indicates the number of NCP and Data frames received by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments received by the *MlpppLink.*
Mib	Ppp
Values	Long Integer
Default	No default

ATTRIBUTE Ppp Framer frmToIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames transmitted by the *Framer.* This attribute indicates the number of NCP and Data frames transmitted by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments transmitted by the *MlpppLink.*
Mib	Ppp
Values	Long Integer
Default	No default

GROUP Ppp Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	Ppp

ATTRIBUTE Ppp Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data sent to the interface as a percentage of the available bandwidth of the link (*Framer*) or the MLPPP Bundle (*MlpppFramer*). The utilization is the average for the last minute.
Mib	Ppp
Values	Decimal (0..100)
Units	%

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Default	0

ATTRIBUTE Ppp Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data received from the interface as a percentage of the available bandwidth on the link(*Framer*) or the MLPPP Bundle (*MlpppFramer*). The utilization is the average for the last minute.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	0

GROUP Ppp Framer DiscardStatistics (Disc)

Properties	Operational
Description	This group contains the operational discards statistics for the *Framer/ MlpppFramer* component.
Mib	Ppp

ATTRIBUTE Ppp Framer discCongFrmTolfEp0 (disc0)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 0 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	Ppp
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Ppp Framer discCongFrmTolfEp1 (disc1)

Access	Read only

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Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 1 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	Ppp
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Ppp Framer discCongFrmTolfEp2 (disc2)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 2 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	Ppp
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Ppp Framer discCongFrmTolfEp3 (disc3)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 3 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.

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Mib	Ppp
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

COLLECTED STATS PointToPointProtocol Framer

Description	The statistics record generated by the PointToPointProtocol Framer component.

ATTRIBUTE Ppp Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Ppp Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Ppp Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Ppp Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Ppp Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Ppp LinkEmissionQueue (Leq)

Groups	GROUP Ppp Leq Provisioned (Prov) GROUP Ppp Leq Statistics (Stats) GROUP Ppp Leq TotalStatistics (TStats) GROUP Ppp Leq CurrentStatistics (CStats) GROUP Ppp Leq ThresholdStatistics (ThrStats)

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Scope	Application
Description	*Ppp/n LinkEmissionQueue* This component provides a means of statistics gathering and packet discard.
Mib	Ppp
Common Verbs	Help List Display Add DELete

GROUP Ppp Leq Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *LinkEmissionQueue* component.
Mib	Ppp

ATTRIBUTE Ppp Leq maxPackets (maxP)

Access	Read and write
Description	This attribute specifies the maximum number of packets allowed in the *Leq* before being discarded. If this attribute is set to zero then the maximum number of packets is calculated from the transmit data rate. This calculated value is placed in *queuePktThreshold*.
Mib	Ppp
Values	Decimal (0..2048)
Default	0

ATTRIBUTE Ppp Leq maxMsecData (maxData)

Access	Read and write
Description	This attribute specifies the maximum number of “Milliseconds worth of data” allowed in the *Leq* before packets are discarded. The *queueByteThreshold* will be calculated from this attribute, based on the transmit data rate.
Mib	Ppp
Values	Decimal (100..60000)
Default	10000

ATTRIBUTE Ppp Leq maxPercentMulticast (mpm)

Access	Read and write

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Description	This attribute specifies the maximum percentage of multicast packets allowed in the *Leq,* based on *queuePktThreshold*, before being discarded. The calculated value will be placed in *queueMulticastThreshold*.
Mib	Ppp
Values	Decimal (1..100)
Default	50

ATTRIBUTE Ppp Leq timeToLive (ttl)

Access	Read and write
Description	This attribute specifies the “Milliseconds Time To Live” of packets in the *Leq*. If the *timeToLive* of a packet expires, it will be discarded.
Mib	Ppp
Values	Decimal (100..60000)
Units	msec
Default	10000

GROUP Ppp Leq Statistics (Stats)

Properties	Operational
Description	This group contains Link Emission Queue general statistics.
Mib	Ppp

ATTRIBUTE Ppp Leq timedOutPkt (topkt)

Access	Read only
Description	This attribute counts the number of packets that have been discarded due to exceeding the *timeToLive*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq hardwareForcedPkt (hfpkt)

Access	Read only
Description	This attribute counts the number of hardware forced packets on this instance of *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Ppp Leq forcedPktDiscards (fpktd)

Access	Read only
Description	This attribute counts the total number of hardware forced packets that had to be discarded due to link failure. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq queuePurgeDiscards (qpd)

Access	Read only
Description	This attribute counts the total number of packets discarded by a queue purge (i.e. a discarding of all packets on the queue). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

GROUP Ppp Leq TotalStatistics (TStats)

Properties	Operational
Description	This group contains Link Emission Queue total statistics.
Mib	Ppp

ATTRIBUTE Ppp Leq totalPktHandled (tpkthand)

Access	Read only
Description	This attribute counts the total number of packets handled by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq totalPktForwarded (tpktfor)

Access	Read only
Description	This attribute counts the total number of packets forwarded by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq totalPktQueued (tpktq)

Access	Read only
Description	This attribute counts the total number of packets that required queuing by the *Leq* due to transmit congestion. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq totalMulticastPkt (tmulp)

Access	Read only
Description	This attribute counts the total number of multicast packets handled by this instance of *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq totalPktDiscards (tpktdis)

Access	Read only
Description	This attribute counts the total number of packets that were discarded for this instance of *Ppp*. This is the sum of *timedOutPkt*, *forcedPktDiscards*, *queuePurgeDiscards*, *pktThresholdExceeded*, *byteThresholdExceeded*, *mulThresholdExceeded,* and *memThresholdExceeded*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

GROUP Ppp Leq CurrentStatistics (CStats)

Properties	Operational
Description	This group contains Link Emission Queue current statistics.
Mib	Ppp

ATTRIBUTE Ppp Leq currentPktQueued (cpktq)

Access	Read only

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Description	This attribute counts the current number of packets queued.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq currentBytesQueued (cbytesq)

Access	Read only
Description	This attribute counts the current number of bytes queued.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq currentMulticastQueued (cmulq)

Access	Read only
Description	This attribute counts the current number of multicast packets in the queue.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

GROUP Ppp Leq ThresholdStatistics (ThrStats)

Properties	Operational
Description	This group contains Link Emission Queue threshold statistics.
Mib	Ppp

ATTRIBUTE Ppp Leq queuePktThreshold (qpthr)

Access	Read only
Description	This attribute is the maximum number of packets that can be contained in the queue before being discarded. If *maxPackets* was set to 0 then this attribute will contain the value that has been calculated based on the transmit data rate. If *maxPackets* was set to one or more than this attribute will contain that number.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq pktThresholdExceeded (pthrx)

Access	Read only

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Description	This attribute counts the number of packets discarded due to the *queuePktThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq queueByteThreshold (qbytethr)

Access	Read only
Description	This attribute is the maximum number of bytes allowed in the queue based on *maxMsecData* and the transmit data rate.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq byteThresholdExceeded (bthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueByteThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq queueMulticastThreshold (qmolthr)

Access	Read only
Description	This attribute is the number of multicast packets allowed in the queue based on *maxPercentMulticast* and *maxPackets*.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq mulThresholdExceeded (multhrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueMulticastThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq memThresholdExceeded (memthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to exceeding the memory usage threshold for *Leq*. The memory usage threshold is determined by the *Leq* software, guaranteeing that the *Leq* does not consume all of the memory. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

COMPONENT Ppp MlpppFramer (MlFramer)

Groups	GROUP Ppp MlFramer Provisioned (Prov) GROUP Ppp MlFramer OsiState (State) GROUP Ppp MlFramer Statistics (Stats) GROUP Ppp MlFramer LinkUtilization (Util) GROUP Ppp MlFramer DiscardStatistics (Disc) GROUP Ppp MlFramer MlpppFramerOper (Oper) GROUP Ppp MlFramer MlpppFramerStatistics (MlStats)

COLLECTED STATS PointToPointProtocol MlpppFramer

Scope	Application
Description	*Ppp/n MlpppFramer* *PppIwf/n MlpppFramer* The *MlpppFramer* component contains a group of links representing a Multilink Point To Point Protocol (MLPPP) Bundle, as describe in RFC 1990. This component contains provisionable and operational atributes that represent the MLPPP Bundle.
Mib	PppMlFramer
Opt. Subcomp.	COMPONENT Ppp MlFramer MlpppLink (Lk)
Common Verbs	Help List Display Add DELete

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GROUP Ppp MlFramer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *MlpppFramer* component.
Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer fragmentSize (fragSize)

Access	Read and write
Description	This attribute specifies the maximum fragment size in octets for the payload. The fragment size does not include the 8 octets of MLPPP Header, or the 4 octets for FCS. When the value of this attribute is set to ***no***, NCP and Data frames transmitted to the interface will not be fragmented. When the value of this attribute is not equal to ***no***, all NCP and Data frames transmitted to the interface will be divided in data fragments which are sent over different links in a bundle. During LCP configuration if the *remoteMru* is less than the provisioned *fragmentSize*, LCP will send a Configure-Nak for the MRU with a value of 1500 bytes. The fragment size is configured for the local bundle. The fragment size of the remote bundle does not need be the same.
Mib	PppMlFramer
Values	Decimal (48; 96; 144; 192; 240; 288; 336; 384; 432; 480) no
Units	octets
Default	no

ATTRIBUTE Ppp MlFramer ep0Treatment

Access	Read and write
Criticality	Process
Description	This attribute specifies the handling of egress frames sent at Emission Priority (EP) 0. If a value of ***normal*** is specified then frames sent on EP0 will be fragmentented according to the fragmentSize attribute. If a value of ***doNotFragment*** is specified then frames sent on EPO will not be fragmented but the MLPPP Header will still be prepended to the frame.

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If the value of ***noMlpppHeader*** is specified then the frames sent to EP0 will not be fragmented and the MLPPP Header will not be prepended to the frame. When this value is used misordering can occur.

Mib	PppMlFramer
Values	normal doNotFragment noMlpppHeader
Default	normal

ATTRIBUTE Ppp MlFramer configMrru (cmrru)

Access	Read and write
Criticality	Process
Description	This attribute specifies the Maximum Receive Reconstructed Unit (MRRU) that the local MLPPP bundle will advertise to the remote entity. This value includes 8 bytes for the MLPPP header, and an additional 2 bytes for the protocol field of the payload.
Mib	PppMlFramer
Values	Decimal (68..9204)
Units	octets
Default	1524

ATTRIBUTE Ppp MlFramer endpointDiscriminator (epd)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the endpoint discriminator is used during the configuration phase of a link. If the value of ***noEndpointDisc*** is specified the endpoint discriminator is not included during Link Control Protocol(LCP) negotiation. If the value ***local*** is specified the endpoint discriminator option is included during LCP negotiation. The value consists of the system's node name appended with the *Ppp/Piwf* interface component name and instance number.
Mib	PppMlFramer
Values	noEndpointDisc local
Default	local

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GROUP Ppp MlFramer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	PppMlFramer
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ppp MlFramer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	PppMlFramer
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ppp MlFramer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	PppMlFramer
Values	idle active (activ) busy
Default	idle

GROUP Ppp MlFramer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer, MlpppFramer or MlpppLink* component.
Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer crcErrors

Access	Read only

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Description	This attribute counts the total number of frames with CRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the interface for which overruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer underruns

Access	Read only

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Description	This attribute counts the total number of frames transmitted to the interface for which underruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received that were too large. The frame exeeceded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer octetToIf

Access	Read only
Description	This attribute indicates the number of octets transmitted by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Ppp MlFramer octetFromIf

Access	Read only
Description	This attribute indicates the number of octets received by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets received by the *MlpppFramer* for only NCP and Data frames.

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	This attribute indicates the number of octets received by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Ppp MlFramer frmFromIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames received by the *Framer.* This attribute indicates the number of NCP and Data frames received by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments received by the *MlpppLink.*
Mib	PppMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Ppp MlFramer frmToIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames transmitted by the *Framer.* This attribute indicates the number of NCP and Data frames transmitted by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments transmitted by the *MlpppLink.*
Mib	PppMlFramer
Values	Long Integer
Default	No default

GROUP Ppp MlFramer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	PppMlFramer

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ATTRIBUTE Ppp MlFramer normPrioLinkUtilToIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data sent to the interface as a percentage of the available bandwidth of the link (*Framer*) or the MLPPP Bundle (*MlpppFramer*). The utilization is the average for the last minute.
Mib	PppMlFramer
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Ppp MlFramer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data received from the interface as a percentage of the available bandwidth on the link(*Framer*) or the MLPPP Bundle (*MlpppFramer*). The utilization is the average for the last minute.
Mib	PppMlFramer
Values	Decimal (0..100)
Units	%
Default	0

GROUP Ppp MlFramer DiscardStatistics (Disc)

Properties	Operational
Description	This group contains the operational discards statistics for the *Framer/ MlpppFramer* component.
Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer discCongFrmToIfEp0 (disc0)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 0 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs.

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	Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppMlFramer
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Ppp MlFramer discCongFrmToIfEp1 (disc1)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 1 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppMlFramer
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

ATTRIBUTE Ppp MlFramer discCongFrmToIfEp2 (disc2)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 2 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppMlFramer
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

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ATTRIBUTE Ppp MlFramer discCongFrmToIfEp3 (disc3)

Access	Read only
Description	This attribute indicates the number of egress frames discarded due to congestion for emission priority queue 3 and each discard priority. Frames with a lowPrecedence (low drop precedence) are least likely to be be discarded when congestion occurs. Frames with a highPrecedence (high drop precedence) are most likely to be be discarded when congestion occurs.
Mib	PppMlFramer
Vector of	Decimal (0..4294967295)
Index	lowPrecedence highPrecedence
Default	No default

GROUP Ppp MlFramer MlpppFramerOper (Oper)

Properties	Operational
Description	This group contains the operational data for the *MlpppFramer* component.
Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer localMrru (lmrru)

Access	Read only
Description	This attribute indicates the negotiated value of the Maximum Receive Reconstructed Unit (MRRU) for the local MLPPP bundle. This value is the MRRU that the remote entity is using when sending packets to the local MLPPP Bundle. This value includes 8 bytes for the MLPPP header, and an additional 2 bytes for the protocol field of the payload.
Mib	PppMlFramer
Values	Decimal (1..18000)
Units	octets
Default	No default

ATTRIBUTE Ppp MlFramer remoteMrru (rmrru)

Access	Read only

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Description	This attribute indicates the current Maximum Receive Reconstructed Unit (MRRU) for the remote MLPPP bundle. This value is the MTU that the local entity is using when sending packets to the remote MLPPP Bundle. This value includes 8 bytes for the MLPPP header, and an additional 2 bytes for the protocol field of the payload.
Mib	PppMlFramer
Values	Decimal (1..18000)
Units	octets
Default	No default

ATTRIBUTE Ppp MlFramer localEndpointDiscriminator (lepd)

Access	Read only
Description	This attribute indicates the end point disciminator of the local bundle.
Mib	PppMlFramer
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Ppp MlFramer remoteEndpointDiscriminator (repd)

Access	Read only
Description	This attribute indicates the end point disciminator of the remote bundle, as it was received from the first successfully negotiated link.
Mib	PppMlFramer
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Ppp MlFramer expectedSequenceNumber (esn)

Access	Read only
Description	This attribute indicates the expected sequence number of the next MLPPP frsme received from the link. The attribute is set to the sequence number of the last fragment received plus one.
Mib	PppMlFramer
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Ppp MlFramer sentSequenceNumber (ssn)

Access	Read only

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Description	This attribute indicates the sequence number of the next MLPPP frame to be sent to the link.
Mib	PppMlFramer
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Ppp MlFramer bundleSpeed

Access	Read only
Description	This attribute indicates the aggregate speed of all enabled *MlpppLinks* under the *MlpppFramer*.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

GROUP Ppp MlFramer MlpppFramerStatistics (MlStats)

Properties	Operational
Description	This group contains the statistical attributes of the *MlpppFramer* component.
Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer discardedFrmFromIf

Access	Read only
Description	This attribute indicates the number of frames that have been received by a *MlpppLink* but are discarded by the MLPPP Bundle. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Ppp MlFramer sequencingErrors

Access	Read only
Description	This attribute indicates the number of sequencing errors detected on a MLPPP Bundle. A sequencing error occurs when one or more MLPPP frames are determined to be lost.

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This counter will wrap around to 0 when it exceeds its maximum count.

Mib PppMlFramer

Values Long Integer

Default No default

ATTRIBUTE Ppp MlFramer mrruExceededErrors

Access Read only

Description This attribute indicates the number of times a reassembled packet exceeded the *localMrru* value of an MLPPP Bundle.

This counter will wrap around to 0 when it exceeds its maximum count.

Mib PppMlFramer

Values Long Integer

Default No default

COLLECTED STATS PointToPointProtocol MlpppFramer

Description The statistics record generated by the PointToPointProtocol MlpppFramer component.

ATTRIBUTE Ppp MlFramer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Ppp MlFramer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Ppp MlFramer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Ppp MlFramer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

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ATTRIBUTE Ppp MlFramer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Ppp MlFramer MlpppLink (Lk)

Instance	Decimal (0..15)
Groups	GROUP Ppp MlFramer Lk Provisioned (Prov) GROUP Ppp MlFramer Lk OsiState (State) GROUP Ppp MlFramer Lk Statistics (Stats) GROUP Ppp MlFramer Lk LinkOperational (Lnk) GROUP Ppp MlFramer Lk LqmOperational (Lqm)
Scope	Application
Description	*Ppp/n MlFramer MlpppLink/m* *PppIwf/n MlFramer MlpppLink/m* This component is used to define the links belonging to a *MlpppFramer* component.
Mib	PppMlFramer
Opt. Subcomp.	COMPONENT Ppp MlFramer Lk Override (Ov)
Common Verbs	Help List Display Add DELete

GROUP Ppp MlFramer Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *MlpppLink* component.
Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer Lk interfaceName

Access	Read and write
Criticality	Component
Description	This attribute specifies a hardware component name. The attribute associates the application with a specific link. This defines

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	the logical processor on which *MlpppLink* component (as well as *MlpppFramer* itself) will run.
Mib	PppMlFramer
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Ppp MlFramer Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	PppMlFramer
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ppp MlFramer Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

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The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: PppMlFramer

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Ppp MlFramer Lk usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: PppMlFramer

Values: idle
active (activ)
busy

Default: idle

GROUP Ppp MlFramer Lk Statistics (Stats)

Properties: Operational

Description

This group contains the operational statistics data for a *Framer, MlpppFramer or MlpppLink* component.

Mib: PppMlFramer

ATTRIBUTE Ppp MlFramer Lk aborts

Access: Read only

Description: This attribute counts the total number of aborts received.

For a *MlpppFramer*this will be the sum for all links in the bundle.

Mib: PppMlFramer

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk overruns

Access	Read only
Description	This attribute counts the total number of frames received from the interface for which overruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Ppp MlFramer Lk underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the interface for which underruns occurred. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received that were too large. The frame exeeceded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit. For a *MlpppFramer*this will be the sum for all links in the bundle.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk octetToIf

Access	Read only
Description	This attribute indicates the number of octets transmitted by the *Framer* for LCP, NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets transmitted by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Ppp MlFramer Lk octetFromIf

Access	Read only
Description	This attribute indicates the number of octets received by the *Framer* for LCP, NCP and Data frames.

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	This attribute indicates the number of octets received by the *MlpppFramer* for only NCP and Data frames. This attribute indicates the number of octets received by the *MlpppLink* for LCP frames, and NCP and Data frames or fragments.
Mib	PppMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Ppp MlFramer Lk frmFromIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames received by the *Framer.* This attribute indicates the number of NCP and Data frames received by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments received by the *MlpppLink.*
Mib	PppMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Ppp MlFramer Lk frmToIf

Access	Read only
Description	This attribute indicates the number of LCP, NCP and Data frames transmitted by the *Framer.* This attribute indicates the number of NCP and Data frames transmitted by the *MlpppFramer.* This attribute indicates the number of LCP frames, and NCP and Data frames or frragments transmitted by the *MlpppLink.*
Mib	PppMlFramer
Values	Long Integer
Default	No default

GROUP Ppp MlFramer Lk LinkOperational (Lnk)

Properties	Operational
Description	This group contains the Link Control Protocol operational attributes for the *MlpppLink/n*.

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Mib	PppMlFramer

ATTRIBUTE Ppp MlFramer Lk **lcpState (state)**

Access	Read only
Description	This attribute indicates the operational state of the Link Control Protocol. The ***initial*** state, the link is unavailable (disabled), and no Open has occurred. The ***starting*** state LCP is has been initialized, but the link is unavailable (disabled). In the ***closed*** state, the link is available (enabled), but no Open has occurred. In the ***stopped*** state LCP is waiting for a Down event after the This-Layer-Finished action, or after sending a Terminate-Ack. In the ***closing*** state, an attempt is made to terminate the connection. A Terminate-Request has been sent a but a Terminate-Ack has not been received. In the ***stopping*** state a Terminate-Request has been sent and the Restart timer is running, but a Terminate-Ack has not yet been received. In the request sent (***reqsent***) state an attempt is made to configure the connection. A Configure-Request has been sent and the Restart timer is running, but a Configure-Ack has not yet been received nor has one been sent. In the ack received (***ackrcvd***) state, a Configure-Request has been sent and a Configure-Ack has been received. In the ack sent (***acksent***) state, a Configure-Request and a Configure-Ack have both been sent, but a Configure-Ack has not yet been received. The Restart timer is running, since a Configure-Ack has not yet been received. In the ***opened*** state, a Configure-Ack has been both sent and received. For more information as to the definition of each state see RFC1331 section 5.3.
Mib	PppMlFramer
Values	initial starting closed stopped closing stopping

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	reqsent ackrcvd acksent opened
Default	initial

ATTRIBUTE Ppp MlFramer Lk lineCondition (lcond)

Access	Read only
Description	This attribute indicates the condition of the physical line that the Link Control Protocol is running over. ***ok***: The condition of the line is good. ***looped***: The line is looped back on itself, probably at the remote end. ***misconfigured***: The value of the remote MRRU or Endpoint Discriminator in the LCP configuration request does not match the operational value of the *MlpppFramer remoteMrru* or *remoteEndpointDiscriminator* attibutes. ***noClock***: There is a hardware problem with the line. The cable may not be plugged in correctly. ***badLineCondition***: The quality of the line is below the *Ppp/n Lnk qualityThreshold*.
Mib	PppMlFramer
Values	ok looped misconfigured noClock badLineCondition
Default	ok

ATTRIBUTE Ppp MlFramer Lk badAddress (ba)

Access	Read only
Description	This attribute indicates the number of packets received with an incorrect Address Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than PPP. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk badControl (bc)

Access	Read only

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Description	This attribute indicates the number of packets received on this link with an incorrect Control Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than PPP. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk packetTooLong (ptl)

Access	Read only
Description	This attribute indicates the number of packets received that have been discarded because their length exceeded the Maximum Receive Unit (MRU). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk badFcs (bfcs)

Access	Read only
Description	This attribute indicates the number of packets received that have been discarded due to having an incorrect Frame Check Sequence (FCS). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk localMru (lmru)

Access	Read only
Description	This attribute indicates the current value of the Maximum Receive Unit (MRU) for the local *MlpppLink* Entity. This value is the MRU that the remote entity is using when sending packets to the local *MlpppLink* entity.
Mib	PppMlFramer
Values	Decimal (1..18000)
Units	octets

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Default	1

ATTRIBUTE Ppp MlFramer Lk remoteMru (rmru)

Access	Read only
Description	This attribute indicates the current value of the Maximum Receive Unit (MRU) for the remote *MlpppLink* entity. This value is the MRU that the local entity is using when sending packets to the remote *MlpppLink* entity.
Mib	PppMlFramer
Values	Decimal (1..18000)
Units	octets
Default	No default

ATTRIBUTE Ppp MlFramer Lk transmitFcsSize (tfcs)

Access	Read only
Description	This attribute indicates the size of the Frame Check Sequence (Fcs) in bits that the local node will generate when sending packets to the remote node.
Mib	PppMlFramer
Values	Decimal (0..128)
Units	bits
Default	0

ATTRIBUTE Ppp MlFramer Lk receiveFcsSize (rfcs)

Access	Read only
Description	This attribute indicates the size of the Frame Check Sequence (FCS) in bits that the remote node will generate when sending packets to the local node.
Mib	PppMlFramer
Values	Decimal (0..128)
Units	bits
Default	0

GROUP Ppp MlFramer Lk LqmOperational (Lqm)

Properties	Operational
Description	This group contains the Link Quality Monitor operational attributes for the *MlpppLink*.
Mib	PppMlFramer

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ATTRIBUTE Ppp MlFramer Lk **quality (qual)**

Access	Read only
Description	This attribute indicates the current quality of the link. A value of ***good*** indicates that *Ppp/n LinkQualityMonitor configStatus* is ***enabled*** and link quality is above *Ppp/n Lnk linkQuality Threshold*. A value of ***bad*** indicates that *Ppp/n LinkQualityMonitor configStatus* is ***enabled*** and and link quality is not above *Ppp/n Lnk linkQuality Threshold*. A value of ***notDetermined*** indicates that either the *Ppp/n LinkQualityMonitor configStatus* is ***enabled*** and the quality of the link has not been calculated yet, or the *Ppp/n LinkQualityMonitor configStatus* is ***disabled***.
Mib	PppMlFramer
Values	good bad notDetermined
Default	notDetermined

ATTRIBUTE Ppp MlFramer Lk **inGoodOctets (ingo)**

Access	Read only
Description	This attribute indicates the number of good octets received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppMlFramer
Values	Long Integer
Default	No default

ATTRIBUTE Ppp MlFramer Lk **localPeriod (localp)**

Access	Read only
Description	This attribute indicates the *Ppp/n Lqm* reporting period, in hundredths of a second that is in effect for the local link.
Mib	PppMlFramer
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Ppp MlFramer Lk **remotePeriod (remotep)**

Access	Read only

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Description	This attribute indicates the *Ppp/n Lqm* reporting period, in hundredths of a second, that is in effect for the remote link.
Mib	PppMlFramer
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Ppp MlFramer Lk outLqrs (outr)

Access	Read only
Description	This attribute indicates the number of link quality reports sent out. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp MlFramer Lk inLqrs (inr)

Access	Read only
Description	This attribute indicates the number of link quality reports received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppMlFramer
Values	Decimal (0..4294967295)
Default	0

COMPONENT Ppp MlFramer Lk Override (Ov)

Groups	GROUP Ppp MlFramer Lk Ov LinkControlProtocol (Lcp) GROUP Ppp MlFramer Lk Ov LinkQualityMonitor (Lqm)
Scope	Application
Description	*Ppp/n MlFramer Lk/n Override* *Piwf/n MlFramer Lk/n Override* This component contains all the attributes related to the *MlpppLink Override* component. When added the provisioned values for the Link Control Protocol (*Ppp/Piwf Lnk)*, and the Link Quality Monitor (*Ppp/Piwf Lqm*) will be overriden for this particular *MlpppLink* instance.

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This is an optional subcomponent of *MlpppLink*.

Mib: PppMlFramer

Common Verbs: Help, List, Display, Add, DELete

GROUP Ppp MlFramer Lk Ov LinkControlProtocol (Lcp)

Properties: Provisioned

Description: This group contains the override attributes for the Link Control Protocol.

These attributes will override the value provisioned under the *Ppp Link* or *Piwf Link* component.

Mib: PppMlFramer

ATTRIBUTE Ppp MlFramer Lk Ov configInitialMru (cimru)

Access: Read and write

Description: This is the initial Maximum Receive Unit (Mru) that the local *MlpppLink* entity will advertise to the remote entity.

When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.

A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).

Mib: PppMlFramer

Values: Decimal (68..18000)
sameAsLnk

Units: octets

Default: sameAsLnk

ATTRIBUTE Ppp MlFramer Lk Ov configMagicNumber (cmn)

Access: Read and write

Description: If ***enabled*** the local node will attempt to perform Magic Number negotiation with the remote node.

If ***disabled*** this negotiation is not performed.

In any event, the local node will comply with any magic number

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negotiations attempted by the remote node, per the Ppp specification.

When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.

A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).

Mib: PppMlFramer

Values:
disabled
enabled
sameAsLnk

Default: sameAsLnk

ATTRIBUTE Ppp MlFramer Lk Ov restartTimer (rtimer)

Access: Read and write

Description: This is the time, in milliseconds, that *MlpppLink* will wait for a response to a configure request or a terminate request before retrying.

Mib: PppMlFramer

Values:
Decimal (1000..10000)
sameAsLnk

Units: msec

Default: sameAsLnk

ATTRIBUTE Ppp MlFramer Lk Ov continuityMonitor (cntmon)

Access: Read and write

Description: This attribute turns on/off (***enabled/disabled***) the Link Continuity Monitor.

If set to ***enabled***, periodic keep alive echo packet will be sent over the *MlpppLink*.

If set to ***disabled***, no keep alive packets will be sent.

When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.

A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).

Mib: PppMlFramer

Values:
enabled
disabled
sameAsLnk

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Default	sameAsLnk

ATTRIBUTE Ppp MlFramer Lk Ov **negativeAckTries (naks)**

Access	Read and write
Description	This attribute specifies the maximum negative acknowledgments sent to the remote *MlpppLink* entity during negotiation before defaulting its configuration parameters. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.
Mib	PppMlFramer
Values	Decimal (0..4294967294) sameAsLnk
Default	sameAsLnk

ATTRIBUTE Ppp MlFramer Lk Ov **qualityThreshold (quality)**

Access	Read and write
Description	This attribute specifies the minimum allowed line quality before the line is considered too poor to continue operation. The value for this attribute is a percentage measure of the line quality given in integers (10 to 99). The higher the value, the more stringent the line requirements. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.
Mib	PppMlFramer
Values	Decimal (10..99) sameAsLnk
Units	%
Default	sameAsLnk

ATTRIBUTE Ppp MlFramer Lk Ov **qualityWindow (qwindow)**

Access	Read and write
Description	This attribute specifies the number of seconds used for sampling line quality. If line quality drops below the level set with the *Ppp Lnk qualityThreshold* attribute during this window, this instance of *MlpppLink* will be marked down until line quality recovers. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.

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Mib	PppMlFramer
Values	Decimal (10..400) sameAsLnk
Units	seconds
Default	sameAsLnk

ATTRIBUTE Ppp MlFramer Lk Ov terminateRequestTries (term)

Access	Read and write
Description	This attribute specifies the maximum terminate requests to be sent, when closing the connection, and not answered before this instance of *MlpppLink* enters a closing state. When set to ***sameAsLnk***, this attribute is not override and the value provisioned under *Ppp/Piwf Lnk* component will be used.
Mib	PppMlFramer
Values	Decimal (0..4294967294) sameAsLnk
Default	sameAsLnk

ATTRIBUTE Ppp MlFramer Lk Ov configureRequestTries (try)

Access	Read and write
Description	This attribute specifies the number of configuration requests that will be sent out and not answered before this instance of *MlpppLink* enters a listening state. If both sides enter the listening state then the link will not come up. When set to ***sameAsLnk*** the value provisioned under *Ppp/Piwf Lnk* component will be used.
Mib	PppMlFramer
Values	Decimal (0..4294967294) sameAsLnk
Default	sameAsLnk

GROUP Ppp MlFramer Lk Ov LinkQualityMonitor (Lqm)

Properties	Provisioned
Description	This group contains the override attributes for the Link Quality Monitor. These attributes will override the value provisioned under the *Ppp Lqm* or *Piwf Lqm* component.
Mib	PppMlFramer

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ATTRIBUTE Ppp MlFramer Lk Ov configPeriod (cfgper)

Access	Read and write
Description	This attribute specifies the Link Quality Monitor's reporting period that the local *MlpppLink* entity will attempt to negotiate with the remote entity, in units of hundredths of a second. A value of "0" allows the remote *Mlppp* entity to determine the reporting period. A value greater than 180,000 (1/2 hour) allows the period to be determined dynamically as a function of the transmit data rate. A value from 1-9 is rounded up to 10 during negotiation. When set to ***sameAsLqm*** the value provisioned under *Ppp/Piwf Lnk* component will be used. A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).
Mib	PppMlFramer
Values	Decimal (0..2147483647) sameAsLqm
Units	centiseconds
Default	sameAsLqm

ATTRIBUTE Ppp MlFramer Lk Ov configStatus (cfgstat)

Access	Read and write
Description	If this attribute is ***enabled***, the local node will attempt to perform *Lqm* negotiation with the remote node. If it is ***disabled*** this negotiation is not performed. When set to ***sameAsLqm*** the value provisioned under *Ppp/Piwf Lnk* component will be used. A change to this attribute will not take effect until the physical port specified by the *MlpppLink interfaceName* attribute becomes ***disabled*** (*lock/unlock*).
Mib	PppMlFramer
Values	disabled enabled sameAsLqm
Default	sameAsLqm

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COMPONENT Ppp EgressWeightedFairQueuing (Ewfq)

Groups	GROUP Ppp Ewfq Provisioned (Prov)
Scope	Application
Description	Ppp/n EgressWeightedFairQueuing*g* The egressWeightedFairQueuing component provides a mechanism to redistribute the WFQ servicing values among the queues in a manner which satisfy the requirements for the end users. The servicing values for the queues must add up to 100.
Mib	Ppp
Common Verbs	Help List Display Add DELete

GROUP Ppp Ewfq Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the EgressWeightedFairQueuing component. There are four attributes in this group and the sum of their values must add up to 100.
Mib	Ppp

ATTRIBUTE Ppp Ewfq egressServicingForQueue0 (q0)

Access	Read and write
Description	This attribute specifies the transmission frequency of queue 0 as a percentage of the total (100) port capacity.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	91

ATTRIBUTE Ppp Ewfq egressServicingForQueue1 (q1)

Access	Read and write
Description	This attribute specifies the transmission frequency of queue 1 as a percentage of the total (100) port capacity.
Mib	Ppp
Values	Decimal (0..100)
Units	%

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Default	3

ATTRIBUTE Ppp Ewfq egressServicingForQueue2 (q2)

Access	Read and write
Description	This attribute specifies the transmission frequency of queue 2 as a percentage of the total (100) port capacity.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	3

ATTRIBUTE Ppp Ewfq egressServicingForQueue3 (q3)

Access	Read and write
Description	This attribute specifies the transmission frequency of queue 3 as a percentage of the total (100) port capacity.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	3

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Ppp

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Prov

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COMPONENT ProvisioningSystem (Prov)

Groups	GROUP Prov OsiState (State) GROUP Prov Operational (Oper) GROUP Prov Provisioned (Prov)
Scope	Application
Description	*ProvisioningSystem* This component implements the operator commands that are specific to the provisioning system. It also provides information about the state of the provisioning system.
Mib	Provisioning
Opt. Subcomp.	COMPONENT Prov ActivationMode (Am)
Dyn. Subcomp.	COMPONENT Prov View COMPONENT Prov SoftwareMigration (Migration) COMPONENT Prov HitlessSoftwarePatch (Patch) COMPONENT Prov CriticalAttributeActivation (CAA)
Common Verbs	Help List Display

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VERB ACTivate Prov

Impact: Service

Description:

Activate [-file(<file name>)] [-force] [-noPause] Prov
This verb is used to activate (or bring into service) the provisioning data changes in the edit view or from a specified provisioning data file.

After activation completes, the operator must issue a *Confirm* command in order to prevent automatic re-activation of the committed view. Note that the committed view is not necessarily the same as the view which was in effect prior to the activation.

Options:
-file (<file name>)
specifies the name of a file containing provisioning data to be loaded, checked and activated. Note that only this form of the activate verb is allowed outside of provisioning mode.

The *file name* argument has the form
name[.type[.number]]
where *name* is the name of the file; *type* must be ***full***; and *number* is the unique sequence number of the file.

The *name* part of the argument must be between 1 and 31 characters in length, and may contain only alphanumeric characters and underscores. Note that file names are case-sensitive. If *number* is omitted, the most recent file beginning with *name.type* will be used; if both *type* and *number* are omitted, the most recent (complete) file beginning with *name.**full*** will be used.

-force
When a complete provisioning view is activated, the provisioning system checks to make sure that all the software necessary to activate the components contained in the view is currently running on the module. If any necessary software is missing, the *Activate* command fails and a list of missing software is displayed. The *-force* option overrides the checks for required software, and causes the file to be loaded and activated by reloading the module with this provisioning data file.

When an unchecked provisioning view is being activated, the provisioning system runs a semantic *check* to issue errors and warnings. Some warnings are considered critical. For example, a service may have to be restarted in order to activate the specified provisioning data change, or a complete system restart may be required. If a semantic check error or critical warning occurs, the *activate* command is aborted. The *-force* option overrides the critical warnings, and activates the changes regardless. Note that semantic check errors can not be overridden.

In addition, if the journaled current view can be restored, then the *Activate Prov* command may cause the journaled current view to be purged, and a

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restore to be no longer possible. In this case, the -*force* option is required for the activation to proceed. Note that a restore is only possible if the attribute *restorePossible* is set to ***yes***.

-noPause
A staged software migration may enter a paused state if certain events occur. These events include software and hardware alarms on the migration shelf, provisioning data that is nacked, and the failure of an application to indicate that it is ready for the migration switchover. Once a software migration is paused, the user must issue the *Continue* command to unpause it.

The -noPause option indicates that the migration is never paused, even if a pausable event occurs.

-pause
A staged software migration is going to enter a paused state. Once a software migration is paused, the user must issue the *Continue* command to unpause it.

The -noPause and -pause Options are mutually exclusive.

VERB Check Prov

Impact: Configuration

Description: *Check [-stopOnError][-component (<name>) [-nonrecursive]] [-changed] Prov*

This verb checks the provisioning data in the edit view to ensure it is semantically correct. A view cannot be activated until this check has been successfully completed.

If the semantic check fails, all errors must be corrected before an activation attempt will succeed.

Options:
-stopOnError
This option specifies that the check should be aborted immediately upon finding the first error. If this option is not specified, the system will abort after five (or more) errors have been detected.

-component(<name>)
This option specifies that the named component and all its

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subcomponents (recursively) are to be checked for semantic correctness. That is, the entire subtree, rooted at the named component will be checked. If this option is not specified, the entire edit view is checked.

-nonrecursive
This option specifies that only the named component (that is, none of its subcomponents) is to be checked for semantic correctness.

-changed
This option specifies that checks will only be run on added or changed components. Note that this may mean that not all required checks will run. This option is not valid when the -*component* option is used.

VERB CLEAR Prov

Impact: System_admin

Description:

Clear [-removedFeature] Prov
This verb, when used with no options, will remove all deletable components (and their subcomponents) from the edit view. Components which cannot be deleted (and their subcomponents) are not affected.

Options:
-removedFeature
This option is typically used in conjunction with previously having removed one or more features from one or more LPTs. This option specifies that all components, both deletable and non-deletable, which will have their associated software unloaded from the switch, are to be removed from the edit view by the provisioning system.

VERB COMMIT Prov

Impact: Service

Description:

Commit [-file(<file name>)] [-force] Prov
Commit makes the current view of the provisioning data the “committed” view. The committed view is the configuration that the module will activate following a Control Processor reset.

If the command specifies a filename, *Commit* will save the data for the current view in that file. If the current view has not been saved, the filename must be specified.

Note: in a system having two disks, the disks must be synchronized before the *commit* command will be accepted.

Options:
-file(<file name>)
specifies the name of the output file (actually the prefix for the output file name, as explained below) to be used for saving the current view data. If this option is not specified, the data for the current view must have already been saved, otherwise an error response will be generated.

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The *file name* argument must be between 1 and 31 characters in length, and may contain only alphanumeric characters and underscores. File names are case-sensitive.

The actual file name used for the saved data has the form *name*.full.*number*
where *name* is the name specified in the *-file* option; and *number* is a unique sequence number for the file generated by the provisioning system.

-force
If the journaled current view can be restored, then the *Commit Prov* command will cause the journaled current view to be purged, and a restore will no longer be possible. In this case, the *-force* option is required for the *commit prov* command to proceed. Note that a restore is only possible if the attribute *restorePossible* is set to ***yes***.

VERB Confirm Prov

Impact: Service

Description:

Confirm Prov
A *Confirm* command must be issued following each *Activate* command. This ensures that management connectivity has not been lost when a new provisioning view is brought into service.

If a *Confirm* is not entered within a reasonable time following an *Activate*, a system restart will occur and the committed view will be re-activated by the system. Service will be disrupted while the restart is in progress.

VERB Copy Prov

Impact: Configuration

Description:

Copy [-source(<component name>) [-current] [-nonrecursive] [-destination(<component name>)]]Prov
This verb is used to copy all or part of a view into the edit view.

If no options are provided, the entire current view is copied into the edit view, replacing whatever was in the edit view previously, so that the two views are identical afterward.

Options:
-source(<component name>)
specifies that only the named component and its subcomponents are to be copied. If any of these components already exist in the edit view, the copy fails and the edit view is unchanged. When *-source* is the only option specified, the system automatically copies the component and its subcomponents, if any, from the current view into the edit view.

-current
specifies that components are to be copied from the current view to the edit view, rather than being copied from the edit view.

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-nonrecursive
This option is valid only if the *-source* option is also present. It specifies that the named *source* component (but not its subcomponents) should be copied. If, however, the copied component has “required” subcomponents, the default instances of these “required” subcomponents are always created. (This is similar to the behavior of the *Add* command.)

-destination(<component name>)
specifies the name to be given to the copy of the *source* component when it is put into the edit view. Any copied subcomponents of the *source* component will be likewise renamed in the edit view. If any renamed component already exists in the edit view, the copy fails and the edit view is unchanged.

VERB End Prov

Impact: Configuration

Description:

End Prov
This verb is used to leave provisioning mode.

The edit view is unchanged by this command. The edit view is not automatically saved on disk; it will be presented to the next provisioning operator as it was when the *End* command was executed.

VERB Load Prov

Impact: Configuration

Description:

Load [-force] -file(<file name>) Prov
This verb is used to load a specified file of provisioning data from the disk into the edit view.

Options:
-file (<file name>)
specifies the name of the file containing the provisioning data to be loaded.The *file name* argument has the form
name[.type[.number]]
where *name* is the name of the file; *type* is either ***full*** if the file contains a complete view, or ***part*** if the file contains only a particular component (and its subcomponents); and *number* is the unique sequence number of the file.

The *name* part of the argument must be between 1 and 31 characters in length, and may contain only alphanumeric characters and underscores. Note that file names are case-sensitive. If *number* is omitted, the most recent file beginning with *name.type* will be used; if both *type* and *number* are omitted, the most recent (complete) file beginning with *name.**full*** will be used.

-force
Normally, when a complete provisioning view is loaded, the provisioning system checks to make sure that all the software necessary to activate the

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components contained in the view is currently running on the module. If any necessary software is missing, the *Load* command fails and a list of missing software is displayed.

The *-force* option overrides the checks for required software; that is, it causes the file to be loaded regardless of what software is currently running. When this option is used, error messages and software alarms may appear during loading of the file, and some components which are present in the file may be missing from the edit view when loading is complete.

The *-force* option also ensures the system processes the entire provisioning file rather than stopping after 5 errors.

VERB Save Prov

Impact — Configuration

Description

Save [-current] [-file(<file name>)]
[-component(<component name>)]
[-ascii] [-portable] Prov
This verb is used to save all or part of a provisioning view on the disk.

If no options are provided, the entire edit view is saved, using a default file name (see the description of the *-file* option below).

Options:
-current
specifies that the provisioning data of the current view is to be saved. If this option is not specified, the data of the edit view is saved.

-file(<file name>)
This option specifies the name of the output file (actually the prefix for the output file name, as explained below). The name must be between 1 and 31 characters in length, and may contain only alphanumeric characters and underscores.

The actual file name used for the saved data has the form
name.type.number
where *name* is the name specified in the *-file* option; *type* is automatically set to ***full*** if the file contains a complete view, or ***part*** otherwise; and *number* will be a unique sequence number for the file, generated by the provisioning system.

If the *-file* option is not specified, the *name* used in the most recent *Save*, *Load* or *Commit* command involving a complete view is used to construct the output file name as described above.

-component(<component name>)
This option specifies a particular component to be saved; the named component must be provisionable. Only this component and its subcomponents will appear in the saved provisioning data.

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When this option is used, the *-file* option must also be specified; the name of the saved file will always have the form *name.**part**.number*

-ascii
This option is used to force the system to write a file in ASCII format. This format is not required by the switch itself, but a file in this format may be used by external tools.

-portable
This option forces the system to write a complete file to disk. The ***portable*** format may at times be automatically generated when needed and the user would not normally be required to use this option. One reason to use this option is that the ***portable*** format is one complete unit (not dependent on any other view) and may be backed up, while the ***delta*** format has dependencies on the current view when saved.

If the *-ascii*, *-component* and *-portable* options are not specified, the system will save the differences between the edit and current views in the ***delta*** format.

VERB Start (St) **Prov**

Impact: Configuration

Description:

Start [-force] Prov
This verb is used to enter the provisioning mode. Only one operator session can be in provisioning mode at a given time. Therefore a *Start* command is normally rejected if another session is in provisioning mode.

Options:
-force
This option allows an operator with at least ***systemAdministration*** impact to enter provisioning mode even when another operator's session is already in provisioning mode. A user with configuration impact uses the force option to take over a provisioning session he/she has opened in another NMIS session.

The other operator's session is forced out of provisioning mode, after completing any commands in progress. A message alarm is generated to indicate that the other session is no longer in provisioning mode. The contents of the edit view created by the other operator are unaffected by the change of ownership of the provisioning session; therefore on entering provisioning mode the new provisioning operator may see a partially provisioned edit view created by the previous provisioning operator. Note that this view might not have been saved on disk by the previous operator.

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VERB Tidy Prov

Impact: Configuration

Description:

Tidy[-all]
[-keep(<file> ...)]
[-remove(<file> ...)]
[-fromDate(<date>) -toDate(<date>)]

This verb causes the system to remove old provisioning views and/or software from the disk. Note that at least one option must be included in the command.

The following views and files are never removed by the *Tidy* command, regardless of the options specified in the command:
- the committed view
- the most recent complete view used by an *Activate, Load, Save* or *Commit* command
- the current view, if it exists as a saved view
- any view that is a base view for another kept view
- all protected views
- views that are currently opened for reading or writing
- non-provisioning files

The sequence of tidying events is as follows:
- prepare a list of candidate files for deletion (using the *-all*, *-remove* options)
- remove files from the list if they must be kept (using the *-keep*, *-fromDate*, *-toDate* option)
- remove the files on the list

This means that if the options specify a particular file (either explicitly or by wild-carding) both for removal and keeping, then the file will be kept.

Options:

-all
specifies that all views except the special views mentioned above are to be removed. This option can not be combined with the -remove, -fromDate, or -toDate options.

-keep(<view> <view> ...)
specifies that all views except the given list of views and the special views mentioned above are to be removed. Combining the -all option with this option is redundant.

-remove(<view> <view>...)
specifies that the given list of views are to be removed.

-fromDate(<date>)
specifies the start date (which has a format of yyyy-mm-dd) of the period for which views are to be removed. The period specification is inclusive,

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that is, views created or modified on this date will be removed. If this option is specified, the -toDate option must also be specified in the command. Also, the time specified by *toDate* must not be earlier than *fromDate*.

-toDate(<date>)
specifies the end date (which has a format of yyyy-mm-dd) of the period for which views are to be removed. The period specification is inclusive, that is, views created or modified on this date will be removed. If this option is specified, the -fromDate option must also be specified in the command. Also, the time specified by *toDate* must not be earlier than *fromDate*.

VERB STOP Prov

Impact	Configuration
Description	*Stop Prov* This verb causes certain potentially long-running *ProvisioningSystem* commands to be aborted. Only the *Apply*, *Check*, *Load*, *Save, and Activate* commands can be stopped in this manner and they can only be stopped by a user in provisioning mode. If *provisioningActivity* has the value "***semantic checking***", "***saving***" or "***loading or applying***", the *ProvisioningSystem* attempts to abort the activity at the earliest possible time. This may not happen immediately as the command must finish the phase it is in before aborting. If provisioningActivity has the value "***activating***" and this is a software upgrade and only the sw component was changed, then ProvisioningSystem attempts to abort the command. The *activityProgress* indicates the status of the abort until it has occurred. Note that the *Stop* command itself completes immediately (indicating success) even if the long-running command does not (the long-running command will indicate that it has been cancelled when it actually stops). If *provisioningActivity* has any other value, or is not applicable to the activation, the user is notified that the *Stop* command is not supported for the current activity.

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VERB APPly Prov

Impact	Configuration
Description	*Apply [-force] -file(<file name>) Prov* This verb is used to apply a previously stored set of changes (saved in ***delta*** format) to the edit view. **Options:** *-file (<file name>)* specifies the file, saved with a ***delta*** format, containing the changes to be applied.The *file name* argument has the form *name[*.full*[.number]]* where *name* is the name of the file; and *number* is the unique sequence number of the file. The *name* must refer to a file saved with a ***delta*** format, that is, created by the *Save Prov* command without the *-ascii* or *-portable* options. Note that file names are case-sensitive. If *number* is omitted, the most recent file beginning with *name.**full*** will be used; if only name is specified, the most recent (complete) file beginning with *name.**full*** will be used. *-force* Normally, when a complete provisioning view is applied, the provisioning system checks to make sure that all the software necessary to activate the components contained in the view is currently running on the module. If any necessary software is missing, the *Apply* command fails and a list of missing software is displayed. The *-force* option overrides the checks for required software; that is, it causes the file to be loaded regardless of what software is currently running. When this option is used, error messages and software alarms may appear during processing of the file, and some components which are present in the file may be missing from the edit view when the apply completes. The *-force* option also ensures the system processes the entire provisioning file rather than stopping after 5 errors.

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VERB Continue Prov

Impact	Service
Description	Continue [-force] Prov This verb causes a software migration activation to be continued if it has been paused. Only an *Activate* command where the *provisioningActivity* has the value "***software migration paused, manual intervention required***" can be continued. If provisioningActivity has any other value, the user is notified that this command is not supported for the current activity. *-force* The *-force* option is going to continue software migration regardless of the pause cause. Pause cause can be that operator used *Activate* command with *-pause* option, or some pausable event occurred. These events include software and hardware alarms on the migration shelf, provisioning data that is nacked, and the failure of an application to indicate that it is ready for the migration switchover.

VERB REStore Prov

Impact	Service
Description	*Restore Prov* This verb causes the provisioning system to re-activate the journaled current view if a switch resets to the committed view. The attribute *restorePossible* is set to ***yes*** in the case where the *Restore Prov* command can be issued to restore the journaled current view.

GROUP Prov OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Provisioning

ATTRIBUTE Prov adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Provisioning

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Prov operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Provisioning

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Prov usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Provisioning

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Values	idle active (activ) busy
Default	idle

GROUP Prov Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *ProvisioningSystem* component.
Mib	Provisioning

ATTRIBUTE Prov provisioningActivity

Access	Read only
Description	This attribute describes the type of provisioning activity that the *ProvisioningSystem* component is performing.
Mib	Provisioning
Values	initial loading none activation initial activation rolling back saving loading or applying semantic checking waiting for confirm clearing copying committing deleting confirming adding restoring
Default	No default

ATTRIBUTE Prov activityProgress

Access	Read only
Description	This attribute indicates the status relating to a long-running command handled by the *ProvisioningSystem*. It is usually expressed as a percentage of the number of elements (for example, components) processed with respect to the total set of elements that need to be processed for that activity. Note that, one cannot assume that the percentage implies how much time the task may still take. The time to complete the activity is dependent on many things which are beyond the control of the *ProvisioningSystem* itself.

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Mib	Provisioning
Values	String (1..255, ASCII)
Default	No default

ATTRIBUTE Prov committedFileName

Access	Read only
Description	This attribute contains the name of the committed file. This is the file that will be used to obtain the provisioning data if the module restarts. Immediately after system power-up, this attribute contains the name of the file used during initial loading.
Mib	Provisioning
Values	String (1..40, ASCII)
Default	No default

ATTRIBUTE Prov currentViewFileName

Access	Read only
Description	This attribute contains the name of the provisioning file that contains the current view provisioning data. After system power-up, this attribute contains the name of the file used during initial loading. If the current view data has not been saved, this attribute is empty.
Mib	Provisioning
Values	String (1..40, ASCII)
Default	No default

ATTRIBUTE Prov lastUsedFileName

Access	Read only
Description	This attribute contains the last saved, loaded or committed file name. If a *Load*, *Save* or *Commit* command returns an error, this attribute remains unchanged. Immediately after system power-up, this attribute contains the name of the file used during initial loading.
Mib	Provisioning
Values	String (1..40, ASCII)
Default	No default

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ATTRIBUTE Prov provisioningSession (session)

Access	Read only
Description	This attribute contains the component name of the operator session which is currently in provisioning mode. For example, ***NMIS Telnet Session/2*** If no session is in provisioning mode, this attribute will be empty.
Mib	Provisioning
Values	The name of the component
Default	No default

ATTRIBUTE Prov provisioningUser (user)

Access	Read only
Description	This attribute contains the *userid* of the operator who is currently provisioning the module. If no session is in provisioning mode, this attribute will be empty.
Mib	Provisioning
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE Prov checkRequired

Access	Read only
Description	This attribute indicates whether semantic checking is required before activating the edit view.
Mib	Provisioning
Values	yes no
Default	No default

ATTRIBUTE Prov confirmRequired

Access	Read only
Description	This attribute indicates whether the operator must enter a *Confirm Prov* command in order to keep a newly activated or restored current view in effect. If an activation or restore is not confirmed within 20 minutes of its completion, the module will restart using the committed provisioning data.
Mib	Provisioning
Values	yes no

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Default	No default

ATTRIBUTE Prov editViewName (evName)

Access	Read only
Description	This attribute indicates the name of the provisioning view that represents the edit view provisioning data. If the edit view data has not been saved, this attribute is empty.
Mib	Provisioning
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Prov editViewAddedComponents (evAdded)

Access	Read only
Description	This attribute indicates the number of provisioning components that have been added to the edit view with respect to the current view.
Mib	Provisioning
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Prov editViewDeletedComponents (evDeleted)

Access	Read only
Description	This attribute indicates the number of provisioned components that have been deleted from the edit view with respect to the current view.
Mib	Provisioning
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Prov editViewChangedComponents (evChanged)

Access	Read only
Description	This attribute indicates the number of provisioned components whose attributes differ between the edit and current views.
Mib	Provisioning
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Prov standbyCpActivity

Access	Read only

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Description	This attribute indicates the current activity being performed by the provisioning system on the standby CP. This attribute may take the following values: ***none*** - When no provisioning activity is in progress. ***loading provisioning data*** - When a committed file is being loaded. ***saving commit-format provisioning data*** - When provisioning data is being saved with commit formats in preparation for a software migration. ***delivering provisioning data on migrating cards*** - When the standby CP is being activated as the migration active card for a software migration. ***synchronizing provisioning data***- When a journal log file is being loaded on the standby CP in order to synchronize the standby CP configuration database with the active CP configuration database. This occurs after a manual activation has been confirmed when CP equipment protection is provisioned. ***loading new software on CP*** - When the standby CP is coming up and is being loaded with software.
Mib	Provisioning
Values	none loading provisioning data saving commit-format provisioning data delivering provisioning data on migrating cards synchronizing provisioning data loading new software on CP
Default	No default

ATTRIBUTE Prov standbyCpActivityProgress

Access	Read only
Description	This attribute indicates the status of the provisioning activity which the *ProvisioningSystem* is performing on the standby CP.
Mib	Provisioning
Values	String (1..255, ASCII)
Default	No default

ATTRIBUTE Prov journalDisabledReason

Access	Read only
Description	This attribute indicates the reason (if any) that journal log file saving is disabled. This attribute may take the following values: ***"not disabled"*** - If journal log file saving is operationally enabled. ***"not configured"*** - If journal log file saving is provisioned to be disabled. ***"file system error***" - If journal log file saving is operationally disabled due to a file system problem, such as disk full or file system locked. ***"threshold exceeded"*** - If journal log file saving is operationally disabled because the maximum number of journal log files has already been reached. ***"reload activation***" - If journal log file saving is operationally disabled

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	because the last activation was a reload activation. ***"initial commit required"*** - If journaling has just been enabled by provisioning but a *Commit Prov* has not been issued. "***restore failed***" - If journal log saving is operationally disabled because the *restore prov* command failed to restore all the journal logs. After the error condition is corrected, a *Commit Prov* command causes journaling to become enabled once again.
Mib	Provisioning
Values	not disabled not configured file system error threshold exceeded reload activation initial commit required restore failed
Default	No default

ATTRIBUTE Prov restorePossible

Access	Read only
Description	This attribute indicates whether or not it is possible to use the *Restore Prov* command to restore to the last known current view after a switch reset. If a switch comes up and a *Restore Prov* command is possible, a warning alarm with index 7000 0038 will be raised against the *Prov* component. This alarm will be cleared when the *Restore Prov* command is issued by the operator. It will also be cleared if the operator does not perform a *Restore Prov* command, but performs an *Activate Prov* or a *Commit Prov*. Note that an activation or commit before a *Restore Prov* command results in the removal of all the existing journal log files, so that a *Restore Prov* command will no longer be possible. This situation is indicated to the operator by a semantic check warning.
Mib	Provisioning
Values	yes no
Default	No default

ATTRIBUTE Prov currentJournal (currentJn)

Access	Read only
Description	This attribute indicates the number of journal logs files that have been saved since the last *Commit Prov* command. When the value of the *currentJournal* attribute approaches the provisioned maximum allowed number of journal log files (a value represented by the *maxNumberJournalFiles* attribute), an alarm with index 7000 0036 is

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raised against the *Prov* component. The severity of the alarm depends on the percentage of the maximum allowed number of journal log files that have been saved since the last *Commit Prov* command:

75% - Warning
85% - Minor
95% - Major

If the user does not perform a *Commit Prov* command and allows the value of the *currentJournal* attribute to equal the *maxNumberJournalFiles* attribute, journal log file saving becomes operationally disabled. In this case, a critical alarm with index 7000 0037 is raised against the *Prov* component. The resulting impact is that CP equipment protection is disabled, and a CP switchover attempt would result in a shelf reset instead.

When the user enters a *Commit Prov* command, all previous journal logs are removed and the *currentJournal* attribute is reset to zero. If an alarm was raised because journal log saving was disabled, it is cleared. If an alarm was raised due to the number of journal log files before the commit prov, it is cleared. If CP equipment protection and journal log saving were disabled before the *Commit Prov* command because of the number of journal log files, they become enabled after the *Commit Prov* command.

Mib	Provisioning
Values	Decimal (0..2000)
Default	No default

GROUP Prov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *ProvisioningSystem* component.
Mib	Provisioning

ATTRIBUTE Prov maxNumberJournalFiles (maxJn)

Access	Read and write
Description	This attribute specifies the maximum number of journal files that can be saved. A value of ***none*** specifies that journaling is disabled, while any other value specifies that journaling is enabled. The *Shelf cpEquipmentProtection* attribute must be set to ***cold*** when the *maxNumberJournalFiles* attribute is set to ***none***. The value of the *maxNumberJournalFiles* attribute must be greater than the value of the *Prov currentJournal* operational attribute. If it is not, the resulting impact is that journal log file saving becomes operationally disabled. A critical alarm with index 7000 0037 is also raised against the *Prov* component. A *Commit Prov* command would need to be entered to re-enable journaling.

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The operator may want to set the *maxNumberJournalFiles* attribute to be less than the default value of ***2000*** in order to force a *Commit Prov* command to be entered more frequently. If a switch reset to the committed view occurs, the *Restore Prov* command may take less time to complete in this case, since there are fewer journal log files to load and activate.

Mib	Provisioning
Values	Decimal (100..2000) none
Default	2000

ATTRIBUTE Prov autoConfirm

Access	Read and write
Description	This attribute specifies whether the auto-confirmation functionality is turned on or off. When the attribute is turned ***on***, the operator need not issue a *Confirm Prov* command following an activation. When the attribute is turned ***off***, any activation should be confirmed through the *Confirm Prov* command. With this attribute turned ***on***, if an activation inadvertently impacts management connectivity to the shelf, then the shelf would remain isolated from management perspective. Hence,it is strongly recommended to have serial port access to the switch for troubleshooting and recovery.
Mib	Provisioning
Values	off on
Default	off

COMPONENT Prov View

Instance	String (1..40, ASCII)
Groups	GROUP Prov View Operational (Oper)
Scope	Application
Description	*Prov View/<string>* This component represents information about provisioning views. Most of these views have been saved and can be activated or loaded. In this case, the format for <string> is <name>.<type>.<number> where <name> is the view's name; <type> is either ***full*** or ***part***, <number> is a unique sequence number generated by the system.

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The ***current*** and ***edit*** views are not necessarily saved.

Mib	Provisioning
Common Verbs	Help List Display

GROUP Prov View Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *View* component.
Mib	Provisioning

ATTRIBUTE Prov View user

Access	Read only
Description	This attribute indicates the *userid* of the operator who first saved this view. It may be empty if unknown or if the view has not been saved.
Mib	Provisioning
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Prov View checkState

Access	Read only
Description	This attribute indicates the semantic check state of the view when it was saved. The values are described in worst to best order. The ***failed*** state indicates that the view has failed a semantic check and cannot be activated. The ***unknown*** state indicates that semantic checks have not been run and the view cannot be activated. The ***partial*** state indicates that the view has passed incomplete checks, that is *Check -changed Prov* has succeeded. This is also the best state value for a partial view. Thew view cannot be activated until it has been fully checked. The ***softwareChanged*** state indicates that the view has passed complete checks, but by software other than that to be activated, that is, either the application versions have changed, or features have been added. After activation, the new software may detect semantic errors. After correcting these errors, if any, the view will need to be re-saved or re-committed as appropriate.

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The ***full*** state indicates that the view has passed complete checks, that is, it has been fully verified. It can be activated.

Mib	Provisioning
Values	failed (fail) unknown (unk) partial (part) softwareChanged (sw) full
Default	No default

ATTRIBUTE Prov View components (comps)

Access	Read only
Description	This attributes indicates the number of provisioned components that have been (or could be) saved.
Mib	Provisioning
Values	Decimal (0..999999)
Default	No default

ATTRIBUTE Prov View formats

Access	Read only
Description	This attribute indicates the formats of the saved information. Each serves a different purpose. The ***ascii*** format is readable by operators and can be easily parsed and generated by scripts. MDM makes use of this format. Note that the syntax is subject to change without notice. This format is generated via *Save -ascii Prov*. A view with an ascii format can be loaded and activated. The ***commit*** format is generated via *Commit Prov* and allows for fast activation, that is, a shorter service outage time. The system will never leave a view with only this format, as it cannot be loaded. The ***delta*** format contains the changes made between the current view and the edit view. It is, therefore, much smaller and faster to *Load* or *Save* than the other formats. A view containing this format can be loaded or have the changes applied to the edit view. This provides a mechanism to propagate a set of changes from one view to another. A view containing only this format can be activated if this would not require a system reload. To generate this format, issue *Save Prov* without the *-ascii* or *-portable* options. The ***part*** format is generated via *Save -component() Prov*. The part format can be loaded. The syntax of this format is subject to change without notice.

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	The ***portable*** format is a compact representation that can be quickly loaded. It can be transported from one node to another, or to an MDM. It is generated via *Save -portable Prov.* The portable format can be loaded and activated.
Mib	Provisioning
Set of	ascii commit delta part portable (port)
Default	No default

ATTRIBUTE Prov View baseView (base)

Access	Read only
Description	This attribute indicates the name of the view upon which this view's changes are based (even if the ***delta*** format does not exists). In other words, it indicates the name of the current view that existed at the time that this view was saved. This may not be the name of the current view that is running now. This attribute is empty when the view is unsaved or if the current view was saved.
Mib	Provisioning
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Prov View version

Access	Read only
Description	This attribute represents the version of base software that saved this view. It is empty if unknown.
Mib	Provisioning
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Prov View creationDate

Access	Read only
Description	This attribute indicates the creation date of this view.
Mib	Provisioning
Values	Time (DHMS)

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Default	No default

COMPONENT Prov SoftwareMigration (Migration)

Groups	GROUP Prov Migration OsiState (State)
Scope	Application
Description	*Prov SoftwareMigration* This component coordinates the migration visible alarms generated by the migration shelf while a software migration activation is in progress. The *Migration* component is automatically created at the start of a software migration activation and is removed at the completion of a software migration activation, whether successful or unsuccessful. The presence of the *Migration* component indicates that a software migration activation is being performed.
Mib	Provisioning
Common Verbs	Help List Display

GROUP Prov Migration OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Provisioning

ATTRIBUTE Prov Migration adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Provisioning
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Prov Migration operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Provisioning
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Prov Migration usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Provisioning
Values	idle active (activ) busy
Default	idle

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COMPONENT Prov HitlessSoftwarePatch (Patch)

Groups	GROUP Prov Patch OsiState (State) GROUP Prov Patch Operational (Oper)
Scope	Application
Description	*Prov HitlessSoftwarePatch* This component coordinates the Hitless Software Patching (HSP) visible alarms generated while a HSP is in progress. The *Patch* component is automatically created at the start of a HSP and is removed at the completion of a HSP, whether successful or unsuccessful. The presence of the *Patch* component indicates that a HSP activation is being performed.
Mib	Provisioning
Common Verbs	Help List Display

GROUP Prov Patch OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Provisioning

ATTRIBUTE Prov Patch adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	Provisioning
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Prov Patch operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Provisioning
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Prov Patch usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Provisioning
Values	idle active (activ) busy
Default	idle

GROUP Prov Patch Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for the *Prov Patch* component.
Mib	Provisioning

ATTRIBUTE Prov Patch cardsBeingPatched

Access	Read only
Description	This attribute indicates the list of the cards currently being patched during the Hitless Software Patching (HSP) process. An empty list indicates that there is no card being currently patched.
Mib	Provisioning
List of	The name of the component
List Size	16
Default	No default

ATTRIBUTE Prov Patch cardsToPatch

Access	Read only
Description	This attribute indicates the list of the cards to be patched. As cards are successfully patched, they are removed from this list and added to *cardsPatched*.
Mib	Provisioning
List of	The name of the component
List Size	16
Default	No default

ATTRIBUTE Prov Patch cardsPatched

Access	Read only
Description	This attribute indicates the list of cards on which the software has been successfully patched as a result of the Hitless Software Patching (HSP).
Mib	Provisioning
List of	The name of the component
List Size	16
Default	No default

COMPONENT Prov ActivationMode (Am)

Groups	GROUP Prov Am AmProv
Scope	Network

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Description	*ActivationMode* This component enables an operator to provision the permitted activation types.
Mib	ProvAm
Dyn. Subcomp.	COMPONENT Prov Am HcaAttribute (Hca)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Prov Am AmProv

Properties	Provisioned
Description	This group contains the provisionable attributes for the *ActivationMode* component.
Mib	ProvAm

ATTRIBUTE Prov Am hitlessActivation (hac)

Access	Read: All Write: System_admin
Description	An operator can enable hitless only activations by setting this attribute to ***enabled***. By default this attribute is set to ***enabled***. When this attribute is set to ***enabled***, any provisioning changes which are service disruptive will result in semantic check failure. If this attribute is set to ***disabled*** a SET alarm will be issued. A CLR alarm will be issued when this attribute is set to ***enabled*** or when the *ProvisioningSystem ActivationMode* component is deleted.
Mib	ProvAm
Values	disabled enabled
Default	enabled

COMPONENT Prov Am HcaAttribute (Hca)

Instance	Decimal (1..1000)
Groups	GROUP Prov Am Hca Operational (Oper)
Scope	Device

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Description	*ProvisioningSystem ActivationMode HcaAttribute/n* This component represents one attribute which supports Hitless Critical Attribute activation.
Mib	ProvAm
Common Verbs	Help List Display

GROUP Prov Am Hca Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *HcaAttributes* component.
Mib	ProvAm

ATTRIBUTE Prov Am Hca attributePath

Access	Read only
Description	This attribute contains the entire path of an attribute which supports Hitless Critical Attribute activation.
Mib	ProvAm
Values	String (0..256, Extended ASCII)
Default	No default

COMPONENT Prov CriticalAttributeActivation (CAA)

Groups	GROUP Prov CAA OsiState (State) GROUP Prov CAA Operational (Oper)
Scope	Application
Description	*Prov CtricalAttributeActivation* This component coordinates the Hitless Critical Attribute (HCA) activation visible alarms generated while a HCA activation is in progress. The *CtricalAttributeActivation* component is automatically created at the start of a HCA activation and is removed at the completion of a HCA activation, whether successful or unsuccessful. The presence of the *CtricalAttributeActivation* component indicates that a HCA activation is being performed.
Mib	ProvAm
Common Verbs	Help List Display

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GROUP Prov CAA OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	ProvAm

ATTRIBUTE Prov CAA adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	ProvAm
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Prov CAA operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	ProvAm
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Prov CAA usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	ProvAm
Values	idle active (activ) busy
Default	idle

GROUP Prov CAA Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Prov CtricalAttributeActivation* component.
Mib	ProvAm

ATTRIBUTE Prov CAA cardsBeingActivated

Access	Read only
Description	This attribute indicates the list of the cards currently being activated during the Hitless Critical Attribute (HCA) activation. An empty list indicates that there is no card being currently activated.
Mib	ProvAm
List of	The name of the component
List Size	16
Default	No default

ATTRIBUTE Prov CAA cardsToActivate

Access	Read only

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Description	This attribute indicates the list of the cards to be activated. As cards are successfully activated, they are removed from this list and added to *cardsActivated*.
Mib	ProvAm
List of	The name of the component
List Size	16
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Prov

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Rex

NN10600-060

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COMPONENT RoutineExerciser (Rex)

Groups	GROUP Rex Provisioned (Prov) GROUP Rex Operational (Oper) GROUP Rex LastResults (Last)
Scope	Device
Description	*RoutineExerciser* There is one Routine Exerciser component per module. It is responsible for scheduling, executing, and reporting protected hardware tests.
Mib	Rex
Subcomponents	COMPONENT Rex DayOfWeek (Dow)
Common Verbs	Help List Display Add DELete

VERB START Rex

Impact	Service
Description	start [-card(<cardToTest>)] rex This command is used to start manual REX execution. If no option is specified, only shelf level prechecks will be executed. If the -card() option is specified, REX will perform full testing on the specified card which include running shelf level prechecks, card prechecks, card tests, card postchecks, and shelf postchecks. If the specified card is an active card, no REX testing is performed. REX testing can only be invoked on a standby card or any load sharing card. Examples: start rex start -card(fabricX) rex start -card(2) rex

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VERB STOP Rex

Impact	Service
Description	stop rex This command is used to stop either manual or automatic REX testing currently running.

VERB QUERY Rex

Impact	Service
Description	query rex This command is used to query REX for complete operational and provisional details.

GROUP Rex Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes under the REX component.
Mib	Rex

ATTRIBUTE Rex enable

Access	Read: Service Write: Service
Description	This attribute specifies if REX is enabled on the shelf.
Mib	Rex
Values	no yes
Default	yes

ATTRIBUTE Rex solutionType

Access	Read: Service Write: Service
Description	This attribute specifies the solution type of prechecks, card tests, and postchecks to use for REX testing.
Mib	Rex
Values	ptIp ptIpGe ptAal1 ptAal2 uaIp uaIpGe

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uaAal1
uaAal2
chs
none
default1
default2

Default none

GROUP Rex Operational (Oper)

Properties Operational

Description This group contains the operational attributes for the REX component.

Mib Rex

ATTRIBUTE Rex currentState

Access Read only

Description This attribute indicates the current state of the REX tool:
uninitialized - REX is not enabled
idle - REX is enabled, but not running
precheck - performing precheck
testingFabricX - tetsing fabric X
testingFabricY - testing fabric Y
testingCard0 - testing card 0
testingCard1 - testing card 1
testingCard2 - testing card 2
testingCard3 - testing card 3
testingCard4 - testing card 4
testingCard5 - testing card 5
testingCard6 - testing card 6
testingCard7 - testing card 7
testingCard8 - testing card 8
testingCard9 - testing card 9
testingCard10 - testing card 10
testingCard11 - testing card 11
testingCard12 - testing card 12
testingCard13 - testing card 13
testingCard14 - testing card 14
testingCard15 - testing card 15
postcheck - performing postcheck
stopping - REX manually stopped and is cleaning up

Mib Rex

Values uninitialized
idle
configCheck
precheck
testingFabricX
testingFabricY

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	testingCard0 testingCard1 testingCard2 testingCard3 testingCard4 testingCard5 testingCard6 testingCard7 testingCard8 testingCard9 testingCard10 testingCard11 testingCard12 testingCard13 testingCard14 testingCard15 postcheck stopping
Default	uninitialized

GROUP Rex LastResults (Last)

Properties	Operational
Description	This group contains the last result attributes for the REX component.
Mib	Rex

ATTRIBUTE Rex lastTestResult

Access	Read only
Description	This attribute indicates the test result from the last REX execution.
Mib	Rex
Values	pass fail notapplicable
Default	No default

ATTRIBUTE Rex lastStartTime

Access	Read only
Description	This attribute indicates the start time for the last REX execution.
Mib	Rex
Values	Time (DHMS)
Default	No default

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ATTRIBUTE Rex lastStopTime

Access	Read only
Description	This attribute indicates the stop time for the last REX execution.
Mib	Rex
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rex lastInvokeType

Access	Read only
Description	This attribute indicates the mode that REX excution occurred last time. The invoke types are: manual - REX manually invoked with the START REX command auto - REX ran automatically due to provisioned schedule notapplicable - REX test not yet invoked.
Mib	Rex
Values	manual auto notapplicable
Default	No default

ATTRIBUTE Rex cardsTested

Access	Read only
Description	This attribute indicates the list of the cards that succesfully passed the last REX test.
Mib	Rex
List of	The name of the component
List Size	16
Default	No default

COMPONENT Rex DayOfWeek (Dow)

Instance	sun mon tue wed thu fri sat
Groups	GROUP Rex Dow Provisioned (Prov)

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Scope	Device
Description	*Rex DayOfWeek/<sun, mon, tue, wed, thu, fri, sat>* Each instance of the component represents a day of the week starting with Sunday (sun).
Mib	Rex
Common Verbs	Help List Display

GROUP Rex Dow Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Rex DayOfWeek/n component.
Mib	Rex

ATTRIBUTE Rex Dow rexScheduled

Access	Read: Service Write: Service
Description	This attribute specifies if REX is scheduled to run on this day of the week.
Mib	Rex
Values	no yes
Default	yes

ATTRIBUTE Rex Dow startTime

Access	Read: Service Write: Service
Description	This attribute specifies the time to begin REX automatic testing for this day of the week.
Mib	Rex
Values	Time (HM)
Default	02:00

ATTRIBUTE Rex Dow stopTime

Access	Read: Service Write: Service
Description	This attribute specifies the time to stop REX automatic testing for this day of the week.

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Mib	Rex
Values	Time (HM)
Default	04:30

ATTRIBUTE Rex Dow cardPairsToTest

Access	Read: Service Write: Service
Description	This attribute specifies the set of card pairs to test for this day of the week.
Mib	Rex
List of	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 fabricCards
List Size	17
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Rex

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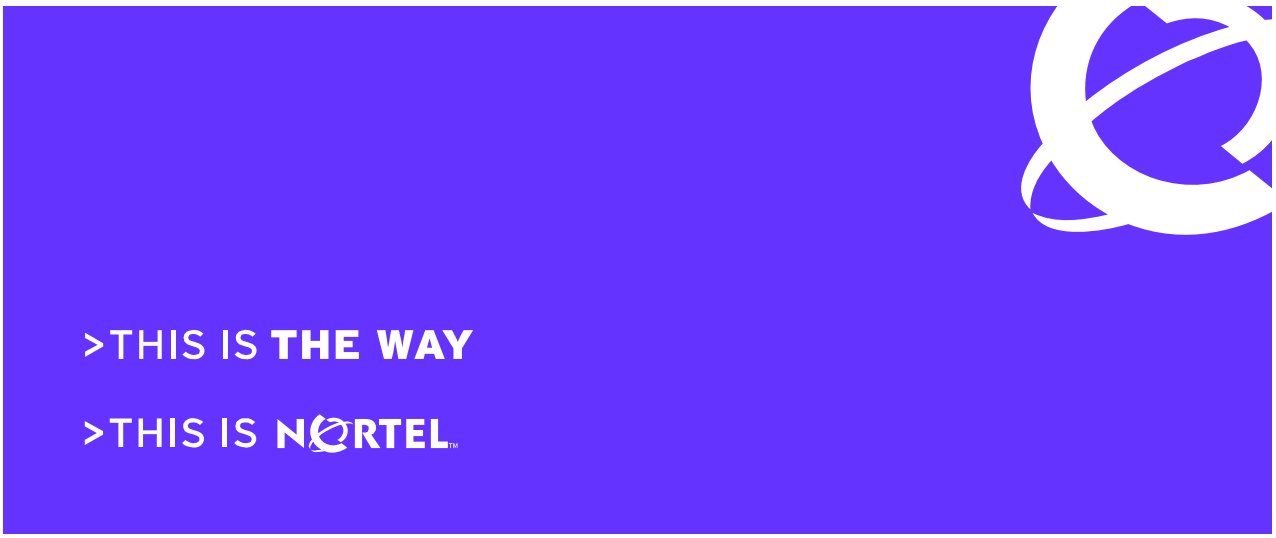

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - RGty

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COMPONENT RoutingGateway (RGty)

Instance	Decimal (0..4294967295)
Groups	GROUP RGty OsiState (State) GROUP RGty Prov (Prov) GROUP RGty Oper (Oper) GROUP RGty CustomerIdentifierData (CidData)
Scope	Network
Description	*RoutingGateway/n* This component must be provisioned on nodes where calls cross boundaries between topology regions. It must also be provisioned on nodes where calls cross boundaries between cluster and non-cluster nodes. A *RGty* is responsible for bridging calls across these boundaries. A *RGty* upon the receipt of a call setup message terminates the existing segment of the call coming from the direction of its source and originates a new path segment of the call towards its destination. This means that each call handled by the *RGty* consists of two segments: one leading to the source of the call and the other leading to the destination of the call. The *RGty* may be provisioned on one or more logical processors (*Lp*s). If an *RGty* is provisioned on a single *Lp*, all calls bridged across the above mentioned boundaries through this node will have their path segments terminated and originated on this *Lp*. If a single *Lp* does not have sufficient capacity to bridge all of the calls then multiple *RGty*s may be provisioned on multiple *Lp*s and the calls will be equally shared among all the *RGty*s. For more information as to which *Lp* to choose for the *RGty,* or for

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information as to how many *RGty*s should be provisioned on a node please refer to the Engineering Guidelines.

Mib	RoutingGateway
Dyn. Subcomp.	COMPONENT RGty Call (Call)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP RGty OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	RoutingGateway

ATTRIBUTE RGty adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	RoutingGateway

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE RGty operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	RoutingGateway
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE RGty usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	RoutingGateway
Values	idle active (activ) busy
Default	idle

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ATTRIBUTE RGty availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	RoutingGateway
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE RGty proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	RoutingGateway
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE RGty controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	RoutingGateway
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE RGty alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	RoutingGateway
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE RGty standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	RoutingGateway
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE RGty unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	RoutingGateway
Values	false true
Default	false

GROUP RGty Prov (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes of the *RGty*.
Mib	RoutingGateway

ATTRIBUTE RGty logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies a logical processor (*Lp*) on which the *RGty* resides. The *RGty* may reside on any *Lp* simply by pointing this attribute to the *Lp/n* component. Only one *RGty* may reside on an *Lp*. For more information as to which *Lp* to choose for the *RGty,* or for information as to how many *RGty*s should be provisioned on a node please refer to the Engineering Guidelines.
Mib	RoutingGateway
Values	Link (Hardware, linkToApplications)
Default	No default

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ATTRIBUTE RGty maxCalls (maxc)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of calls that the *RGty* can handle, thus the attribute is used to limit resource (CPU and memory) usage by the *RGty*. The attribute is also used to control the spreading of calls among multiple *RGty*s. When a call needs to cross a topology region or cluster boundary, the *RGty* selected to handle the call is the one which has the smallest ratio of *currentCalls* to *maxCalls*. For example, assume there are two *RGty*s, first with *currentCalls* = 1 and *maxCalls* = 10, second with *currentCalls* = 1 and *maxCalls* = 100. New calls will go to the second *RGty* until it has *currentCalls* = 11 at which time the first *RGty* will take one call giving it the ratio of 2 *currentCalls* to 10 *maxCalls*. Then, 10 more calls will go to the second *RGty* and the next call to the first *RGty*, and so on. Note that the spreading algorithm is approximate and does not yield exact results due to latency in the delivery and caching of the required distributed data. It is important to note that this attribute does not guarantee enough resources are available to handle the maximum number of calls. It simply guarantees that no more than the maximum number of calls will be handled by the *RGty*.
Mib	RoutingGateway
Values	Decimal (0..1000)
Default	100

GROUP RGty Oper (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *RGty*.
Mib	RoutingGateway

ATTRIBUTE RGty currentCalls (curc)

Access	Read only
Description	This attribute indicates the number of calls that the *RGty* is currently handling. Note that *currentCalls* may exceed *maxCalls* when *maxCalls* was decreased at the time when the *RGty* had *currentCalls* greater than the new *maxCalls*. For example, if the *RGty* has *currentCalls* = 70 and *maxCalls* = 100 when *maxCalls* is decreased to 50 then until 20 calls are cleared *currentCalls* will be greater than *maxCalls*.
Mib	RoutingGateway
Values	Decimal (0..65535)

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Default	No default

ATTRIBUTE RGty setupFromGateway (sfg)

Access	Read only
Description	This attribute counts the call setup messages that the *RGty* has received across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty setupToGateway (stg)

Access	Read only
Description	This attribute counts the call setup messages that the *RGty* has sent across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty connectFromGateway (cfg)

Access	Read only
Description	This attribute counts the call connect messages that the *RGty* has received across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty connectToGateway (ctg)

Access	Read only
Description	This attribute counts the call connect messages that the *RGty* has sent across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty releaseFromGateway (rfg)

Access	Read only
Description	This attribute counts the call release messages that the *RGty* has received across the topology region or cluster boundary.

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Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty releaseToGateway (rtg)

Access	Read only
Description	This attribute counts the call release messages that the *RGty* has sent across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty rerouteFromGateway (rrfg)

Access	Read only
Description	This attribute counts the Nortel Networks proprietary reroute messages that the *RGty* has received across the topology region or cluster boundary. This reflects the number of times a call handled by the *RGty* has been moved from one boundary (inter-region or cluster) link to another. The call is moved as a result of a successful reroute due to link failure, or as a result of call balancing or optimization occurring on the local node or node across the boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty rerouteToGateway (rrtg)

Access	Read only
Description	This attribute counts the Nortel Networks proprietary reroute messages that the *RGty* has sent across the topology region or cluster boundary. This reflects the number of times a call handled by the *RGty* has been moved from one path to another within the *RGty*'s topology region or cluster. The call is moved as a result of a successful reroute due to a link failure within the *RGty*'s topology region or cluster, or as a result of call balancing or optimization occurring within this region or cluster.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty failedCallAttempts (fc)

Access	Read only

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Description	This attribute counts the calls handled by the *RGty* that have failed during their establishment phase (setup and connect).
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty localResourceExhaustionReleases (lr)

Access	Read only
Description	This attribute counts the call release messages that the *RGty* has generated due to a lack of resources required to process a call setup or connect message.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty lastFailedAttemptCalledAddress (fcda)

Access	Read only
Description	This attribute indicates the final destination NSAP address of the last call handled by the *RGty* which failed in its establishment phase. An empty string implies that there has been no call establishment failure so far.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE RGty lastFailedAttemptCallingAddress (fcca)

Access	Read only
Description	This attribute indicates the initial source NSAP address of the last call handled by the *RGty* which failed in its establishment phase. An empty string implies that there has been no call establishment failure so far.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE RGty lastFailedAttemptReleaseCause (fcrc)

Access	Read only
Description	This attribute indicates the Q.2931 release cause for the last call handled by the *RGty* which failed in its establishment phase. A value of 0 implies that there has been no call establishment failure so far. The most common release causes are as follows:

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3 = No Route To Destination, (routing system cannot get there)
17 = User Busy, (called party already has a call up)
18 = No User Response, (called party not responding)
21 = Call Rejected, (called party not accepting call)
37 = Cell Rate Unavailable (network congestion upstream)
41 = Temporary Failure (upstream card failure, etc.)
45 = No VPI VCI Available (got route but no B/W or VCC upstream)
47 = Resource Unavailable (got route but no resources upstream)
88 = Incompatible destination (called party not compatible)
102 = Timer Recovery (control or data congestion upstream)

Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty lastFailedAttemptReleaseDiag (fcrd)

Access	Read only
Description	This attribute indicates the Q.2931 release diagnostic for the last call handled by the *RGty* which failed in its establishment phase. An empty string implies that there has been no call establishment failure so far.
Mib	RoutingGateway
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE RGty lastFailedAttemptTime (fct)

Access	Read only
Description	This attribute indicates the time at which the *RGty* processed the last call that failed in its establishment phase. If no call establishment failures have occurred then it gives the time the *RGty* was created.
Mib	RoutingGateway
Values	Time (DHMS)
Default	No default

GROUP RGty CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	RoutingGateway

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ATTRIBUTE RGty customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	RoutingGateway
Values	Decimal (0; 1..8191)
Default	0

COMPONENT RGty Call (Call)

Instance	Decimal (0..65534)
Groups	GROUP RGty Call Oper (Oper)
Scope	Network
Description	*RGty/n Call/n* This component represents a call from source to destination that is handled by the *RGty*. The *RGty* upon the receipt of a call setup message terminates the existing path segment of the call coming from the direction of its source and originates a new path segment of the call towards the destination. This means that each *RGtyCall* consists of two path segments: one leading to the source of the call and the other leading to the destination of the call.
Mib	RoutingGateway
Dyn. Subcomp.	COMPONENT RGty Call Segment (Seg)
Common Verbs	Help List Display

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VERB CLEAR RGty Call

Impact	Service
Description	Clearing a *RoutingGatewayCall* causes the termination of the entire call handled by *RGty*. That is, path segments leading to both the source and destinaiton are terminated.

GROUP RGty Call **Oper (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *RGtyCall*.
Mib	RoutingGateway

ATTRIBUTE RGty Call **stateToSource (sts)**

Access	Read only
Description	This attribute indicates the current state of the path segment of the *RGtyCall* leading towards the source of the call. See the *state* attribute of *RGtyCallSegment* component for more details.
Mib	RoutingGateway
Values	String (0..30, ASCII)
Default	No default

ATTRIBUTE RGty Call **stateToDestination (std)**

Access	Read only
Description	This attribute indicates the current state of the path segment of the *RGtyCall* leading towards the destination of the call. See the *state* attribute of *RGtyCallSegment* component for more details.
Mib	RoutingGateway
Values	String (0..30, ASCII)
Default	No default

ATTRIBUTE RGty Call **calledAddress (cda)**

Access	Read only
Description	This attribute indicates the final destination NSAP address of the *RGtyCall*.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	No default

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ATTRIBUTE RGty Call callingAddress (cga)

Access	Read only
Description	This attribute indicates the initial source NSAP address of the *RGtyCall*.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	No default

COMPONENT RGty Call Segment (Seg)

Instance	toSource (s) toDestination (d)
Groups	GROUP RGty Call Seg Oper (Oper)
Scope	Network
Description	*RGty/n Call/n Segment/n* This component represents one of the two path segments of the call handled by the *RGty*: the one leading to the source of the call or the one leading to the destination of the call. Under each *RGtyCallSegment* is the *LogicalConnection* component for the routing system which is responsible for the management of that path segment.
Mib	RoutingGateway
Dyn. Subcomp.	COMPONENT RGty Call Seg AtmConnection (AtmCon) COMPONENT RGty Call Seg LogicalConnection (LCo)
Common Verbs	Help List Display

GROUP RGty Call Seg Oper (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *RGtyCallSegment*.
Mib	RoutingGateway

ATTRIBUTE RGty Call Seg state (st)

Access	Read only
Description	This attribute indicates the current state of the *RGtyCallSegment*. VALUES AND DESCRIPTIONS OF THESE STATES ARE STILL TO BE DETERMINED.
Mib	RoutingGateway
Values	String (0..15, ASCII)

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Default	No default

COMPONENT RGty Call Seg AtmConnection (AtmCon)

Groups	GROUP RGty Call Seg AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	RoutingGateway
Common Verbs	Help List Display

GROUP RGty Call Seg AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	RoutingGateway

ATTRIBUTE RGty Call Seg AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	RoutingGateway
Values	The name of the component
Default	No default

COMPONENT RGty Call Seg LogicalConnection (LCo)

Groups	GROUP RGty Call Seg LCo PathData GROUP RGty Call Seg LCo Statistics (Stats)
Scope	Application
Description	*...Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	RoutingGateway
Common Verbs	Help List Display

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VERB REROute RGty Call Seg LCo

Impact	Service
Description	REROute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *REROute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP RGty Call Seg LCo **PathData**

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	RoutingGateway

ATTRIBUTE RGty Call Seg LCo **state**

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	RoutingGateway
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

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ATTRIBUTE RGty Call Seg LCo **overrideRemoteName (orn)**

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE RGty Call Seg LCo **end**

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	RoutingGateway
Values	calling called
Default	No default

ATTRIBUTE RGty Call Seg LCo **costMetric (cost)**

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty Call Seg LCo **delayMetric (delay)**

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.

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Mib	RoutingGateway
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE RGty Call Seg LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	RoutingGateway
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE RGty Call Seg LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	RoutingGateway
Values	Decimal (0..4)
Default	No default

ATTRIBUTE RGty Call Seg LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.

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Mib	RoutingGateway
Values	Decimal (0..4)
Default	No default

ATTRIBUTE RGty Call Seg LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	RoutingGateway
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE RGty Call Seg LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	RoutingGateway
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE RGty Call Seg LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.
Mib	RoutingGateway

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Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE RGty Call Seg LCo **permittedTrunkTypes (pttyp)**

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	RoutingGateway
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE RGty Call Seg LCo **requiredSecurity (rsec)**

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	RoutingGateway
Values	Decimal (0..7)
Default	No default

ATTRIBUTE RGty Call Seg LCo **requiredCustomerParameter (rcparm)**

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Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	RoutingGateway
Values	Decimal (0..7)
Default	No default

ATTRIBUTE RGty Call Seg LCo **emissionPriority (epri)**

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority*. *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	RoutingGateway
Values	Decimal (0..2)
Default	No default

ATTRIBUTE RGty Call Seg LCo **discardPriority (dpri)**

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority*. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	RoutingGateway
Values	Decimal (1..3)
Default	No default

ATTRIBUTE RGty Call Seg LCo **pathType (pType)**

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected

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automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs).

The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.

Mib — RoutingGateway

Values
normal
manual
forced

Default — No default

ATTRIBUTE RGty Call Seg LCo **retryCount (rcount)**

Access — Read only

Description — This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology.
This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.

Mib — RoutingGateway

Values — Decimal (0..255)

Default — No default

ATTRIBUTE RGty Call Seg LCo **pathFailureCount (pfcount)**

Access — Read only

Description — This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.

Mib — RoutingGateway

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Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty Call Seg LCo **reasonForNoRoute (rnr)**

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	RoutingGateway
Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE RGty Call Seg LCo **lastTearDownReason**

Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up. ***normalShutDown*** - This path has gone down due to normal call termination. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.

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insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component

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did not specify the same mode.

Mib	RoutingGateway
Values	none normalShutDown insufficientTxLcOrBandwidth insufficientRxLcOrBandwidth trunkFailure trunkCardFailure operatorForced lostLcnClash networkCongestion trunkNotFound farEndNotFound wrongModuleReached farEndBusy callLoopedBack unknownReason farEndNotReady remoteNameMismatch serviceTypeMismatch reconnectFromFarEnd bumped accessCardFailure optimized overrideRemoteName trunkOrFarEndDidNotSupportMode
Default	none

ATTRIBUTE RGty Call Seg LCo **pathFailureAction**

Access	Read only
Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends

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Mib	RoutingGateway
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE RGty Call Seg LCo **bumpPreference (bpref)**

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority.* A connection may also always bump in order to obtain the best route.
Mib	RoutingGateway
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE RGty Call Seg LCo **optimization (opt)**

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	RoutingGateway
Values	disabled enabled
Default	No default

ATTRIBUTE RGty Call Seg LCo **pathUpDateTime**

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	RoutingGateway
Values	Time (DHMS)
Default	No default

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ATTRIBUTE RGty Call Seg LCo **path**

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	RoutingGateway
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP RGty Call Seg LCo **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	RoutingGateway

ATTRIBUTE RGty Call Seg LCo **pktsToNetwork**

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	RoutingGateway
Values	Long Integer
Default	No default

ATTRIBUTE RGty Call Seg LCo **bytesToNetwork**

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	RoutingGateway
Values	Long Integer
Default	No default

ATTRIBUTE RGty Call Seg LCo **pktsFromNetwork**

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	RoutingGateway

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Values	Long Integer
Default	No default

ATTRIBUTE RGty Call Seg LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	RoutingGateway
Values	Long Integer
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - RGty

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Job function: Product Fundamentals
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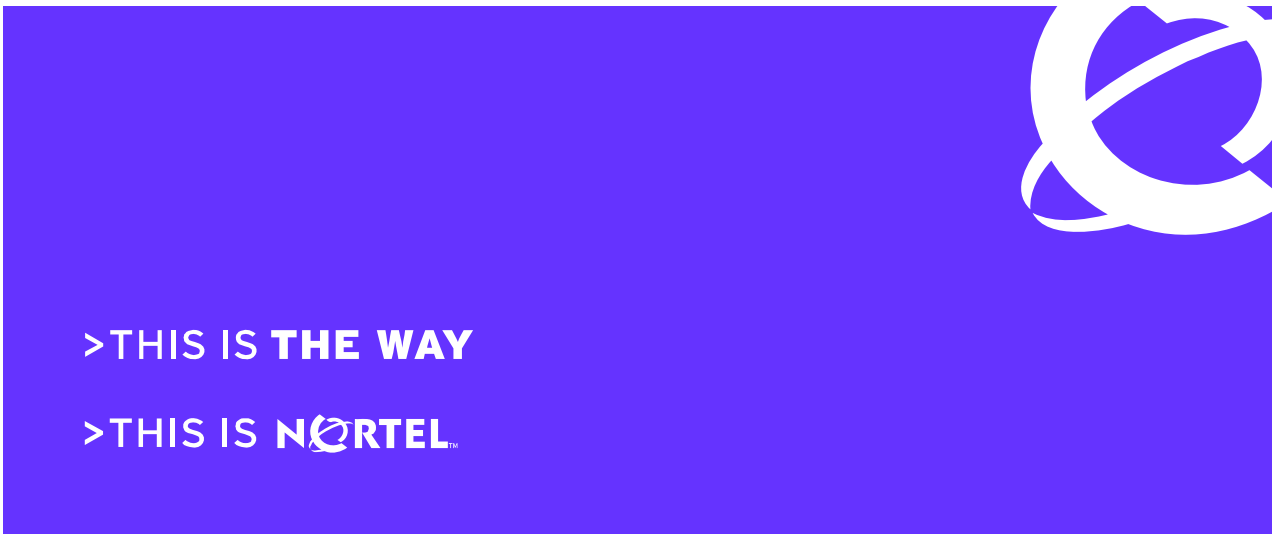

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - RncIn

NN10600-060

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COMPONENT RncInterfaceNode (RncIn)

Groups	GROUP RncIn Provisioned (Prov) GROUP RncIn OsiState (State)
Scope	Network
Description	*RncInterfaceNode* This component represents system level information related to a passport configured either as a classic I-Node in an RNC or as a RNC Compact.
Mib	no_mib
Common Verbs	Help List Display

GROUP RncIn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes of the *RncInterfaceNode* component.
Mib	no_mib

ATTRIBUTE RncIn primaryOmuIpAddress (priOmuAddr)

Access	Read: All Write: All
Description	This attribute specifies the IP address of the primary Omu in the Control Node. This IP address is used to establish a link between the I-Node and the C-Node in the RNC. This address must be the same as the C-Node primary OmuIP address configured in the CT-2000. If the value of this attribute is changed, the Master and Standby APs must be reset after the *Activate Prov* command has completed.
Mib	no_mib
Values	IP address
Default	No default

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ATTRIBUTE RncIn secondaryOmuIpAddress (secOmuAddr)

Access	Read: All Write: All
Description	This attribute specifies the Ip Address of the secondary Omu in the Control Node. This attribute is used to establish a link between the I-Node and the C-Node in the case where the primary Omu is not active. This address must be the same as the secondary OMU IP address configured in the CT-2000. If the value of this attribute is changed, the Master and Standby APs must be reset after the *Activate Prov* command has completed.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE RncIn protocolConverterResources (pcRes)

Access	Read: All Write: All
Description	This value represents the percentage of processing resources for Protocol Converters (PC). When this value increases, more resources will be devoted to Protocol converters. When this value decreases, more resources will be devoted to Radio Access Bearer services. If you change this value, the new value takes effect as new processing resources come into service. To force the new percentage to be effective immediately, either reset the whole shelf or enough processing resources. The processing resources for protocol converters will be allocated based on the nearest percentage possible to the specified one.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	17

ATTRIBUTE RncIn mode (mode)

Access	Read: All Write: All
Criticality	Module
Description	This attribute specifies the mode of RNC configuration. A value of *InodeClassic* indicates a normal Classic configuration. A value of *RncCompact* indicates a complete RNC Compact configuration.
Mib	no_mib
Values	inodeClassic rncCompact

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Default	inodeClassic

GROUP RncIn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE RncIn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE RncIn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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	with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE RncIn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - RncIn

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Rsa

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COMPONENT RemoteServerAgent (Rsa)

Instance	String (1..8, ASCII)
Groups	GROUP Rsa Options GROUP Rsa OsiState (State) GROUP Rsa Operational
Scope	Network
Description	*RemoteServerAgent/<string>* The *Rsa* component provides external applications access to Nortel Networks Multiservice Switch servers via a Frame Relay SVC connection. The *Rsa* component can be provisioned on any node in the network. Multiple *Rsa* components can be provisioned for load sharing and/or backup purposes. The component instance value is a unique string within the node.
Mib	ServerAccessRsa
Subcomponents	COMPONENT Rsa DataNetworkAddress (Dna)
Opt. Subcomp.	COMPONENT Rsa VncsAccess
Dyn. Subcomp.	COMPONENT Rsa Connection
Common Verbs	Help List Display Add DELete

GROUP Rsa Options

Properties	Provisioned
Description	The *Options* group defines provisionable attributes associated with the *Rsa* component.
Mib	ServerAccessRsa

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ATTRIBUTE Rsa logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the RSA process will execute.
Mib	ServerAccessRsa
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP Rsa OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	ServerAccessRsa

ATTRIBUTE Rsa adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	ServerAccessRsa
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Rsa operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	ServerAccessRsa
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rsa usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	ServerAccessRsa
Values	idle active (activ) busy
Default	idle

GROUP Rsa Operational

Properties	Operational
Description	The *Operational* group defines operational attributes associated with the *Rsa* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa maxRsiConnections

Access	Read only

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Description	This attribute specifies the maximum number of RSI connections which can be supported by this *Rsa*.
Mib	ServerAccessRsa
Values	Decimal (1000)
Default	No default

ATTRIBUTE Rsa rsiConnections

Access	Read only
Description	This attribute specifies the number of active RSI connections currently supported by the *Rsa* component.
Mib	ServerAccessRsa
Values	Decimal (0..1000)
Default	No default

COMPONENT Rsa DataNetworkAddress (Dna)

Groups	GROUP Rsa Dna Address GROUP Rsa Dna OutgoingOptions GROUP Rsa Dna IncomingOptions
Scope	Network
Description	*Rsa/n DataNetworkAddress* This is the description of the Remote Server Agent *Dna* component. It includes the attributes which apply to a VC between the RSI and RSA.
Mib	ServerAccessRsa
Opt. Subcomp.	COMPONENT Rsa Dna ClosedUserGroup (Cug)
Common Verbs	Help List Display

GROUP Rsa Dna Address

Properties	Provisioned
Description	The *Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. The string of address digits is complemented by the type of address or Npi. These attributes are used to interpret the format of the address digits.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Dna numberingPlanIndicator (npi)

Access	Read and write

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Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. An address may belong to the X.121 or E.164 numbering plans. X.121 is used in packet switched data networks.
Mib	ServerAccessRsa
Values	x121 e164
Default	x121

ATTRIBUTE Rsa Dna dataNetworkAddress (dna)

Access	Read and write
Description	The *Dna* attribute contains digits which form a unique identifier of the customer interface. It can be compared (approximation only) to a telephone number where each phone number identifies a unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	ServerAccessRsa
Values	BCD (1..15)
Default	No default

GROUP Rsa Dna OutgoingOptions

Properties	Provisioned
Description	The *OutgoingOptions* group defines call options of a *Dna* for calls which are made out of the interface represented by the *Dna*. These options are not used for calls arriving to the interface represented by the *Dna*.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Dna outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) can be made using this particular *D*na. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for *Dnas* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	disallowed

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GROUP Rsa Dna IncomingOptions

Properties	Provisioned
Description	*IncomingOptions* defines the set of options for incoming calls. These options are used for calls arriving to the interface represented by the *Dna*. For calls originated from the interface, *IncomingOptions* attributes are not used.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Dna incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	allowed

ATTRIBUTE Rsa Dna incAccess (ina)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTEs that have Outgoing Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Incoming Access' feature for *Dnas* in that incoming access is granted if this attribute is set to a value of ***allowed***.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	disallowed

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COMPONENT Rsa Dna ClosedUserGroup (Cug)

Instance	Decimal (0..255)
Groups	GROUP Rsa Dna Cug CugOptions
Scope	Network
Description	*Rsa/n Dna ClosedUserGroup* *ClosedUserGroup* defines options associated with a national or international CUG identifier. Other *Dna*s in the network can have *Cug*s defined which group these *Dna*s by *Cug interlockCode*. If *Dna*s are defined with *Cugs*, calls from *Dna*s which do not have the same *interlockCode* defined are refused. Attributes *incAccess* and *outAccess* can override this rule.
Mib	ServerAccessRsa
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rsa Dna Cug CugOptions

Properties	Provisioned
Description	Attributes in this group define *ClosedUserGroup* options associated with this particular *interlockCode*. *Dna's* with the same *Cug* (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same *Cug* group are defined here.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Dna Cug type

Access	Read and write
Description	This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTEs for which there is no X.75 Gateway between. (National CUGs cannot normally traverse an X.75 Gateway). If this attribute is set to ***national***, then the CUG is a national CUG, in which case, the *dnic* should be left at its default value since it is not part of a national CUG. If this attribute is set to ***international***, then the CUG is an international CUG, in which case, the *dnic* should be set appropriately as part of the *Cug interlockCode*.
Mib	ServerAccessRsa

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Values	national international
Default	national

ATTRIBUTE Rsa Dna Cug dnic

Access	Read and write
Description	This attribute specifies the DNIC (Data Network ID Code) of the CUG by which packet networks are identified. This attribute is not applicable if the CUG is a national CUG, as specified by the Cug *type* attribute. There are usually one or two DNICs assigned per country, for public networks. The U.S. is an exception where each BOC has a DNIC. Also, a group of private networks can have its own DNIC. The DNIC is assigned by international agreement and controlled by ITU-T.
Mib	ServerAccessRsa
Values	BCD (4)
Default	0000

ATTRIBUTE Rsa Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the *Cug* identifier of a national or international *Cug* call. It is an arbitrary number and it also can be called Cug in some descriptions. Interfaces (DNAs) defined with this number can make calls to DNAs with the same *interlockCode*.
Mib	ServerAccessRsa
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rsa Dna Cug preferential (pre)

Access	Read only
Description	This attribute, if set to ***yes*** indicates that this *Cug* is the preferential *Cug*, in which case it will be used during the call establishment phase if the DTE has not explicitly specified a *Cug* index in the call request packet. If set to ***no***, then this *Cug* is not the preferential *Cug*. Only one of the *Cugs* associated with a particular *Dna* can be the preferential *Cug* - only one *Cug* can have this attribute set to ***yes***.
Mib	ServerAccessRsa
Values	no yes
Default	no

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ATTRIBUTE Rsa Dna Cug outCalls (ouc)

Access	Read only
Description	This attribute, if set to ***allowed*** indicates that outgoing calls (from the DTE into the network) can be made using this particular *Cug*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for *Cugs* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Rsa Dna Cug incCalls (inc)

Access	Read only
Description	This attribute, if set to ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular *Cug*. If set to ***disallowed***, then incoming calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for *Cugs* in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	allowed

ATTRIBUTE Rsa Dna Cug privileged (pri)

Access	Read only
Description	This attribute, if set to ***yes*** indicates that this *Cug* is a privileged *Cug*. In DPN, at least one side of a call setup within a *Cug* must have the *Cug* as a privileged *Cug*. If set to ***no***, then the *Cug* is not privileged. If both the local DTE and the remote DTE subscribe to the *Cug*, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTEs in which case the other DTEs cannot call one another, but can call the host. In this example, the host would have the privileged *Cug*, and the other DTEs would belong to the same *Cug*, but it would not be privileged.
Mib	ServerAccessRsa
Values	no yes

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Default	yes

COMPONENT Rsa VncsAccess

Groups	GROUP Rsa VncsAccess Provisioned GROUP Rsa VncsAccess OsiState (State) GROUP Rsa VncsAccess Operational
Scope	Network
Description	*Rsa/<string> VncsAccess* The *VncsAccess* component provides access to the Nortel Networks Multiservice Switch Voice Networking Call Server.
Mib	ServerAccessRsa
Common Verbs	Help List Display Add DELete

GROUP Rsa VncsAccess Provisioned

Properties	Provisioned
Description	The *Provisioned* group defines provisioned attributes associated with the *VncsAccess* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa VncsAccess timeToLive

Access	Read and write
Description	This attribute specifies the length of time VNCS requests are allowed to remain queued for transmission before they are considered too old and are discarded. This attribute should be set in consideration with the voice application time-out interval.
Mib	ServerAccessRsa
Values	Decimal (1..5)
Units	seconds
Default	2

GROUP Rsa VncsAccess OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For

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component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — ServerAccessRsa

ATTRIBUTE Rsa VncsAccess adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — ServerAccessRsa

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Rsa VncsAccess operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — ServerAccessRsa

Values — enabled (ena)
disabled (dis)

Default — disabled

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ATTRIBUTE Rsa VncsAccess usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	ServerAccessRsa
Values	idle active (activ) busy
Default	idle

GROUP Rsa VncsAccess Operational

Properties	Operational
Description	The *Operational* group defines operational attributes associated with the *VncsAccess* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa VncsAccess requestsSent (sent)

Access	Read only
Description	This attribute counts the number of translation requests sent to VNCS. This counter wraps to zero when it reaches its maximum value.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rsa VncsAccess repliesReceived (received)

Access	Read only
Description	This attribute counts the number of translation replies received from VNCS. This counter wraps to zero when it reaches its maximum value.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rsa VncsAccess requestsQueued (queued)

Access	Read only
Description	This attribute indicates the number of translation requests queued for transmission to VNCS.
Mib	ServerAccessRsa
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rsa VncsAccess requestsDiscarded (discarded)

Access	Read only
Description	This attribute counts the number of translation requests discarded before being sent to VNCS. Requests are discarded if the queue becomes too large or the VNCS server is unavailable. This counter wraps to zero when it reaches its maximum value.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rsa Connection

Instance	Decimal (1..1000)
Groups	GROUP Rsa Connection Operational GROUP Rsa Connection ServerStatistics (ServerStats) GROUP Rsa Connection LapfStatus (LapfStatus) GROUP Rsa Connection LapfStatistics (LapfStats)
Scope	Network
Description	*Rsa/<string> Connection/n* *Rsi Connection/n* The *Connection* component contains information relating to the connection between the RSA and RSI. This component is named by the logical channel number of the connection.
Mib	ServerAccessRsa
Dyn. Subcomp.	COMPONENT Rsa Connection Vc
Common Verbs	Help List Display

GROUP Rsa Connection Operational

Properties	Operational

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Description	The *Operational* group defines operational attributes associated with the *Connection* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection remoteName

Access	Read only
Description	This attribute specifies an ASCII string identifier for the remote module which is retrieved from the call request as user data.
Mib	ServerAccessRsa
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Rsa Connection callState

Access	Read only
Description	This attribute indicates the state of the connection. The normal state for the connection is ***dataTransfer***. The other states are transient states used to setup or clear the connection.
Mib	ServerAccessRsa
Values	initializing creatingVc calling acceptingCall registeringFmo establishingLapf dataTransfer clearingCall terminating terminatingVc terminated
Default	No default

GROUP Rsa Connection ServerStatistics (ServerStats)

Properties	Operational
Description	The *ServerStatistics* group provides individual server usage statistics for the connection.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection vncsRequests

Access	Read only
Description	This attribute counts the number of VNCS translation requests sent or received on this connection.

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Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rsa Connection vncsReplies

Access	Read only
Description	This attribute counts the number of VNCS translation replies sent or received on this connection.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

GROUP Rsa Connection LapfStatus (LapfStatus)

Properties	Operational
Description	This group contains the LAPF status.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection lapfState

Access	Read only
Description	This attribute shows the current state of the LAPF interface. The normal states are ***informationTransfer*** and ***waitingAck***. Since the LAPF interface is not over a physical link the other states are transitional.
Mib	ServerAccessRsa
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE Rsa Connection lapfQueueSize

Access	Read only
Description	This attribute indicates the number of frames in the LAPF transmit queue.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

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GROUP Rsa Connection **LapfStatistics (LapfStats)**

Properties	Operational
Description	This group contains the LAPF statistics.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection **lapfStateChanges**

Access	Read only
Description	This attribute counts the number of times the LAPF interface has changed state. While the LAPF interface is in ***informationTransfer*** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from ***informationTransfer*** to ***waitingAck*** and back. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection **lapfRemoteBusy**

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection **lapfAckTimeouts**

Access	Read only
Description	This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote ends. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection **lapfRejectFramesRx**

Access	Read only

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Description	This attribute counts the number of REJ frames received. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfIFramesTx

Access	Read only
Description	This attribute counts the number of I-frames transmitted. An I-frame may be counted more than once if there are retransmissions. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfIFramesTxDiscarded

Access	Read only
Description	This attribute counts the number of transmit I-frames that have been discarded. Discard reasons may be one of the following: 1.The frame length is beyond allowed limit. 2.The LAPF interface is in ***disconnected*** state. 3.The transmit queue has been purged because the queue length has reached the reset threshold. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfIFramesRx

Access	Read only
Description	This attribute counts the number of I-frames received. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Rsa Connection lapfIFramesRxDiscarded

Access	Read only
Description	This attribute counts the number of received I-frames that have been discarded. The discard reasons are: 1.Incorrect frame size. 2.Frame is out of sequence. 3.Frame received while not in ***informationTransfer*** or ***waitingAck*** state. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rsa Connection Vc

Groups	GROUP Rsa Connection Vc CallData (Cad) GROUP Rsa Connection Vc IntervalData (Intd) GROUP Rsa Connection Vc FrameRelayData (Frd)
Scope	Application
Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	ServerAccessRsa
Common Verbs	Help List Display

VERB Ping Rsa Connection Vc

Impact	Passive
Description	Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/*<n>* Dlci/*<n>* Vc Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP. Note that this command does not provide any information regarding the

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status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control

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information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP Rsa Connection Vc **CallData (Cad)**

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection Vc **type**

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	ServerAccessRsa
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE Rsa Connection Vc **state**

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	ServerAccessRsa
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6

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	dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Rsa Connection Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	ServerAccessRsa
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Rsa Connection Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	ServerAccessRsa
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rsa Connection Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	ServerAccessRsa
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rsa Connection Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.

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Mib	ServerAccessRsa
Values	x121 e164
Default	No default

ATTRIBUTE Rsa Connection Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	ServerAccessRsa
Values	BCD (1..15)
Default	No default

ATTRIBUTE Rsa Connection Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	ServerAccessRsa
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rsa Connection Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	ServerAccessRsa
Values	x121 e164
Default	No default

ATTRIBUTE Rsa Connection Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	ServerAccessRsa
Values	BCD (1..15)
Default	No default

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ATTRIBUTE Rsa Connection Vc **callingLcn**

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	ServerAccessRsa
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rsa Connection Vc **accountingEnabled**

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	ServerAccessRsa
Values	yes no
Default	No default

ATTRIBUTE Rsa Connection Vc **fastSelectCall**

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	ServerAccessRsa
Values	yes no
Default	No default

ATTRIBUTE Rsa Connection Vc **pathReliability**

Access	Read only
Description	This attribute displays the path reliability.
Mib	ServerAccessRsa
Values	high normal
Default	No default

ATTRIBUTE Rsa Connection Vc **accountingEnd**

Access	Read only

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Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	ServerAccessRsa
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Rsa Connection Vc **priority**

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	ServerAccessRsa
Values	normal high
Default	No default

ATTRIBUTE Rsa Connection Vc **segmentSize**

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	ServerAccessRsa
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Rsa Connection Vc **maxSubnetPktSize**

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	ServerAccessRsa
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Rsa Connection Vc **rcosToNetwork (rcosto)**

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	ServerAccessRsa

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Values	throughput delay multimedia
Default	No default

ATTRIBUTE Rsa Connection Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	ServerAccessRsa
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Rsa Connection Vc emissionPriorityToNetwork (epto)

Access	Read only
Description	This attribute displays the network internal emission priority to the network.
Mib	ServerAccessRsa
Values	normal high interrupting
Default	No default

ATTRIBUTE Rsa Connection Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	ServerAccessRsa
Values	normal high interrupting
Default	No default

ATTRIBUTE Rsa Connection Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed

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value of this attribute can be different from the provisioned value.

If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system)

If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed.

If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.

Mib	ServerAccessRsa
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Rsa Connection Vc **dprsMcsEndPoint (dmep)**

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	ServerAccessRsa
List of	The name of the component
Default	No default

GROUP Rsa Connection Vc **IntervalData (Intd)**

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection Vc **elapsedTimeTillNow**

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	ServerAccessRsa
Values	Decimal (0..16777215)

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Default	No default

ATTRIBUTE Rsa Connection Vc **segmentsRx**

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	ServerAccessRsa
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Rsa Connection Vc **segmentsSent**

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	ServerAccessRsa
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Rsa Connection Vc **startTime**

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	ServerAccessRsa
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rsa Connection Vc **callReferenceNumber**

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Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

GROUP Rsa Connection Vc **FrameRelayData (Frd)**

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection Vc **frmCongestedToSubnet**

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc **cannotForwardToSubnet**

Access	Read only

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Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	ServerAccessRsa
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rsa Connection Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	ServerAccessRsa
Values	Decimal (0..5000)

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Default	No default

ATTRIBUTE Rsa Connection Vc **duplicatesFromSubnet**

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc **notDataXferFromSubnet**

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc **frmLossTimeouts**

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc **ooSeqByteCntExceeded**

Access	Read only
Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.

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Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses this statistics to set a maximum size for the out-of-sequenced queue.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	ServerAccessRsa
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rsa Connection Vc pktRetryTimeouts

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Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc **peakRetryQueueSize**

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc **subnetRecoveries**

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc **ooSeqPktCntExceeded**

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	ServerAccessRsa
Values	Decimal (0..255)
Default	No default

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ATTRIBUTE Rsa Connection Vc **peakOoSeqByteCount**

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	ServerAccessRsa
Values	Decimal (0..50000)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Rsa

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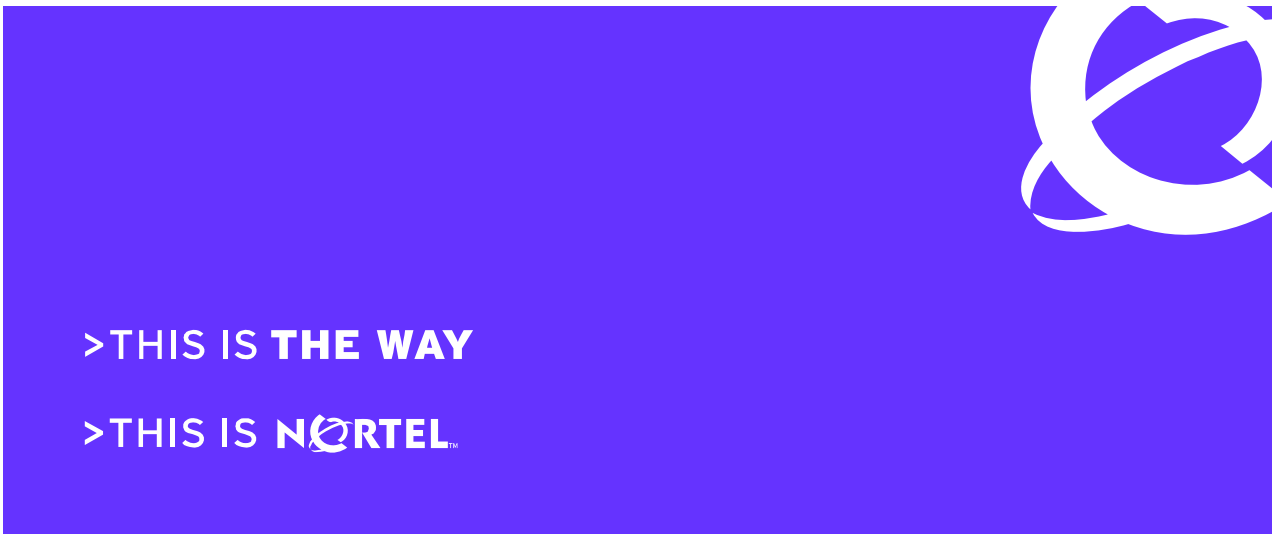

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Rtg

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COMPONENT Routing (Rtg)

Groups	GROUP Rtg Provisioned (Prov)
Scope	Network
Description	*Routing* This is the description for the *Routing* system component. This is the top level component of the routing hierarchy.
Mib	BaseRouting
Subcomponents	COMPONENT Rtg DpnAddressPlan (Dpn) COMPONENT Rtg Topology (Top)
Opt. Subcomp.	COMPONENT Rtg PathOrientedRoutingSystem (Pors) COMPONENT Rtg SummaryAddress (SumAddr)
Dyn. Subcomp.	COMPONENT Rtg RouteSelector (Rs)
Common Verbs	Help List Display Add

GROUP Rtg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the routing system.
Mib	BaseRouting

ATTRIBUTE Rtg tandemTraffic

Access	Read and write
Description	This attribute specifies whether tandem traffic is permitted through the node. Tandem traffic is traffic that arrives at the node on a trunk and leaves the node on another trunk. The default value of this attribute is ***allowed***, which permits tandem traffic to pass through the node. When this attribute is set to ***denied***, DPRS and

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PORS traffic is not permitted to tandem through the node in most circumstances.

However, there are some exceptions on DPRS gateway nodes, backbone border nodes, and cluster border nodes. For DPRS, traffic is allowed to tandem through these nodes with this attribute set to ***denied*** in the following situations:

1) On a DPRS gateway node, DPRS traffic that flows out of the subnet or enters the subnet is allowed to tandem through the node, even if this attribute is set to ***denied***. Traffic that is from one node and destined to another node in the same subnet is not allowed to tandem through the gateway node when this attribute is set to ***denied***. DPRS gateway nodes include RID gateway nodes (the nodes that are connected to another RID subnet or to DPN-100 RMs) and MID gateway nodes (the nodes that are connected to DPN-100 AM clusters).

2) On a backbone border node, DPRS traffic that is destined to either leave the backbone (to a cluster) or enter the backbone (from a cluster) is allowed to tandem through the node, even if this attribute is set to ***denied***. Traffic that is from one backbone node and destined to another backbone node in the same RID subnet is not allowed to tandem through the backbone border node when this attribute is set to ***denied***.

3) On a cluster border node, DPRS traffic that is destined to either leave the cluster (to the backbone or to another cluster) or enter the cluster is allowed to tandem through the node, even if this attribute is set to ***denied***. Intra-cluster DPRS traffic is generally not allowed to tandem through any cluster border node which has this attribute set to ***denied***. However, setting the attribute to ***denied*** on a cluster border node could cause that some nodes in the cluster become unreachable, from the source cluster node, through all paths inside the cluster. In this case, intra-cluster DPRS traffic between these nodes would be attempted to route through the default route. A cluster border node that is on the default route of a cluster node allows intra-cluster DPRS traffic to tandem through it, even if this attribute is set to ***denied***.

Changing this attribute has no effect on PORS calls that were set up before the change. These calls can be manually forced to reroute using the new setting by clearing the calls or locking the trunks on which they are routed.

Mib	BaseRouting
Values	allowed denied
Default	allowed

ATTRIBUTE Rtg clusterNode

Access	Read and write

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Description	This attribute identifies whether a node is a cluster node in a network. The default value of ***no*** indicates that this node is not a cluster node. When this attribute is provisioned to ***yes***, this node becomes a cluster node. One or more cluster nodes interconnected with each other forms a cluster. Deploying clusters in a Topology Region reduces the memory, CPU and control traffic bandwidth required to maintain the topology database in the Topology Region and thus improves network scaling. This is because only minimum routing information is exchanged between a cluster and other non-cluster nodes in a topology region. Cluster nodes are typically used to support access services. A cluster must be connected to other nodes located in the backbone of the network within the same RID subnet. It cannot be connected to nodes with different region identifiers (provisioned in the *regionId* attribute under the *ModuleData* component).
Mib	BaseRouting
Values	no yes
Default	no

ATTRIBUTE Rtg fullTopExchgOnClusterLinks (fullTopExchg)

Access	Read and write
Description	This attribute specifies whether this node wishes to exchange full topological information across its cluster-backbone links. A cluster-backbone link is a link between a cluster node and a backbone node. A cluster node has its *rtg clusterNode* attribute set to the value of ***yes***. A backbone node is a non-cluster node. If this attribute is set to the value of ***disabled*** on at least one node connected with cluster-backbone links, then only summarized topological information is propagated across those links. If this attribute is set to the value of ***enabled*** on two nodes connected with cluster-backbone links, then summarized and full topological information is propagated across those links. This attribute should only be set to the value of ***enabled*** during a clusters migration. During normal operation, this attribute should be set to the value of ***disabled*** in order to avoid accidental exchange of full topological information across the cluster-backbone boundary.
Mib	BaseRouting
Values	disabled enabled
Default	disabled

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ATTRIBUTE Rtg splittingRegionIds

Access	Read and write
Description	This attribute specifies which connected neighbor nodes, in different topology regions, are allowed to exchange topological information with this node. It should be used only when splitting or merging existing topology regions. This node only exchanges topological information with a connected node under either of the following conditions: (i) this node and the neighbor node are in the same topology region. That is, this node's *regionId* attribute and the neighbor's *regionId* attribute (under *Mod* component) are provisioned with the same value, or (ii) this node and the neighbor node are in different topology regions, and this node's *splittingRegionIds* attribute is provisioned to contain the neighbor's *regionId*, and the neighbor's *splittingRegionIds* attribute is provisioned to contain this node's *regionId*. When this attribute is used during migration of topology regions, values provisioned for the attribute are normally the old and new *regionIds* of the node. Use of this attribute makes it possible to migrate existing topology regions in the following cases: (i) splitting a topology region into two without isolating a node, and (ii) merging two different topology regions into one without introducing an extra topological barrier. The attribute should be cleared when all migration activities are complete. At this point, the region boundary takes effect.
Mib	BaseRouting
List of	Decimal (0..126)
Default	No default

COMPONENT Rtg RouteSelector (Rs)

Groups	GROUP Rtg Rs SelectedRoute GROUP Rtg Rs RouteSelectorControls (Controls) GROUP Rtg Rs PathAttributes GROUP Rtg Rs Statistics (Stats)
Scope	Application
Description	*Routing RouteSelector* This component sits directly under the *Routing* component. It is dynamically created by Routing System and thus is always present when PORS software is loaded on a node. *RouteSelector* is used by PORS services for the following purposes: - Selecting a route to a destination through the current topology region. The route may be directly to the destination node or to a gateway node through which the destination can be reached. - Returning a manual route stored as part of manual path profile. *RouteSelector* is invoked with a route request data containing one of the following:

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- Parameters which must be met by the selected route.
- Parameter profile reference where parameters which must be met by the selected route are stored.
- Manual path profile reference.

When the route request data contains a manual path profile reference then *RouteSelector* returns the manual path route associated with that reference. The manual path route is returned in the selected route description data. *RouteSelector* does not verify the manual path route.

When the route request data contains parameter profile reference then *RouteSelector* obtains route request data parameters associated with that reference and then proceeds as though the parameters were contained in the route request data.

Using the route request data parameters, *RouteSelector* uses a route selection algorithm, based on Dijkstra's Shortest-Path-First algorithm, to select the best route to the destination. That route may be directly to the destination node or to a gateway node through which the destination can be reached. The selected route must satisfy all the route request data parameters. The route selection is done against the current view of the topological database maintained by Routing Topology System of the current topology region. Once the route is selected, selected route description data is returned by *RouteSelector*.

RouteSelector can be used in two modes: automatic and manual.

In the automatic mode, a route request message containing the route request data is originated by a PORS VC and sent to *RouteSelector*. *RouteSelector* then selects a route or gets a manual route and returns its description in the selected route description data in the selected route message back to the PORS VC.

In the manual mode, *RouteSelector* allows the operator to modify the parameters in the route request data (except for the manual path profile reference), and to initiate route selection using that data. When *RouteSelector* selects the route it displays its description to the operator.

Mib PorsVc

Common Verbs
Help
List
Display

GROUP Rtg Rs SelectedRoute

Properties Operational

Description This group contains operational attributes describing the last selected or manual route returned by *RouteSelector*. These attributes form selected route description data.

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Mib	PorsVc

ATTRIBUTE Rtg Rs routeCostMetric (rcm)

Access	Read only
Description	This attribute indicates the sum of cost metrics of trunks that make up the selected route returned by *RouteSelector*. If the cost metrics at both ends of a trunk differ, the larger metric is used for that trunk. If a route could not be selected for whatever reason then the *routeCostMetric* is set to a value 999999 intended to symbolize unknown cost. For manual routes the value of *routeCostMetric* is also 999999. This is because *RouteSelector* does not verify manual routes thus *routeCostMetric* is unknown.
Mib	PorsVc
Values	Decimal (0..999999)
Default	999999

ATTRIBUTE Rtg Rs routeDelayMetric (rdm)

Access	Read only
Description	This attribute indicates the sum of delay metrics of trunks that make up the selected route returned by *RouteSelector*. The delay metric of a trunk is equal to half the *measuredRoundTripDelay* operational attribute of the trunk. If the delay metrics at both ends of a trunk differ, the larger metric is used for that trunk. If a route could not be selected for whatever reason then the *routeDelayMetric* is set to a value 999999 intended to symbolize unknown delay. For manual routes the value of *routeDelayMetric* is also 999999. This is because *RouteSelector* does not verify manual routes, thus *routeDelayMetric* is unknown.
Mib	PorsVc
Values	Decimal (0..999999)
Units	msec
Default	999999

ATTRIBUTE Rtg Rs routeBumpingPriority (rbp)

Access	Read only
Description	This attribute indicates the priority at which a route has been selected, or a value of 4 for manual routes since no route selection was made. Since *RouteSelector* does not verify manual routes the value of 4 for *routeBumpingPriority* symbolizes an unknown value for manual routes. The remainder of the description is not applicable to manual routes. The bumping priority of a route specifies a priority at which a path along that route can be established. The lowest bumping priority is 4, the highest bumping priority is equal to a setup priority contained in the route request data. If a route is selected at bumping priority 4, then no paths will be

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bumped since there appears to be enough free bandwidth on selected trunks, and also since this bumping priority is not better than the lowest holding priority (4) of any path.

If a route cannot be selected at bumping priority 4 and a setup priority is 3 or better, then a route may be selected at bumping priority 3. This means that paths at holding priority 4 may be bumped if currently there is not enough free bandwidth on selected trunks to establish the new path with setup priority 3.

If a route cannot be selected at bumping priority 3 and a setup priority is 2 or better, then a route may be selected at bumping priority 2. In this case paths with holding priority 4 and 3 may be bumped if there is not enough free bandwidth on selected trunks to establish the new path with setup priority 2.

If a route cannot be selected at bumping priority 2 and a setup priority is 1 or better, then a route may be selected at bumping priority 1. In this case paths with holding priority 4, 3, and 2 may be bumped if there is not enough free bandwidth on selected trunks to establish the new path with setup priority 1.

If a route cannot be selected at bumping priority 1 and a setup priority is 0, then a route may be selected at bumping priority 0. In this case paths with holding priority 4, 3, 2, and 1 may be bumped if there is not enough free bandwidth on selected trunks to establish the new path with setup priority 0.

Mib	PorsVc
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Rtg Rs reasonForNoRoute (rnr)

Access	Read only
Description	This attribute indicates the reason for which a route was not selected by *RouteSelector*.

If the route was selected then *reasonForNoRoute* has a value of ***none***.

If the destination in the form of ASCII name was specified (see *destination*) and the name of node is too long (more than 12 characters) then *reasonForNoRoute* has a value of ***destinationNameTooLong***. Check and correct node name in the *destination* attribute.

If the destination was not specified, that is *destination* is blank, then *reasonForNoRoute* has a value of ***destinationNotSpecified***. *Destination* attribute should not be blank.

If the destination in the form of ASCII name was specified (see

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destination) and the name of node cannot be found in topological database then *reasonForNoRoute* has a value of ***unknownDestinationName***. Check and correct node name in the *destination* attribute. If it is correct then this node does not appear in local topological database as this node may lie across the topology region or cluster boundary.

If the destination cannot be found in the topological database or cannot be reached through any gateway node then *reasonForNoRoute* has a value of ***unknownDestination***. Ensure the destination specified in *destination* attribute resides in the topology region, or can be reached through a Routing Gateway. That is, at least one reachable address provisioned under a *Trunk Address* component representing a gateway link can reach the destination NSAP address.

If the destination was specified using an incorrect format (see *destination*) then *reasonForNoRoute* has a value of ***incorrectDestination***. Use the correct format for *destination* attribute.

If there is no physical connectivity to the destination or gateway node, or number of hops to such node exceeds a limit of 20 hops, or a route to such node cannot satisfy all the parameters in the route request data then *reasonForNoRoute* has a value of ***attributeNotMet***. Set *operationMode* to ***manual*** and issue *d rtg rs* command and inspect *attributeNotMet* to determine which attribute could not be satisfied.

If the route to the destination could not be selected for some internal reason then *reasonForNoRoute* has a value of ***internalReason***. A Software Alarm generated in association with this situation should be reported to Nortel Networks technical support.

If the route to the destination could not be selected because of profile reference problem then *reasonForNoRoute* has a value of ***attributeProfileProblem***.

If the route to the destination could not be selected because of manual path reference problem then *reasonForNoRoute* has a value of ***manualPathIndexProblem***.

The following values of *reasonForNoRoute* are no longer generated: ***routeCostTooMuch***, ***routeDelayTooMuch***, ***incorrectDestinationEndPoint***, and ***sameNode***.

Mib

PorsVc

Values

none
destinationNameTooLong
destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint

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unknownSource
unknownDestination
sameNode
routeCostTooMuch
routeDelayTooLong
attributesNotMet
internalReason
attributeProfileProblem
manualPathIndexProblem

Default: none

ATTRIBUTE Rtg Rs attributeNotMet (anm)

Access: Read only

Description: This attribute indicates the name of a possible route request data parameter which prevents *RouteSelector* from selecting the route. This attribute always has a value of ***allAttributesMet*** for manual routes since *RouteSelector* does not verify manual routes. This attribute has a meaningful value if *reasonForNoRoute* attribute has a value of ***attributesNotMet***. The value of *attributeNotMet* is only computed when *RouteSelector* operates in manual mode. That is, when route selection has been initiated by the operator in which case *operationMode* has a value of ***manual***.

RouteSelector determines which of the attributes: *requiredRxBandwidth*, *requiredTxBandwidth*, *requiredTrunkModes*, *maximumAcceptableCost*, *maximumAcceptableDelay*, *maximumAcceptableGatewaCost*, *requiredTrafficType*, *permittedTrunkTypes*, *requiredSecurity*, *requiredCustomerParameter*, and *maximumTransmissionUnit* prevents successful route selection by dropping the constraints associated with that attribute and re-selecting the route. If that route can be successfully selected then the attribute for which the constraints were dropped is the attribute preventing successful route selection.

For example, *RouteSelector* drops bandwidth constraints by selecting a route with *requiredRxBandwidth* or *requiredTxBandwidth* of 0. If the route can be selected then bandwidth is preventing successful route selection.

A value of ***unknownAttributeNotMet*** indicates that *RouteSelector* cannot determine why route cannot be selected. Constraints for all attributes are dropped yet successful route cannot be computed. This usually indicates a lack physical connectivity to the destination or gateway node. Alternatively, this may indicate that destination or gateway node is more than 20 hops away where 20 hops is the maximum number of hops in the route.

Mib: PorsVc

Values:
unknownAttributeNotMet
allAttributesMet
requiredRxBandwidth
requiredTxBandwidth

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requiredTrunkModes
maximumAcceptableCost
maximumAcceptableDelay
requiredTrafficType
permittedTrunkTypes
requiredSecurity
requiredCustomerParm
maximumTransmissionUnit
maximumAcceptableGatewayCost
maximumGatewayHops

Default allAttributesMet

ATTRIBUTE Rtg Rs routeGatewayCostMetric (rgcm)

Access Read only

Description This attribute indicates the cost metric associated with reaching the destination indirectly through a gateway node or gateway link that is part of the selected route If the selected route leads directly to the destination node then the *routeGatewayCostMetric* is set to a value 0. If a route could not be selected for whatever reason then the *routeGatewayCostMetric* is set to a value 999999 intended to symbolize unknown cost. For manual routes the value of *routeGatewayCostMetric* is also 999999. This is because *RouteSelector* does not verify manual routes thus *routeGatewayCostMetric* is unknown.

Mib PorsVc

Values Decimal (0..999999)

Default 0

ATTRIBUTE Rtg Rs routeType (rtyp)

Access Read only

Description This attribute indicates the type of route that was selected by *RouteSelector.*

If no route was selected then *routeType* has a value of ***noRoute***.

If the destination resides on the current node then *routeType* has a value of ***sameNode***.

If the destination resides on a different node and can be reached directly as opposed to indirectly through a gateway node then *routeType* has a value of ***destinationNode*** or ***destinationNodeLegacy*** with the latter only possible when legacy gateway selection algorithm was used (see *gatewaySelectionAlgorithm*).

If the destination can be reached indirectly through a gateway node with the gateway node being different from the current node then *routeType* has a value of ***gatewayNode*** or ***gatewayLink*** depending on whether or

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not the route consists of a single gateway link. A route consists of a single gateway link only when the route requestor (see *routeRequestor*) is a Routing Gateway (in inbound or outbound direction) and the route leads immediately across topology region or cluster boundary.

If the destination can be reached indirectly through a gateway node with the gateway node being the current node and the route requestor (see *routeRequestor*) is an application service as opposed to a Routing Gateway then *routeType* has a value of ***routingGateway***.

If selected route is a manual route then *routeType* has a value of ***manual***.

Note that the type of route, except for manual route, depends on who is the route requestor (application service, Routing Gateway serving as inbound or outbound gateway), where it resides (gateway or non-gateway node), how the destination can be reached (directly or indirectly through a gateway node), and what is the gateway selection algorithm (cost-based, random or legacy).

Mib — PorsVc

Values
noRoute
sameNode
destinationNode
destinationNodeLegacy
gatewayNode
gatewayLink
routingGateway
manual

Default — noRoute

ATTRIBUTE Rtg Rs routeDescription (rd)

Access — Read only

Description — This attribute indicates a vector of strings describing the selected or manual route returned by *RouteSelector*. Each entry in the vector describes one hop of the route. The hops are identified using a node name and either
- a TRM allocated trunk identification or exit number (TRM uses a component ‘link’, or ‘Lk’ in short form, to refer to trunks), or
- a trunk name,
which is local to that node. TRM allocated exit number is used for routes selected by *RouteSelector*. Trunk name is used for manual routes.

For example, a hop out of node StarBase using exit number 99 is described as “EM/STARBASE Trm Lk/99” for the selected route. A hop out of node StarBase using trunk name 123 is described as “EM/STARBASE TRK/123” for the manual route. A command *display Trm Lk/99* on node StarBase can be used to find out the trunk name corresponding to exit number 99.

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Mib	PorsVc
Vector of	String (0..40, ASCII)
Index	Decimal (1..20)
Default	No default

ATTRIBUTE Rtg Rs destinationOrGatewayNodes (dgn)

Access	Read only
Description	This attribute indicates a set of node IDs of destination or gateway nodes which directly or indirectly support the destination and to which *RouteSelector* attempted to find a route. Node to which the *RouteSelector* selected the route is also included in *destinationOrGatewayNodes*.
Mib	PorsVc
List of	Decimal (0..4095)
List Size	10
Default	No default

GROUP Rtg Rs RouteSelectorControls (Controls)

Properties	Operational
Description	This group contains attributes used to control *RouteSelector*.
Mib	PorsVc

ATTRIBUTE Rtg Rs operationMode (om)

Access	Read and write
Description	This attribute indicates the mode in which the *RouteSelector* is currently operating. The two possible modes are automatic and manual. In the automatic mode, a route request message containing the route request data is originated by a PORS VC and sent to the *RouteSelector*. *RouteSelector* then selects a route or gets a manual route and returns its description in the selected route description data in the selected route message back to the PORS VC. In the manual mode, the *RouteSelector* allows the operator to modify the parameters in the route request data (except for the manual path profile reference), and to initiate route selection using that data. When *RouteSelector* selects the route it displays its description to the operator. Note that even when *operationMode* is set to ***manual***, *RouteSelector* handles route request messages originated by services' VCs in the same way as it does when *operationMode* is set to ***automatic***.
Mib	PorsVc

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Values	automatic manual
Default	automatic

ATTRIBUTE Rtg Rs lastRouteSelectionTime (lrst)

Access	Read only
Description	This attribute indicates the time when *RouteSelector* last handled a route request message.
Mib	PorsVc
Values	Time (DHMS)
Default	No default

GROUP Rtg Rs PathAttributes

Properties	Operational
Description	This group contains parameters in route request data that govern the route selection. Values of these parameters are obtained either from an operator or from the last route request message from a PORS VC that contained such parameters or a reference to such parameters (parameter profile reference) as part of the route request data. Route request messages from a PORS VC that ask for a manual route do not contain such parameters or reference to such parameters. All other route request messages either explicitly contain route request data parameters or a reference to a profile containing such parameters. This group of attributes is therefore not applicable to manual routes.
Mib	PorsVc

ATTRIBUTE Rtg Rs sourceNodeId (snid)

Access	Read and write
Description	This attribute indicates the node ID of the source node from which a route to the destination is to be found. It is typically the current node. The term ‘source’ is used in relation to the route selection process and not the node where *RouteSelector* resides, that is the current node. That is, the source node need not be the current node although the selected route will be based on the topological database of the current node.
Mib	PorsVc
Values	Decimal (1..16777215)
Default	1

ATTRIBUTE Rtg Rs setupPriority (sp)

Access	Read and write

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Description	This attribute indicates the required priority for path establishment along the selected. Zero is the highest priority and four is the lowest. This attribute is closely related to *bumpingPriority* attribute.
Mib	PorsVc
Values	Decimal (0..4)
Default	2

ATTRIBUTE Rtg Rs requiredTxBandwidth (tbw)

Access	Read and write
Description	This attribute indicates the required transmit bandwidth in bits per second to send data to the destination.
Mib	PorsVc
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Rtg Rs requiredRxBandwidth (rbw)

Access	Read and write
Description	This attribute indicates the required receive bandwidth in bits per second to receive data from the destination.
Mib	PorsVc
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Rtg Rs maximumTransmissionUnit (maxtu)

Access	Read and write
Description	This attribute indicates the size of the largest packet that can be transported along the selected route. It is used by *RouteSelector* to select a route which avoids trunks whose maximum transmission unit is less than *maximumTransmissionUnit* and as a result would be unable to transport packets of this size. The default value of 0 permits all trunks to be eligible with respect to this attribute.
Mib	PorsVc
Values	Decimal (0..8192)
Default	0

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ATTRIBUTE Rtg Rs requiredSecurity (rsec)

Access	Read and write
Description	This attribute indicates the required minimum level of security of the trunks along the selected route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the *Trunk PathAdministrator (Trk Pa)* component. *RouteSelector* ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	PorsVc
Values	Decimal (0..7)
Default	4

ATTRIBUTE Rtg Rs requiredTrafficType (rttyp)

Access	Read and write
Description	This attribute indicates the required type of traffic that can be transported along the selected route. There are eight possible traffic types, and only one type can be transported. The ***voice***, ***data,*** and ***video*** traffic types are already defined, and five other traffic types can be defined by the network administrator. The *supportedTrafficType* attribute of the *Trunk PathAdministrator (Trk Pa)* component lists all the types of traffic allowed on the trunk. When selecting a route, *RouteSelector* only chooses trunks whose *supportedTrafficType* contains the *requiredTrafficType*.
Mib	PorsVc
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	voice

ATTRIBUTE Rtg Rs permittedTrunkTypes (pttyp)

Access	Read and write
Description	This attribute indicates a maximum of eight types of trunks that can be part of the selected route. The ***terrestrial*** and ***satellite*** trunk types have been defined already, leaving six remaining types that can be defined by the network administrator. The *trunkType* attribute of the *Trunk PathAdministrator (Trk Pa)* component specifies the type of the trunk. When selecting a route, *RouteSelector* only chooses trunks whose *trunkType* is one of the *permittedTrunkTypes*.

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Mib	PorsVc
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Rtg Rs requiredCustomerParm (rcpar)

Access	Read and write
Description	This attribute indicates the mechanism to customize the usage of trunks. Any trunk, whose *customerParameter* attribute under the *Trunk PathAdministrator (Trk Pa)* component is larger than the *requiredCustomerParameter* is not eligible to become part of the selected route.
Mib	PorsVc
Values	Decimal (0..7)
Default	4

ATTRIBUTE Rtg Rs pathAttributeToMinimize (pamin)

Access	Read and write
Description	This attribute indicates whether a route should be selected on the basis of minimizing the route cost or the route delay. Each trunk has a cost and a delay metric associated with it. The cost of a route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a route is the sum of the trunk delay metrics for all trunks included in the route. The delay metric of a trunk is equal to half the *measuredRoundTripDelay* operational attribute of the trunk.
Mib	PorsVc
Values	cost delay
Default	cost

ATTRIBUTE Rtg Rs maximumAcceptableCost (maxCost)

Access	Read and write
Description	This attribute indicates the upper bound on the cost metric of the selected route, which is the sum of the cost metrics of all trunks on the route. *RouteSelector* ensures the cost metric of the selected route does not exceed the *maximumAcceptableCost*.

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Mib	PorsVc
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Rtg Rs maximumAcceptableDelay (maxDelay)

Access	Read and write
Description	This attribute indicates the upper bound on the delay metric of the selected route, which is the sum of the delay metrics of all trunks on the route. *RouteSelector* ensures the delay metric of the selected route does not exceed the *maximumAcceptableDelay*. The delay metric of a trunk is equal to half the *measuredRoundTripDelay* operational attribute of the trunk.
Mib	PorsVc
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Rtg Rs bumpPreference (bprf)

Access	Read and write
Description	This attribute indicates whether bumping may be considered when selecting a route. By default, bumping may be considered only when it is necessary. That is, only when no other route to the destination or gateway node can be found An indication to always bump in order to find the best route may be set. In this case an absolutely best route to the destination or gateway node is found even if other paths along that route would need bumping.
Mib	PorsVc
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Rtg Rs requiredTrunkModes (rtmod)

Access	Read and write
Description	This attribute indicates which trunk modes to consider during route selection. The operational *mode* attribute of the *Trunk PathAdministrator (Trk Pa)* component specifies the mode of the trunk. When selecting a route, *RouteSelector* can either consider trunks with any mode, or only trunks with *mode* set to ***mapping***. That is, the selected route may contain trunks with any mode, or all trunks with *mode* set to ***mapping***.
Mib	PorsVc

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Values	any mapping
Default	any

ATTRIBUTE Rtg Rs maximumAcceptableGatewayCost (maxGCost)

Access	Read and write
Description	This attribute indicates the upper bound on the cost metric associated with reaching the destination along the selected route and through a gateway node. Such cost metrics are provisioned under *Trunk Address* component on a gateway node specifying costs of reaching an address through the gateway node and more accurately through the gateway link represented by the *Trunk* component.
Mib	PorsVc
Values	Decimal (0..65535)
Default	2048

ATTRIBUTE Rtg Rs routeRequestor (rreq)

Access	Read and write
Description	This attribute indicates the type of entity that makes a request for a route (route requestor). Three types of entities can make route requests: application service, Routing Gateway serving as inbound gateway at a gateway node, or Routing Gateway serving as outbound gateway at a gateway node.
Mib	PorsVc
Values	applicationService inboundRGty outboundRGty
Default	applicationService

ATTRIBUTE Rtg Rs gatewaySelectionAlg (gsalg)

Access	Read and write
Description	This attribute indicates the type of algorithm to use when a route to the destination has to be selected indirectly through a gateway node. The following types of algorithms are available: cost based, random, and legacy. For cost based algorithm, *RouteSelector* selects gateway node that advertised it can reach the destination at the smallest cost. For random algorithm, *RouteSelector* selects randomly any gateway node that advertised it can reach the destination. For legacy algorithm, *RouteSelector* selects a complete route to the

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destination without attempting to route through gateway nodes. This is only possible during single to multi topology region migration, or cluster migration but before such migration is complete. During such migrations routing to the destination is initially attempted through gateway nodes, but if such routing fails then legacy routing is attempted.

Mib	PorsVc
Values	costBased random legacy
Default	costBased

ATTRIBUTE Rtg Rs destination (dest)

Access	Read and write
Description	This attribute indicates either the ASCII name, node ID, or NSAP address of the destination node to which a route needs to be found. The format for *destination* is either 1. “EM/nodeName serviceName/instance”, for ASCII name, for example “EM/MoonBase VS/3”, or 2. “NID/nodeId”, for node ID, for example “NID/1226”, or 3. “NSAP/nsapAddress”, for NSAP address, for example “NSAP/12234001”. For NSAP address formats a full ATM End System Address, node summary, or reachable address can be specified, as well as a node prefix.
Mib	PorsVc
Values	String (0..45, ASCII)
Default	No default

GROUP Rtg Rs Statistics (Stats)

Properties	Operational
Description	This group contains statistics gathered by *RouteSelector* and relating to route selections.
Mib	PorsVc

ATTRIBUTE Rtg Rs routeStatistics

Access	Read only
Description	This attribute indicates a table (or an array) of the number of route requests and the number of routes selected. There are six rows and five columns in the table. The first row contains a number of route requests in a column. Each column corresponds to a value of *setupPriority* (= 0,1,2,3,4). An element in the first row gives a number of route request per given *setupPriority*. The five subsequent rows provide numbers of routes selected at *bumpingPriority* 0,1,2,3,4. The second row provides numbers

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of route selections at *bumpingPriority* 0. Only route requests of *setupPriority* 0 could be given routes of the *bumpingPriority* 0. By virtue of the property of *bumpingPriority* that it cannot be better than the *setupPriority* the rows two to six form a lower triangular matrix. Route selections performed upon operator request (manual route requests) are not counted.

Mib	PorsVc
Array of	Decimal (0..4294967295)
Row	setupPriority [routesRequested routesSelectedAtBp_0 routesSelectedAtBp_1 routesSelectedAtBp_2 routesSelectedAtBp_3 routesSelectedAtBp_4]
Column	statisticsTable [Decimal (0..4)]
Default	No default

COMPONENT Rtg DpnAddressPlan (Dpn)

Groups	GROUP Rtg Dpn Provisioned (Prov) GROUP Rtg Dpn Operational (Oper) GROUP Rtg Dpn ControlStatistics (ConStats) GROUP Rtg Dpn ForwardingStatistics (FwdStats)
Scope	Network
Description	*Routing DpnAddressPlan* This component is a subcomponent of *Routing*. It resides on all nodes that carry DPN traffic and is responsible for maintaining the routing information required to route this traffic. It is required on nodes that (i) support gateways to RMs and/or AMs, (ii) nodes that source and/or sink DPN traffic (for example, nodes which

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support VC end points), and (iii) intermediary nodes that simply carry DPN traffic.

Mib	DpnRouting
Subcomponents	COMPONENT Rtg Dpn AutomaticRouteTester (Art) COMPONENT Rtg Dpn PerformanceStatistics (PerfStats)
Opt. Subcomp.	COMPONENT Rtg Dpn RidFilterInfo (RidFilter)
Dyn. Subcomp.	COMPONENT Rtg Dpn ReachableRidInfo (Rid) COMPONENT Rtg Dpn ReachableMidInfo (Mid) COMPONENT Rtg Dpn ReachableCallServerInfo (Cs) COMPONENT Rtg Dpn LocalLinkGroups (Lg) COMPONENT Rtg Dpn LpStatistics (LpStats) COMPONENT Rtg Dpn DefaultRoute (DefRoute)
Common Verbs	Help List Display

GROUP Rtg Dpn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *DpnAddressPlan*. Attributes in this group must be set to allow the *DpnAddressPlan* component to function properly.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn logicalNetworkNumber (lnn)

Access	Read only
Criticality	Module
Description	This attribute specifies the Logical Network Number for the *DpnAddressPlan*. Since only one instance of this component can exist, this value is always set to one. It is provided here to be consistent with other address plans and so that it can be queried.
Mib	DpnRouting
Values	Decimal (1..1)
Default	1

ATTRIBUTE Rtg Dpn routingId

Access	Read and write
Criticality	Module
Description	This attribute specifies the Routing Identifier (RID) associated with this node.

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The RID is used to identify a group of one or more interconnected nodes (called a RID subnet) supporting the transport of DPN traffic. Its value must be the same as that of the other nodes in this RID subnet and different from that of all RMs and other RID subnets in the network.

The *routingId* must be set when a *DpnAddressPlan* component is configured on an node.

Changing the value of the *routingId* causes the node to restart.

Mib	DpnRouting
Values	Decimal (1..126)
Default	No default

ATTRIBUTE Rtg Dpn moduleId

Access	Read and write
Criticality	Module
Description	This attribute specifies the Module Identifier (MID) associated with this node. The MID is used to identify a node supporting the transport of DPN traffic. Its value must be different from that of all MIDs assigned to nodes in this RID subnet (interconnected nodes sharing a RID) and AMs in clusters supported by this subnet. If routing zones are used, it must also be unique from all other MIDs in this zone. The *moduleId* must be set when a *DpnAddressPlan* component is configured on a node. Changing the value of the *moduleId* will cause the node to restart.
Mib	DpnRouting
Values	Decimal (1..1909)
Default	No default

ATTRIBUTE Rtg Dpn delayMetricCutOff (delayC)

Access	Read and write
Description	This attribute specifies the delay metric value beyond which a destination RID should be considered unreachable. That is, if a delay metric to a RID is equal to or greater than this value then the RID is considered to be unreachable in the delay class of service. Lowering this value has the effect of speeding up the detection of the loss of reachability to a RID. It also reduces the amount of Routing Table Update (RTU) traffic generated in this scenario. Care must be taken to

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ensure that the value chosen is big enough for the longest delay path in the network.

This attribute is optional; a default of 128 is used when it is not set. It is recommended that all nodes in the network be provisioned with the same cut off value.

Mib	DpnRouting
Values	Decimal (64..250)
Default	128

ATTRIBUTE Rtg Dpn throughputMetricCutOff (tputC)

Access	Read and write
Description	This attribute specifies the throughput metric value beyond which a destination RID should be considered unreachable. That is, if a throughput metric to a RID is equal to or greater than this value then the RID will be considered to be unreachable in the throughput class of service. Lowering this value has the effect of speeding up the detection of the loss of reachability to a RID. It also reduces the amount of Routing Table Update (RTU) traffic generated in this scenario.Care must be taken to ensure that the value chosen is big enough for the longest throughput path in the network. This attribute is optional; a default of 245 is used when it is not set. It is recommended that all nodes in the network be provisioned with the same cut off value.
Mib	DpnRouting
Values	Decimal (128..245)
Default	245

ATTRIBUTE Rtg Dpn forwardingPolicy

Access	Read and write
Description	This attribute specifies the forwarding policy used by packet forwarding to handle DPN traffic on a node. When this attribute is set to ***loadshare***, DPN traffic is shared among preferred links in a link group in proportion to the available bandwidth on each link; the traffic is not forwarded in an order-preserved manner and needs resequencing at the destination, but the available bandwidth in a link group is utilized efficiently. When this attribute is set to ***loadspread***, DPN traffic is forwarded in an order-preserved manner along a randomly selected route; the traffic sticks to a particular link in a link group, and will not spill over to other links in the link group unless there is congestion on the selected link.

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When this attribute is set to ***loadspreadFast***, DPN traffic is forwarded in an order-preserved manner along a randomly selected route; the traffic sticks to a particular link in a link group, and will not spill over to other links in the link group. Choosing this value may improve throughput but traffic may be discarded in the presence of congestion.

It is recommended that all nodes in the network be provisioned with the same forwarding policy.

Note that though ***loadshare***, ***loadspread*** and ***loadspreadFast*** are all supported on the Nortel Networks Multiservice Switch 7400, ***loadspreadFast*** is the only forwarding policy that is supported on the Nortel Networks Multiservice Switch 15000 and the Nortel Networks Multiservice Switch 20000. On these switches, if the *forwardingPolicy* attribute is set to either ***loadshare*** or ***loadspread***, the underlying forwarding policy defaults to the value of ***loadspreadFast***.

A change in this attribute does not take effect on any already established Frame Relay (FR) connection. The existing FR connections should be restarted to adopt the new forwarding policy.

Mib	DpnRouting
Values	loadspread (spread) loadshare (share) loadspreadFast (spFast)
Default	loadspread

ATTRIBUTE Rtg Dpn delayMetricRangeBoundary (delayR)

Access	Read and write
Description	This attribute specifies the total path delay metric below which the *variance* value specified for delay COS and a low metric range is used, and at or above which the *variance* value specified for delay COS and a high metric range is used. This attribute defaults to 0, so that the *variance* value specified for delay COS and a high metric range is used for all delay paths. If this attribute is set to 2147483647, the *variance* value specified for delay COS and a low metric range is used for all delay paths.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE Rtg Dpn tputMetricRangeBoundary (tputR)

Access	Read and write

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Description	This attribute specifies the total path throughput metric below which the *variance* value specified for throughput COS and a low metric range is used, and at or above which the *variance* value specified for throughput COS and a high metric range is used. This attribute defaults to 0, so that the *variance* value specified for throughput COS and a high metric range is used for all delay paths. If this attribute is set to 2147483647, the *variance* value specified for throughput COS and a low metric range is used for all throughput paths.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE Rtg Dpn variance

Access	Read and write
Description	This attribute specifies the variance values for high and low metric ranges, for each class of service (COS). A variance value is the maximum allowed difference in metric between the best path and the second path, as a percentage of the best path metric. High and low metric ranges are defined for each COS by the *delayMetricRangeBoundary* and *tputMetricRangeBoundary* attributes, and refer to total path metrics. When a variance value for a certain COS and metric range is set to the default value of 0, only equal metric paths can be used under that COS when the best path metric is in that range. When it is set to a value greater than 0, an alternate path which is safe (that is, non-looping) and which has a metric within this percentage of the best path metric can be used as a multipath. The special value of 9999 signifies an infinite variance, so that any safe alternate path may be used in addition to the single best path, regardless of its metric.
Mib	DpnRouting
Array of	Decimal (0..500; 9999)
Units	%
Row	cos [delay throughput]
Column	metricRange [low high]
Default	([2 * 2] 0)

ATTRIBUTE Rtg Dpn csrmRoute

Access	Read and write

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Description	This attribute specifies the loadsharing mechanism for CSRM routing. When this attribute is set to ***share***, all call request packets that originate from or transit through the node will be forwarded to the two active CSRMs on a round-robin basis. When this attribute is set to ***closest***, all the call request packets will be forwarded to the closest CSRM. The default behavior is set to forward the calls to the closest CSRM.
Mib	DpnRouting
Values	closest (cl) shared (sh)
Default	closest

GROUP Rtg Dpn Operational (Oper)

Properties	Operational
Description	This group of attributes provides information about the functioning of the *DpnAddressPlan* component.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn callServerModuleRids

Access	Read only
Description	This attribute indicates the RIDs of the Call Server Resource Modules (CSRMs) currently in use to support Call Server functions, such as SCR and DCR, for the RID subnet. Up to two CSRMs can be in use to support such Call Server functions. Note that packets destined to Call Server functions are routed to the closest CSRM supporting the required server functionality.
Mib	DpnRouting
List of	Decimal (1..126)
Default	No default

GROUP Rtg Dpn ControlStatistics (ConStats)

Properties	Operational
Description	This group of attributes provides statistics about the behavior of the *DpnAddressPlan* component. The statistics concern the distribution of routing information, required to support the routing of DPN traffic, to all nodes in the RID subnet.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn controlPktTx

Access	Read only

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Description	This attribute counts the internal control packets, originating from this node, sent to other nodes in the RID subnet. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. The packets received from a neighbor node and forwarded to other neighbors are not counted. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Dpn controlPktRx

Access	Read only
Description	This attribute counts the internal control packets received from other nodes in the RID subnet. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Dpn controlBytesTx

Access	Read only
Description	This attribute counts the internal control packet bytes, originating from the node, sent to other nodes in the RID subnet. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. Packet bytes received from a neighbor node and forwarded to other neighbors are not counted. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Dpn controlBytesRx

Access	Read only
Description	This attribute counts the internal control packet bytes received from other nodes in the RID subnet. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Dpn outOfSequencePkt

Access	Read only
Description	This attribute counts the internal control packets received and rejected. These packets contained old sequence numbers. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtg Dpn ForwardingStatistics (FwdStats)

Properties	Operational
Description	This group of attributes provides statistics for the traffic handled by DPN packet forwarding on this module. The statistics can be used to monitor the connectionless traffic profile on this module.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn totalPackets

Access	Read only
Description	This attribute counts the delay and throughput packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast.*** It is the aggregate of *totalPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn throughputPackets

Access	Read only
Description	This attribute counts the throughput packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *throughputPackets* attribute of all *LpStatistics* components on the module. Note that DPRS

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packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.

Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn delayPackets

Access	Read only
Description	This attribute counts the delay packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *delayPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn normalReliabilityPackets

Access	Read only
Description	This attribute counts the normal reliability packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *normalReliabilityPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn highReliabilityPackets

Access	Read only
Description	This attribute counts the high reliability packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *highReliabilityPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are

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not counted. The counter wraps to zero when the maximum value is exceeded.

Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn discardNoRoute

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to failure to find a route to forward the packets on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *discardNoRoute* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn interruptingPackets

Access	Read only
Description	This attribute counts the multimedia packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *interruptingPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn discardLpCongested

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to LP congestion on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. A packet encounters LP congestion when there is insufficient shared memory. This attribute is the aggregate of *discardLpCongested* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving

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	the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

COMPONENT Rtg Dpn ReachableRidInfo (Rid)

Instance	Decimal (0..127)
Groups	GROUP Rtg Dpn Rid Operational (Oper)
Scope	Network
Description	*Routing Dpn ReachableRidInfo/<rid>* This component is a dynamic subcomponent of the *DpnAddressPlan*. It provides information about the paths to RIDs in the network that are reachable. There is one instance per reachable RID.
Mib	DpnRouting
Dyn. Subcomp.	COMPONENT Rtg Dpn Rid Mid
Common Verbs	Help List Display

VERB Ping Rtg Dpn Rid

Impact	Passive
Description	*Ping [-sensitivity(throughput/delay|multimedia)] [-reliability(high/normal)] [-priority(normal/high)] [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] [-allPaths] Routing Dpn Rid/<rid>* *Ping* causes a query packet to be sent to the RID destination. It can be used to either find a path to a destination or to measure the round trip delay to reach the destination. The ping command can also be used to ensure that the destination is reachable. If the destination is unreachable or the network is congested, the operator will be notified. The ping command can be issued with or without options. If no options are specified, the command reports the path used to reach the destination. When ping is used to find a path, it displays the RID and MID of each module that the query packet passes through on its way to the destination.

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The *ping* command supports the following options:

-sensitivity: This option specifies the sensitivity for the route to be taken by the ping packet. If ***delay*** sensitivity is specified, the packet is routed on the minimum delay path. If ***throughput*** sensitivity is specified, the packet is routed on the highest bandwidth route. If **multimedia** sensitivity is specified, the
packet is routed on the minimum delay path using the highest emission priority link transmit queue available. If this option is not selected, ***throughput*** sensitivity is used.

-reliability: This option specifies the reliability for the route to be taken by the ping packet. If ***high*** reliability is specified, the packet is routed on an overflow path if the primary path is congested. If ***normal*** reliability is specified, the ping packet is discarded if the primary path is congested. If this option is not selected, ***high*** reliability is used.

-priority: This option influences the priority of the *ping* packet. If ***high*** priority is specified, the packet is less likely to be discarded in the network. If this option is not selected, ***normal*** priority is used.

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. This option is ignored if the *allPaths* option is selected. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. This option is ignored if the -rtd option is not specified.

The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. This option is ignored if the -rtd option is not specified.

The rtd acknowledge packet consists of the Nortel Netwroks proprietary

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common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-allPaths (-all): If this option is selected, 16 query packets will be sent to the destination, and all possible paths (up to 16) to reach the destination will be reported. Since there are 16 path selection values used in the DPRS packet forwarding system, 16 query packets that each carry a different path selector will collect path information for all possible paths. All query packets which return to the source node within the timeout period are included in the response. The response indicates how many query packets were sent, how many were returned, and how many unique paths were taken.

GROUP Rtg Dpn Rid **Operational (Oper)**

Properties	Operational
Description	This group of attributes is maintained by the *DpnAddressPlan* component to provide information about the RIDs reachable in the network.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Rid **dpnDelayMetric**

Access	Read only
Description	This attribute indicates the minimum DPN delay metric to the destination RID. The delay metric associated with a path is computed by the routing system by translating the smallest *delayMetric* calculated for the destination. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities. The metric displayed is that of the best path to the destination. This metric is advertised to neighbor RMs and Nortel Networks Multiservice Switches in a different RID subnet. A metric value of 255 means the RID is unreachable in the delay class of service. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID. A metric value of 252 indicates that the destination RID is that of a Network Module (NM).
Mib	DpnRouting
Values	Decimal (0..255)

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Default	No default

ATTRIBUTE Rtg Dpn Rid dpnTputMetric

Access	Read only
Description	This attribute indicates the minimum DPN throughput metric to the destination RID. The throughput metric associated with a path is computed by the routing system by translating the smallest *tputMetric* calculated for the destination. A path with a lower metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities. The metric displayed is that of the best path to the destination. This metric is advertised to neighbor RMs and Nortel Networks Multiservice Switches in a different RID subnet. A metric value of 255 means the RID is unreachable in the throughput class of service. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID.
Mib	DpnRouting
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtg Dpn Rid routeType

Access	Read only
Description	This attribute indicates whether the paths in use to reach the destination RID are learned or default routes. When the paths in use are learned paths, the attribute value is ***learned***. When the paths are default routes, the attribute value is ***default***. The paths in use are always learned when this node is not a cluster node. There are up to two paths to reach a destination RID for each delay and throughput class of service. The paths displayed are the best and next best paths among all available paths to the destination. The paths in use are default routes only when this node is a cluster node. A cluster node has no knowledge about RID subnets other than its own. All packets destined to unknown RIDs, i.e. RIDs other than its own RID, will first be sent out of the cluster in which this node is located, and further forwarded by the nodes outside of the cluster to reach the destination. Therefore, the delay and throughput paths in use to reach a RID other than the cluster node's own RID are the two best and next best delay or throughput paths to get out of the cluster, and are called the default routes.
Mib	DpnRouting
Values	learned default
Default	learned

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ATTRIBUTE Rtg Dpn Rid delayNextHopLinkGroups

Access	Read only
Description	This attribute indicates the delay link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the destination RID. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest delay metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to an RM. If no link groups are listed then the destination is not reachable in the delay class of service (except in the case of the local node's RID). Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid tputNextHopLinkGroups

Access	Read only
Description	This attribute indicates the throughput link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the destination RID. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest throughput metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to an RM. If no link groups are listed then the destination is not reachable in the throughput class of service (except in the case of the local node's RID). Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

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ATTRIBUTE Rtg Dpn Rid delayPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total delay traffic flows to the destination which are sent over each delay path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid tputPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total throughput traffic flows to the destination which are sent over each throughput path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid delayMetric

Access	Read only
Description	This attribute indicates the delay metrics of up to two paths to the destination RID. The delay metric associated with a path is computed by the routing system based on the sum of the delays associated with the links in the path to the destination. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the RID is unreachable in the delay class of service. A metric value of 2147483647 for the second path only means that there is only one viable delay path to the destination. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID. Metric values of 2147483646 indicate that the destination RID is that of a Network Module (NM).

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Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid tputMetric

Access	Read only
Description	This attribute indicates the throughput metrics of up to two paths to the destination RID. The throughput metric associated with a path is computed by the routing system based on the sum of the bandwidth associated with the links in the path to the destination. A path with a lower metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the RID is unreachable in the throughput class of service. A metric value of 2147483647 for the second path only means that there is only one viable throughput path to the destination. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

COMPONENT Rtg Dpn Rid Mid

Instance	Decimal (0..2046)
Scope	Network
Description	*Routing Dpn Rid/<rid> Mid/<mid>* This component is a subcomponent of *ReachableRidInfo*. It supports the ping verb by providing the ability to ping a MID under a RID that is known to be reachable. The state (reachable/unreachable) of MIDs, other than those supported by the local RID subnet (see the *ReachableMidInfo* subcomponent), is not maintained by the *DpnAddressPlan* component.
Mib	DpnRouting
Common Verbs	Help List Display

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VERB Ping **Rtg Dpn Rid Mid**

Impact	Passive
Description	*Ping [-sensitivity(throughput/delay|multimedia)] [-reliability(high/normal)] [-priority(normal/high)] [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] [-allPaths] Routing Dpn Rid/<rid> Mid/<mid>* *Ping* causes a query packet to be sent to the RID MID destination. It can be used to either find a path to a destination or to measure the round trip delay to reach the destination. The ping command can also be used to ensure that the destination is reachable. If the destination is unreachable or the network is congested, the operator will be notified. The ping command can be issued with or without options. If no options are specified, the command reports the path used to reach the destination. When ping is used to find a path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. The *ping* command supports the following options: *-sensitivity:* This option specifies the sensitivity for the route to be taken by the ping packet. If ***delay*** sensitivity is specified, the packet is routed on the minimum delay path. If ***throughput*** sensitivity is specified, the packet is routed on the highest bandwidth route. If ***multimedia*** sensitivity is specified***,*** the packet is routed on the minimum delay path using the highest emission priority link transmit queue available. If this option is not selected, ***throughput*** sensitivity is used. *-reliability:* This option specifies the reliability for the route to be taken by the ping packet. If ***high*** reliability is specified, the packet is routed on an overflow path if the primary path is congested. If ***normal*** reliability is specified, the ping packet is discarded if the primary path is congested. If this option is not selected, ***high*** reliability is used. *-priority:* This option influences the priority of the *ping* packet. If ***high*** priority is specified, the packet is less likely to be discarded in the network. If this option is not selected, ***normal*** priority is used. -sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. This option is ignored if the -rtd option is not specified. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12

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octets are sent to the destination. The actual number of data octets sent is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. This option is ignored if the -rtd option is not specified.

The rtd acknowledge packet consists of the Nortel networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-allPaths (-all): If this option is selected, 16 query packets will be sent to the destination, and all possible paths (up to 16) to reach the destination will be reported. Since there are 16 path selection values used in the DPRS packet forwarding system, 16 query packets that each carry a different path selector will collect path information for all possible paths. All query packets which return to the source node within the timeout period are included in the response. The response indicates how many query packets were sent, how many were returned, and how many unique paths were taken.

COMPONENT Rtg Dpn ReachableMidInfo (Mid)

Instance	Decimal (0..2046)
Groups	GROUP Rtg Dpn Mid Operational (Oper)
Scope	Network
Description	*Routing Dpn ReachableMidInfo/<mid>* This component is a dynamic subcomponent of the *DpnAddressPlan*. It provides information about the MIDs supported by the local RID subnet that are, or were once, reachable. If the node is not a cluster node, an instance of this component represents the MID of any one of the nodes supported in the RID subnet. These includes nodes located inside or outside a cluster, DPN-100 AMs sub-tended off a cluster, and DPN-100 AMs connected to a node outside of a

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cluster.

If the node is a cluster node, an instance of this component represents the MID of any one of the nodes supported by the local cluster in the subnet. These include only Nortel Networks Multiservice Switches in the local cluster and DPN-100 AMs sub-tended off the cluster. In other words, MIDs located outside of the cluster are not shown.

Note that the node is in a cluster and is a cluster node when the *clusterNode* attribute under the *Routing* component is provisioned as ***yes***.

Mib — DpnRouting

Common Verbs — Help, List, Display

VERB Ping **Rtg Dpn Mid**

Impact — Passive

Description — *Ping [-sensitivity(throughput/delay/multimedia)] [-reliability(high/normal)] [-priority(normal/high)] [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] [-allPaths] Routing Dpn Mid/<mid>*

Ping causes a query packet to be sent to the MID destination. It can be used to either find a path to a destination or to measure the round trip delay to reach the destination.

The ping command can also be used to ensure that the destination is reachable. If the destination is unreachable or the network is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path used to reach the destination. When ping is used to find a path, it displays the RID and MID of each module that the query packet passes through on its way to the destination.

The *ping* command supports the following options:

-sensitivity: This option specifies the sensitivity for the route to be taken by the ping packet. If ***delay*** sensitivity is specified, the packet is routed on the minimum delay path. If ***throughput*** sensitivity is specified, the packet is routed on the highest bandwidth route. If ***multimedia*** sensitivity is specified***,*** the packet is routed on the minimum delay path using the highest
emission priority link transmit queue available. If this option is not selected, ***throughput*** sensitivity is used.

-reliability: This option specifies the reliability for the route to be taken by

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the ping packet. If ***high*** reliability is specified, the packet is routed on an overflow path if the primary path is congested. If ***normal*** reliability is specified, the ping packet is discarded if the primary path is congested. If this option is not selected, ***high*** reliability is used.

-priority: This option influences the priority of the *ping* packet. If ***high*** priority is specified, the packet is less likely to be discarded in the network. If this option is not selected, ***normal*** priority is used.

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. This option is ignored if the *allPaths* option is selected. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. This option is ignored if the -rtd option is not specified.

The rtd query packet consists of the Nortel Netwroks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. This option is ignored if the -rtd option is not specified.

The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the

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packet will be discarded and the operator will get the timeout response.

-allPaths (-all): If this option is selected, 16 query packets will be sent to the destination, and all possible paths (up to 16) to reach the destination will be reported. Since there are 16 path selection values used in the DPRS packet forwarding system, 16 query packets that each carry a different path selector will collect path information for all possible paths. All query packets which return to the source node within the timeout period are included in the response. The response indicates how many query packets were sent, how many were returned, and how many unique paths were taken.

GROUP Rtg Dpn Mid Operational (Oper)

Properties	Operational
Description	This group of attributes is maintained by *DpnAddressPlan* component to provide information about the MIDs reachable, or once reachable, through the local RID subnet.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Mid routeType

Access	Read only
Description	This attribute indicates whether the paths in use to reach the destination MID is learned or default routes. When the paths in use are learned paths, the attribute value is ***learned***. When the paths are default routes, the attribute value is ***default***. The paths in use are always learned when this node is not a cluster node. There are up to two paths to reach a destination MID for each delay and throughput class of service. The paths displayed are the best and next best paths among all available paths to the destination. The paths in use can be learned or default routes when this node is a cluster node. The paths are learned when the destination MID and this node are located in the same cluster. When the destination MID is located outside of the cluster, all packets destined to that MID will first be sent out of the cluster, and further forwarded by the nodes outside of the cluster to reach the destination. Therefore, the delay and throughput paths in use to send packets to all MIDs located outside of the cluster are the two best and next best delay or throughput paths to get out of the cluster, and are called the default routes.
Mib	DpnRouting
Values	learned default
Default	learned

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ATTRIBUTE Rtg Dpn Mid **midType**

Access	Read only
Description	This attribute indicates the type of the MID for the module in the subnet. ***em*** - for a backbone (that is, non-cluster) Nortel Networks Multiservice Switch. ***am*** - for a DPN-100 node. ***cluster*** - for a Nortel Networks Multiservice Switch inside a cluster. ***unknown*** - for a node that is unknown to the cluster node.
Mib	DpnRouting
Values	em am cluster unknown
Default	No default

ATTRIBUTE Rtg Dpn Mid **substituteRid**

Access	Read only
Description	This attribute indicates the substitute RID in use for the MID. This RID will be substituted for the RID in DPN packets destined to the local node's RID and the MID in question when the MID is unreachable (when, for example, all links to an AM from the RID subnet are down). It will also be used in the case where the path through the substitute RID is better than that available through the subnet's connection to the cluster containing the AM MID. Substitute RIDs are learned from AM clusters that are supported by two RIDs (the subnet's RID and another one). The operator can check this value to determine if a possible back up route to an AM exists. When there are no *delayNextHopLinkGroups* or *tputNextHopLinkGroups* shown to reach the MID, the substitute RID will be used. A value of 128 indicates that no substitute RID is known.
Mib	DpnRouting
Values	Decimal (1..128)
Default	128

ATTRIBUTE Rtg Dpn Mid **delayNextHopLinkGroups**

Access	Read only
Description	This attribute indicates the delay link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the destination MID. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest delay metrics to the destination.

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The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to an AM.

If no link groups are listed then the destination is not reachable in the delay class of service (except in the case of the local node's MID, or when a substitute RID path is available).

Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.

Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid tputNextHopLinkGroups

Access	Read only
Description	This attribute indicates the throughput link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the destination MID. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest throughput metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to an AM. If no link groups are listed then the destination is not reachable in the throughput class of service (except in the case of the local node's MID, or when a substitute RID path is available). Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid delayMetric

Access	Read only
Description	This attribute indicates the delay metrics of up to two paths to the destination MID. The delay metric associated with a path is computed by the routing system based on the sum of the delays associated with the

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links (or estimated delays for links to AMs) in the path to the destination. It is computed for every possible path to the destination and is used by the *DpnAddressPlan* component for path comparison purposes. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities. The metrics displayed are those of the paths being used to reach the destination.

Metric values of 2147483647 for both paths means the MID is unreachable in the delay class of service (though it might still be reachable via its substitute RID). A metric value of 2147483647 for the second path only means that there is only one viable delay path to the destination.A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's MID.

Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid tputMetric

Access	Read only
Description	This attribute indicates the throughput metrics to the destination MID. The throughput metric associated with a path is computed by the routing system based on the sum of the bandwidth associated with the links (or estimated bandwidth for links to AMs) in the path to the destination. It is computed for every possible path to the destination and is used by the *DpnAddressPlan* component for path comparison purposes. A path with a lower metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the MID is unreachable in the throughput class of service (though it might still be reachable via its substitute RID). A metric value of 2147483647 for the second path only means that there is only one viable throughput path to the destination. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid delayPathTrafficProportions

Access	Read only

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Description	This attribute indicates the target percentages of the total delay traffic flows to the destination which are sent over each delay path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid tputPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total throughput traffic flows to the destination which are sent over each throughput path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

COMPONENT Rtg Dpn ReachableCallServerInfo (Cs)

Instance	dcr nui crd lnui scr npm grman gscr gdcr lcr
Groups	GROUP Rtg Dpn Cs Operational (Oper)
Scope	Network
Description	*Routing Dpn ReachableCallServerInfo/<server>* This component is a dynamic subcomponent of the *DpnAddressPlan*. It provides information about the Call Server functions, supported by one of the up to two Call Server Resource Modules, that are reachable. The information is accessed by specifying one of the following abbreviated

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names:
scr - Source Call Routing Agent
dcr - Destination Call Routing Agent
gscr - Gateway Source Call Router Server
gdcr - Gateway Destination Call Router Server
grman - Gateway Call Routing Manager
crd - Call Redirection Remote Server Interface
lcr - (Limping) Call Redirection Server
nui - Network User Identifier Remote Server Interface
lnui - (Limping) Network User Identifier
npm - Network Process Monitor System

Mib DpnRouting

Common Verbs
Help
List
Display

GROUP Rtg Dpn Cs Operational (Oper)

Properties Operational

Description This group of attributes is maintained by the *DpnAddressPlan* component to provide information about the Call Server functions reachable on the Call Server Resource Modules.

Mib DpnRouting

ATTRIBUTE Rtg Dpn Cs routeType

Access Read only

Description This attribute indicates whether the paths in use to reach the destination call server is learned or default routes. When the paths in use are learned paths, the attribute value is ***learned***. When the paths are default routes, the attribute value is ***default***.

The paths in use are always learned when this node is not a cluster node. There are up to two paths to reach a destination call server for each delay and throughput class of service. The paths displayed are the best and next best paths among all available paths to the destination.

The paths in use can be learned or default routes when this node is a cluster node. The paths are learned when the call server in use is in the same cluster where this node is located. When the call server in use is located outside of the cluster, all packets destined to that call server will first be sent out of the cluster, and further forwarded by the nodes outside of the cluster to reach the module supporting the call server. Therefore, the delay and throughput paths in use to send packets to all call servers located outside of the cluster are the two best and next best delay or throughput paths to get out of the cluster, and are called the default routes.

Mib DpnRouting

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Values	learned default
Default	learned

ATTRIBUTE Rtg Dpn Cs delayNextHopLinkGroups

Access	Read only
Description	This attribute indicates the delay link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the Call Server Resource Module (CSRM) supporting the server. DPN server traffic will be load shared across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest delay metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to a CSRM. If no link groups are listed then the server is not reachable in the delay class of service. Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs tputNextHopLinkGroups

Access	Read only
Description	This attribute indicates the throughput link group, or groups, that are being used to reach a neighbor which is either the next hop in the path to the Call Server Resource Module (CSRM) supporting the server. DPN server traffic will be load shared across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest throughput metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to the CSRM. If no link groups are listed then the server is not reachable in the throughput class of service. Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting

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Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs delayMetric

Access	Read only
Description	This attribute indicates the delay metrics of up to two paths to the server supported on a Call Server Resource Module (CSRM). The delay metric associated with a path is computed by the routing system based on the sum of the delays associated with the links in the path to the CSRM supporting the server. It is computed for every possible path to the server and is used by the *DpnAddressPlan* component for path comparison purposes. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the server is unreachable in the delay class of service. A metric value of 2147483647 for the second path only means that there is only one viable delay path to the destination. A value of 0 indicates that no cost is associated with the path to the destination.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs tputMetric

Access	Read only
Description	This attribute indicates the throughput metrics of up to two paths to reach the server supported on a Call Server Resource Module (CSRM). The throughput metric associated with a path is computed by the routing system based on the sum of the bandwidth associated with the links in the path to the CSRM supporting the server. It is computed for every possible path to the server and is used by the *DpnAddressPlan* component for path comparison purposes. A path with a lower metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the server is unreachable in the throughput class of service. A metric value of 2147483647 for the second path only means that there is only one viable throughput path to the destination. A value of 0 indicates that no cost is associated with the path to the destination.

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Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs delayPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total delay traffic flows to the destination which are sent over each delay path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs tputPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total throughput traffic flows to the destination which are sent over each throughput path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

COMPONENT Rtg Dpn LocalLinkGroups (Lg)

Instance	String (1..12, ASCII)
Groups	GROUP Rtg Dpn Lg Operational (Oper)
Scope	Network
Description	*Routing Dpn LocalLinkGroups/<neighborNodeName>* This component is a dynamic subcomponent of the *DpnAddressPlan*. It

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	provides information about the support of external gateways to RMs and AMs connected to this Nortel Networks Multiservice Switch.
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn Lg Operational (Oper)

Properties	Operational
Description	This group of attributes provides information about the gateways in use to reach Nortel Networks Multiservice Switches, RMs, and AMs connected to this node.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Lg farEndType

Access	Read only
Description	This attribute indicates the type of the far end module (EM, AM or RM).
Mib	DpnRouting
Values	em rm am
Default	No default

ATTRIBUTE Rtg Dpn Lg farEndRid

Access	Read only
Description	This attribute indicates the far end neighbor RID. If the neighbor is an AM then the RID is that of the node.
Mib	DpnRouting
Values	Decimal (1..126)
Default	No default

ATTRIBUTE Rtg Dpn Lg farEndMid

Access	Read only
Description	This attribute indicates the far end neighbor MID.
Mib	DpnRouting
Values	Decimal (1..1910)
Default	No default

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ATTRIBUTE Rtg Dpn Lg delayMetric

Access	Read only
Description	This attribute indicates the delay metric calculated for the link group. If the type of the far end switch is AM, the delay metric is calculated for MID routing, ranging from 1 to 2147483647. If the type of the far end switch is EM or RM, the delay metric, ranging from 1 to 255, is based on the measured round trip delay of the delay preferred links in the group. A link group with a low metric value is preferable to one with a higher value as it is associated with lower delay facilities.
Mib	DpnRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Dpn Lg tputMetric

Access	Read only
Description	This attribute indicates the throughput metric calculated for the link group. If the type of the far end switch is AM, the throughput metric is calculated for MID routing, ranging from 1 to 2147483647. If the type of the far end switch is EM or RM, the throughput metric, ranging from 1 to 255, is based on the sum of the bandwidth available for all links in the group. A link group with a low metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities.
Mib	DpnRouting
Values	Decimal (1..2147483647)
Default	No default

COMPONENT Rtg Dpn LpStatistics (LpStats)

Instance	Decimal (0..15)
Groups	GROUP Rtg Dpn LpStats ForwardingStatistics (FwdStats)
Scope	Network

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Description	*Routing Dpn LpStatistics/n* This component provides DPN packet forwarding statistics for the LP identified by this component instance.
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn LpStats ForwardingStatistics (FwdStats)

Properties	Operational
Description	This group of attributes provides DPN packet forwarding statistics for this LP. The statistics can be used to monitor the connectionless traffic profile on this LP.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn LpStats totalPackets

Access	Read only
Description	This attribute counts the delay and throughput packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast***, DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats throughputPackets

Access	Read only
Description	This attribute counts the throughput packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast,*** DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting

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Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats **delayPackets**

Access	Read only
Description	This attribute counts the delay packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast,*** DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats **normalReliabilityPackets**

Access	Read only
Description	This attribute counts the normal reliability packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast,*** DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats **highReliabilityPackets**

Access	Read only
Description	This attribute counts the high reliability packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast,*** DPRS packets that are tandem

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	through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats discardNoRoute

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to failure to find a route to forward the packets on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats interruptingPackets

Access	Read only
Description	This attribute counts the multimedia packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast***, DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats discardLpCongested

Access	Read only
Description	This attribute counts the packets that have been discarded by DPN packet forwarding, on the entire module, due to congestion on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. This value is the sum of the packets discarded by all LPs due to insufficient shared memory on this one. Note that DPRS packets leaving the network at this

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LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast***, DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.

Mib	DpnRouting
Values	Long Integer
Default	No default

COMPONENT Rtg Dpn RidFilterInfo (RidFilter)

Instance	Decimal (1..126)
Groups	GROUP Rtg Dpn RidFilter Provisioned (Prov)
Scope	Network
Description	*Routing Dpn RidFilterInfo/<rid>* This component maintains information related to the filtering of RID reachability information in Routing Table Updates (RTUs) sent to and received from the instance RID.
Mib	DpnRouting
Common Verbs	Help List Display Add DELete

GROUP Rtg Dpn RidFilter Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes specifies the criteria for filtering Routing Table Updates (RTUs) sent to and received from a neighboring RID.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn RidFilter importRidList

Access	Read and write
Description	This attribute specifies the list of RIDs whose reachability information will be accepted from the instance RID. Information about RIDs which do not appear in this list will be ignored and this node considers those RIDs to be unreachable from the instance RID. Note that this also applies to the instance RID itself, that is, if the instance RID does not appear in the import list, this node considers the instance RID to be unreachable from the instance RID. By default this list contains all valid RIDs, meaning that information about

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all RIDs will be accepted from the instance RID.

When this list is empty, no RID information is accepted from the instance RID, therefore, no RID traffic will be routed to it. A warning is generated when an empty import list is detected.

RID 127 is the Network Services Sharing (NSS) RID, used to identify DPN-100 nodes running call servers which can be used for remote call processing. This RID can be filtered like any other using the import RID list.

Mib	DpnRouting
List of	Decimal (1..127)
Default	(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127)

ATTRIBUTE Rtg Dpn RidFilter **exportRidList**

Access	Read and write
Description	This attribute specifies the list of RIDs whose true reachability is advertised to the instance RID. RIDs which do not appear in this list are advertised to the instance RID as being unreachable from this node. By default, this list contains all valid RIDs, meaning that true reachability information for all RIDs is advertised to the instance RID. When this list is empty, all RIDs will be advertised to the instance RID as unreachable, including this node's own RID, therefore the instance RID will not route any RID traffic to this RID. A warning is generated when an empty export list is detected. RID 127 is the Network Services Sharing (NSS) RID, used to identify DPN-100 nodes running call servers which can be used for remote call processing. This RID can be filtered like any other using the import RID list.
Mib	DpnRouting
List of	Decimal (1..127)
Default	(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102,

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103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127)

COMPONENT Rtg Dpn DefaultRoute (DefRoute)

Groups	GROUP Rtg Dpn DefRoute Operational (Oper)
Scope	Network
Description	*Routing Dpn defaultRoute* This is a dynamic subcomponent of *DpnAddressPlan*. It has only one instance and only resides on a node when the *clusterNode* under the *Routing* component is provisioned as ***yes*** meaning the node is a cluster node. It provides information about the default paths in use to any RID, MID, or Call Server unknown to the cluster node.
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn DefRoute Operational (Oper)

Properties	Operational
Description	This group of attributes is maintained by the *DpnAddressPlan* component to provide information about the default routes to any unknown RID, MID, or Call Server from a cluster node.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn DefRoute delayNextHopLinkGroups

Access	Read only
Description	This attribute indicates the delay link group, or groups, that are being used at a cluster node to reach a neighbor which is the next hop in the default path to an unknown RID, MID, or Call Server. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest delay metrics to the backbone. If no link groups are listed then the backbone and thus all RIDs, MIDs, and Call Servers outside of the local cluster are not reachable in the delay class of service. Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)

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Default	No default

ATTRIBUTE Rtg Dpn DefRoute tputNextHopLinkGroups

Access	Read only
Description	This attribute indicates the throughput link group, or groups, that are being used at a cluster node to reach a neighbor which is the next hop in the default route to an unknown RID, MID, or Call Server. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest throughput metrics to the backbone. If no link group is listed then the backbone and thus all RIDs, MIDs and Call Servers outside of the local cluster are not reachable in the throughput class of service. Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute delayPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total delay traffic flows over each delay default path from the cluster node to reach a RID, MID, or Call Server outside of the cluster. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute tputPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total throughput traffic flows over each throughput default path from the cluster node to reach a RID, MID or Call Server outside of the cluster. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting

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Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute delayMetric

Access	Read only
Description	This attribute indicates the delay metrics of up to two paths in use at a cluster node for forwarding packets to any unknown RID, MID, or Call server. The paths in use are the paths towards the backbone of the network. Packets destined to any unknown RID, MID, or Call Server are forwarded to a non-cluster node outside of the cluster and further handled by the node outside of the cluster to reach their destinations. Paths from the local cluster node to all connected non-cluster nodes in the RID subnet are found by the Routing System. The delay metric displayed is computed based on the sum of the delays associated with the links in a path from the local node to one of those non-cluster nodes. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities. Metric values of 2147483647 for both paths means no default paths are in use and thus all unknown RIDs, MIDs, and Call Servers are unreachable in the delay class of service. A metric value of 2147483647 for the second path only means that there is only one viable delay path to get off the cluster.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute tputMetric

Access	Read only
Description	This attribute indicates the throughput metrics of up to two paths in use at a cluster node for forwarding packets to any unknown RID, MID, or Call server. The paths in use are the paths towards the backbone of the network. Packets destined to any unknown RID, MID, or Call Server are forwarded to a non-cluster node outside of the cluster and further handled by the node outside of the cluster to reach their destinations. Paths from the local cluster node to all connected non-cluster nodes in the RID subnet are found by the Routing System. The throughput metric displayed is computed based on the sum of the throughputs associated with the links in a path from the local node to one of those non-cluster

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nodes. A path with a lower metric value is preferable to one with a higher value as it is associated with lower throughput facilities.

Metric values of 2147483647 for both paths means no default paths are in use and thus all unknown RIDs, MIDs, and Call Servers are unreachable in the throughput class of service. A metric value of 2147483647 for the second path only means that there is only one viable throughput path to get off the cluster.

Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

COMPONENT Rtg Dpn AutomaticRouteTester (Art)

Groups	GROUP Rtg Dpn Art Provisioned (Prov) GROUP Rtg Dpn Art Operational (Oper)
Scope	Network
Description	*Rtg Dpn AutomaticRouteTester* This component is a subcomponent of *DpnAddressPlan*. It provides the DPN automatic route testing capability by periodically sending DPN Ping packets to each reachable RID and MID destination in the DPN routing table. It monitors if these Ping packets are returned in a reasonable period of time (about 15 seconds), and analyzes the route information collected in these packets. An alarm will be raised if one or more of the following problems are detected to at least one of the destinations in the DPN routing table: (1) “Timeout” After sending three Ping packets (one round-trip-delay Ping packet and two path Ping packets) to a destination, none of them return back in a reasonable period of time. This is referred to as a “timeout” problem to this destination. (2) “Routing Loop” After analyzing the route information collected in the path Ping packets that have returned in time (a path Ping packet logs the route information (forward direction only) of all the tandem nodes this Ping packet has traversed before it reached the destination), a routing loop is detected if a specific node appears more than once on the route. This is referred to as a "routing loop" (sometimes simply “loop”) problem to this destination. Information about each error destination is accessible via a dynamic sub-component under this component. If the destination is a RID destination, it will be *ErrorRid/x* (where x is the RID value of the RID destination). For MID destination, it will be *ErrorMid/y* (where y is the MID value of the MID destination). The maximum number of error destinations (counting both the RID and the MID destinations) that can be simultaneously tracked (and

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thus appear here) is 10.

Please note that *ErrorRid/x* or *ErrorMid/y only* exist as long as there is a problem to this destination. If the problem no longer exist or this error destination becomes unreachable, the component (*ErrorRid/x* or *ErrorMid/y)* that keeps track of this error destination will be automatically removed.

Mib DpnRouting

Dyn. Subcomp. COMPONENT Rtg Dpn Art ErrorRid (ErrRid)
COMPONENT Rtg Dpn Art ErrorMid (ErrMid)

Common Verbs Help
List
Display

GROUP Rtg Dpn Art Provisioned (Prov)

Properties Provisioned

Description This group of attributes provides information about the option(s) and parameter(s) that the operator can set to control the behavior of automatic route tester.

Mib DpnRouting

ATTRIBUTE Rtg Dpn Art cosUnderTest

Access Read and write

Description This attribute specifies the COS type(s) (delay, throughput, delay and throughput) for which the automatic route testing is conducted.

A description of possible values for this attribute follows:
none: Do not conduct route testing for any COS type (essentially the automatic route tester is turned off).
delayCosOnly: Conduct route testing to each reachable RID and MID destination for delay COS only.
tputCosOnly: Conduct route testing to each reachable RID and MID destination for throughput COS only.
delayAndTputCos: Conduct route testing to each reachable RID and MID destination for delay and throughput COSs.

Setting this attribute to "***none***" allows the operator to turn off the automatic route tester. Using value "***delayCosOnly***" or "***tputCosOnly***" tells the automated route tester to only work on one COS of the operator's choice. Choosing value "***delayAndTputCos***" when both the delay and throughput COSs are to be tested.

The network resources consumption (such as CPU, memory, link bandwidth) of the automatic route tester working on two COSs will roughly be two times as much as working on only one COS. The time to complete

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a full cycle of route testing to every reachable destination is also expected to be twice as long when working on two COSs.

Mib: DpnRouting

Values:
none
delayCosOnly
tputCosOnly
delayAndTputCos

Default: none

ATTRIBUTE Rtg Dpn Art testInterval (interval)

Access: Read and write

Description: This attribute specifies the time interval between the successive tests on different destinations. The automatic route tester periodically tries to test the route to a different reachable destination (RID or MID). In order not to put too heavy a load on the network, it will wait for a period of time equal to this interval before it will start working on another destination.

The smaller the value of this attribute, the more frequently the automatic route tester gets invoked to work on route testing. On one hand, doing so will reduce the amount of time needed to complete a fully cycle of route testing to every reachable destination. One the other hand, this will increase the resource consumption of the automatic route tester accordingly.

During each testInterval, the automatic route tester will first retry the routes to each error destination, if any, to see if they have recovered. After the retries of all these error destinations, another RID/MID destination from the DPN routing table (not in the error destination list) will be chosen to conduct route testing only if the current number of error destinations is less than 10. If the number of error destinations has reached 10, no other destinations will be chosen and the automatic route tester will focus on retrying only these error destinations at each testInterval. However, if the routes to at least one error destination has recovered or has become unreachable, the number of error destinations will fall below 10, and the selection and conducting of route testing on another destination from the DPN routing table will resume.

Mib: DpnRouting

Values: Decimal (5..900)

Units: seconds

Default: 60

GROUP Rtg Dpn Art Operational (Oper)

Properties: Operational

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Description	This group of attributes provides information about the outstanding error destinations discovered by the automatic route tester.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Art numOfLoopDests (numOfLoop)

Access	Read only
Description	This attribute indicates the total number of RID and MID destinations to which a routing loop problem has been detected. Whenever a new error destination of routing loop type is found, this value is increased by one, and whenever the loop problem to one destination goes away or this destination has become unreachable, this value is decreased by one.
Mib	DpnRouting
Values	Decimal (0..10)
Default	0

ATTRIBUTE Rtg Dpn Art numOfTimeoutDests (numOfTimeout)

Access	Read only
Description	This attribute indicates the total number of RID and MID destinations to which a timeout problem has been detected. Whenever a new error destination of timeout type is found, this value is increased by one, and whenever the timeout problem to one destination goes away or this destination has become unreachable, this value is decreased by one.
Mib	DpnRouting
Values	Decimal (0..10)
Default	0

COMPONENT Rtg Dpn Art ErrorRid (ErrRid)

Instance	Decimal (1..127)
Groups	GROUP Rtg Dpn Art ErrRid Operational (Oper)
Scope	Network
Description	*Rtg Dpn Art ErrorRid/** This component provides information about one outstanding problematic RID destination that has a timeout problem, loop problem, or both.

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There is one instance of this component per error RID destination.

Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn Art ErrRid Operational (Oper)

Properties	Operational
Description	This group of attributes provides information about a single error destination (RID or MID) discovered by the automatic route tester.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Art ErrRid delayCosErrType (delayErrType)

Access	Read only
Description	This attribute indicates the type of error that was found with the route to this destination (on delay COS) by the automatic route tester.
Mib	DpnRouting
Values	noError timeout loop
Default	noError

ATTRIBUTE Rtg Dpn Art ErrRid throughputCosErrType (tputErrType)

Access	Read only
Description	This attribute indicates the type of error that was found with this destination (on throughput COS) by the automatic route tester.
Mib	DpnRouting
Values	noError timeout loop
Default	noError

ATTRIBUTE Rtg Dpn Art ErrRid delayCosErrPathInfo (delayErrPath)

Access	Read only
Description	This attribute provides hop-by-hop route information for a destination to which a routing loop problem (on delay COS) was found. For a timeout problem, this information is not provided.

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Mib	DpnRouting
List of	String (0..32, ASCII)
Default	No default

ATTRIBUTE Rtg Dpn Art ErrRid throughputCosPathInfo (tputErrPath)

Access	Read only
Description	This attribute provides hop-by-hop route information for a destination to which a routing loop problem (on throughput COS) was found. For a timeout problem, this information is not provided.
Mib	DpnRouting
List of	String (0..32, ASCII)
Default	No default

COMPONENT Rtg Dpn Art ErrorMid (ErrMid)

Instance	Decimal (1..2046)
Groups	GROUP Rtg Dpn Art ErrMid Operational (Oper)
Scope	Network
Description	*Rtg Dpn Art ErrorMid/** This component provides information about one outstanding problematic MID destination that has a timeout problem, loop problem, or both. There is one instance of this component per error MID destination.
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn Art ErrMid Operational (Oper)

Properties	Operational
Description	This group of attributes provides information about a single error destination (RID or MID) discovered by the automatic route tester.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Art ErrMid delayCosErrType (delayErrType)

Access	Read only
Description	This attribute indicates the type of error that was found with the route to this destination (on delay COS) by the automatic route tester.
Mib	DpnRouting

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Values	noError timeout loop
Default	noError

ATTRIBUTE Rtg Dpn Art ErrMid **throughputCosErrType (tputErrType)**

Access	Read only
Description	This attribute indicates the type of error that was found with this destination (on throughput COS) by the automatic route tester.
Mib	DpnRouting
Values	noError timeout loop
Default	noError

ATTRIBUTE Rtg Dpn Art ErrMid **delayCosErrPathInfo (delayErrPath)**

Access	Read only
Description	This attribute provides hop-by-hop route information for a destination to which a routing loop problem (on delay COS) was found. For a timeout problem, this information is not provided.
Mib	DpnRouting
List of	String (0..32, ASCII)
Default	No default

ATTRIBUTE Rtg Dpn Art ErrMid **throughputCosPathInfo (tputErrPath)**

Access	Read only
Description	This attribute provides hop-by-hop route information for a destination to which a routing loop problem (on throughput COS) was found. For a timeout problem, this information is not provided.
Mib	DpnRouting
List of	String (0..32, ASCII)
Default	No default

COMPONENT Rtg Dpn **PerformanceStatistics (PerfStats)**

Scope	Network
Description	*Rtg Dpn PerfStats* This component is a subcomponent of *Rtg Dpn* component. It is responsible for monitoring the performance of *Dpn* component by recording statistics. Statistics maintained by this component include (1) number of routing control packets and bytes that are transmitted and received by the *Dpn* component, and (2) RID subnet statistics (such as

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number of MIDs, number of gateway nodes etc.) that are stored in the database and maintained by the *Dpn* component.

Routing control packets (also known as routing protocol packets), which are sent and received by the *Dpn* component, can be categorized into two types: intra-subnet protocol packets and inter subnet protocol packets. Intra-subnet protocol packets are also called broadcast packets, and are used to advertise reachable RID, MID, Call Server functions, Call Server Resource Module (CSRM) RID, and substitute RID information in a subnet. Inter subnet protocol packets are used to convey routing information between RID subnets and to inter-network with DPN-100 networks. The packet statistics provided by this component include only broadcast packets that are transmitted to and received from other nodes in the subnet in which this node resides.

The subnet statistics (*DpnRidSubnetStatistics*), maintained by this component, provide subnet characteristics from this node's view. When there are no clusters being deployed in a RID subnet, the *PerfStats DpnRidSubnetStatistics* provided by each node in the subnet should be identical. If there exist clusters in a RID subnet, the subnet statistics provided by subnet backbone nodes and cluster nodes would be different. However, the *PerfStats DpnRidSubnetStatistics* provided by each subnet backbone node should be identical; the *PerfStats DpnRidSubnetStatistics* provided by each cluster node in the same cluster should be identical.

Mib	DpnRouting
Dyn. Subcomp.	COMPONENT Rtg Dpn PerfStats LinkGroupStatistics (LgStats)
Common Verbs	Help List Display

COMPONENT Rtg Dpn PerfStats LinkGroupStatistics (LgStats)

Instance	String (1..12, ASCII)
Scope	Network
Description	*Rtg Dpn PerfStats LgStats/<aNeighborNodeName>* This component is a dynamic subcomponent of *Rtg Dpn PerfStats* component. It provides statistics of broadcast packets that are transmitted to and received from the neighbor node identified by the *LgStats* component. Note that there is one *LgStats* instance per spanning tree link group (also known as spanning tree neighbor), and that not all physical link groups staged on this node are present as *LgStats* instances. This is because a spanning tree forwarding algorithm is used by the *Dpn* component to perform broadcasting (that is, broadcast packets are forwarded only along the spanning tree branches, not forwarded on every physical link groups staged on a node) in order to achieve broadcast efficiency and lower

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broadcast traffic. The spanning tree is computed by the *Rtg Top* component, and is computed on a per RID subnet basis upon topology change. Even though the spanning tree spans and covers every node, including cluster nodes, in the subnet, the *Dpn* component is informed only the local link groups that are on the spanning tree, as only these spanning tree link groups are needed to perform the broadcasting. Therefore, for each local spanning tree link group inside the subnet in which this node locates, there is an *LgStats* instance added to record the statistics of broadcast packet that are transmitted to and received from the spanning tree neighbor.

Note also that some *Dpn* broadcasts in a subnet do go across backbone and cluster border. Therefore, on a backbone or cluster border node, a spanning tree link group, identified by an *LgStats* instance, may be a backbone cluster border link group.

An *LgStats* instance also represents a broadcast neighbor. When the link group to a broadcast neighbor goes down and then comes back, statistics maintained by the *LgStats* instance will be reset and restart from zero.

Mib: DpnRouting

Common Verbs: Help, List, Display

COMPONENT Rtg Topology (Top)

Groups: GROUP Rtg Top Statistics (Stats)

Scope: Network

Description:

Rtg Topology
This component is a subcomponent of *Routing*. It resides on all Nortel Networks Multiservice Switches and is responsible for maintaining a topological database describing the network topology in terms of nodes and connectivity between them in a topology region. Note that a topology region is an autonomous groups of nodes, in which each of the nodes has its *regionId* (attribute of *ModuleData* component) set to the same value. A node only exchanges topology information with connected nodes in the same region.

This component also computes the reachability costs to each node within

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	the topology region for multiple address plans taking into account the underlying transport attributes of interest to them.
Mib	BaseRouting
Subcomponents	COMPONENT Rtg Top PerformanceStatistics (PerfStats)
Dyn. Subcomp.	COMPONENT Rtg Top Node COMPONENT Rtg Top BorderLinkGroup (BLg)
Common Verbs	Help List Display

GROUP Rtg Top Statistics (Stats)

Properties	Operational
Description	*Rtg Top Statistics* This group contains operational data stored and maintained by this component for recording statistics of routing control packets that have been sent or received by *Topology*.
Mib	BaseRouting

ATTRIBUTE Rtg Top controlPktRx

Access	Read only
Description	This attribute shows the total number of topology routing control packets which have been received by this node from other nodes in the network.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Top controlBytesRx

Access	Read only
Description	This attribute shows the total number of topology routing control packet bytes received by this node from other nodes in the network.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Top controlPktTx

Access	Read only
Description	This attribute shows the total number of topology routing control packets which have been sent by this node to other nodes in the network.

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Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Top controlBytesTx

Access	Read only
Description	This attribute shows the total number of topology routing control packet bytes sent by this node to other nodes in the network.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtg Top Node

Instance	String (1..12, ASCII)
Groups	GROUP Rtg Top Node Operational (Oper)
Scope	Network
Description	*Rtg Top Node/<neighborNodeName>* This component is a dynamic subcomponent of *Topology*. It describes the existence of a node whose *clusterNode* (attribute under the *Routing* component) is provisioned the same value as that of this node, and indicates this node's view of interconnections to the node. If this node is a cluster node, that is the attribute *clusterNode* for this node is provisioned with the value ***yes***, then this component provides reachability information for each node supported in the cluster in which this node is located. Note that a cluster, consisting of one or more interconnected cluster nodes, is typically deployed at the edge of a topology region to provide access services. Therefore, in other words, if this node is in a cluster of a topology region, there is one instance of this component for each node in the cluster topology. Similarly, if this node is a non-cluster node, that is the attribute *clusterNode* for this node is provisioned with the value ***no***, then this component provides reachability information for each node supported in the topology region but excluding all cluster nodes. Note that, in contrast, a non-cluster node typically provides transportation for traffic flows originating or terminating on cluster nodes. A group of interconnected non-cluster nodes is typically located in the center of a topology region to connect clusters. To simplify the description of all subcomponents of *Node* component as well as their attributes in the following text, this group of interconnected non-cluster nodes in a topology region is referred as the backbone or a topology region's backbone, and a non-cluster node in the backbone is referred as a backbone node. Therefore, if this node is in the

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backbone of a topology region, there is one instance of this component for each node located in the backbone.

Mib	BaseRouting
Dyn. Subcomp.	COMPONENT Rtg Top Node LinkGroup (Lg) COMPONENT Rtg Top Node ClusterNode COMPONENT Rtg Top Node PeerBorderNode COMPONENT Rtg Top Node NodeAddress (Addr) COMPONENT Rtg Top Node ReachableAddr (RAddr)
Common Verbs	Help List Display

GROUP Rtg Top Node Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> Operational* This group contains operational data stored and maintained by the *Node* component for recognizing interconnections to nodes existing in either the backbone or a cluster where this node locates.
Mib	BaseRouting

ATTRIBUTE Rtg Top Node nodeId

Access	Read only
Description	This attribute is a number that uniquely identifies the *Node* component instance in a topology region. It is the identifier used in the routing control packets sent by this node to other nodes in the same topology region. The *nodeId* for each node in a topology region is learned from the routing protocol packets.
Mib	BaseRouting
Values	Decimal (1..4095)
Default	No default

COMPONENT Rtg Top Node LinkGroup (Lg)

Instance	String (1..12, ASCII)
Groups	GROUP Rtg Top Node Lg Operational (Oper)
Scope	Network
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/ <neighborNodeName>* This component is a dynamic subcomponent of the *Node* component. It describes the link group that connects two nodes with the same *clusterNode* value, more precisely, from a cluster node to a cluster node or from a non cluster node to a non cluster node (referred to as backbone

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node). This type of link group is also known as the normal link group.

This component provides information, in this node's view, about normal link groups supported on each node in either the backbone or a cluster depending on the location of this node.

If this node is in a cluster, there is one instance of this component for each link group (excluding cluster border link group) supported by each node in the cluster.

Similarly, if this node is a non-cluster node, i.e. it is located in the backbone of a topology region, there is one instance of this component for each link group (excluding cluster border link groups) supported by each node in the backbone.

Mib	BaseRouting
Dyn. Subcomp.	COMPONENT Rtg Top Node Lg PorTrunkObject (TrkObj)
Common Verbs	Help List Display

GROUP Rtg Top Node Lg Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/<neighborNodeName> Operational* *Rtg Top BorderLinkGroup/<neighborNodeName> Operational* This group contains the operational data stored and maintained by the *LinkGroup* and *BorderLinkGroup* components to recognize characteristics of link groups staged on a node.
Mib	BaseRouting

ATTRIBUTE Rtg Top Node Lg delayMetric

Access	Read only
Description	This attribute indicates the outbound cost to forward packets across the link group for the delay class of service. It is calculated using the average delay of delay preferred links in the link group. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the link group is unusable for the delay class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)

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Default	No default

ATTRIBUTE Rtg Top Node Lg tputMetric

Access	Read only
Description	This attribute indicates the outbound cost to forward packets across the link group for a throughput class of service. It is computed from the combined speed of each link in the link group. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the trunk group is unusable for the throughput class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top Node Lg logicalNetworkNumber (lnn)

Access	Read only
Description	This attribute is a list of integers which indicate the logical network numbers supported by the trunk group. Each of these numbers corresponds with a particular instance of network protocol supported on this switch. LNN 0 is present on all link groups by default to allow control traffic on the link group.
Mib	BaseRouting
List of	Decimal (0..2047)
Default	No default

COMPONENT Rtg Top Node Lg PorTrunkObject (TrkObj)

Instance	Decimal (1..1023)
Groups	GROUP Rtg Top Node Lg TrkObj Operational (Oper)
Scope	Network
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/<neighborNodeName> Trunk/<Trm Lk Id>* This component corresponds to a trunk object stored in topological database. There is one instance of this component for each link that can carry PORS traffic in the *LinkGroup* or *BorderLinkGroup* component. The *PorTrunkObject* instance is the same as the *Link* instance allocated by

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Trm for the trunk. Display command applied to this component shows PORS data of the trunk object in topological database.

Mib	BaseRouting
Common Verbs	Help List Display

GROUP Rtg Top Node Lg TrkObj Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/<neighborNodeName> Trunk/<Trm Lk Id> Operational* This group contains the operational data stored and maintained by the *PorTrunkObject* component.
Mib	BaseRouting

ATTRIBUTE Rtg Top Node Lg TrkObj maxReservableBwOut (mrbwo)

Access	Read only
Description	This attribute displays trunk bandwidth which can be used for reservations on behalf of connections requiring path oriented routing. This bandwidth is displayed in bit/s and has been calculated by concerned trunk path administrator from the trunk bandwidth and from the percentage of trunk bandwidth provisioned for reservations by PORS.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj trunkCost (cost)

Access	Read only
Description	This attribute displays trunk cost metric provisioned as *trunkCost* attribute of a concerned trunk path administrator.
Mib	BaseRouting
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj trunkDelay (delay)

Access	Read only
Description	This attribute displays one-directional trunk delay measured by trunk during staging. This is half (rounded down to an integer) of the delay displayed by attribute *delay* under *Trm Link*.

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Mib	BaseRouting
Values	Decimal (0..65535)
Units	msec
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj **trunkSecurity (sec)**

Access	Read only
Description	This attribute displays trunk security metric provisioned as *trunkSecurity* attribute under the trunk path administrator.
Mib	BaseRouting
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj **supportedTrafficTypes (sttyp)**

Access	Read only
Description	This attribute indicates the type of traffic that can be transmitted on the trunk. There are eight possible traffic types and the trunk can transmit all of them if desired. The voice, data and video traffic types are defined, and five other traffic types can be defined in using *supportedTrafficTypes* under the trunk path administrator. This attribute is used in the route selection process to limit the route to trunks that support the traffic to be carried by the path.
Mib	BaseRouting
Set of	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj **trunkType (typ)**

Access	Read only
Description	This attribute lists the type of the trunk. There can be up to eight types of trunks. The terrestrial and satellite trunk types have been defined, leaving six remaining types that can be defined by the network administration. The set of allowed trunk types for a path is indicated in the *permittedTrunkTypes* attribute of the *PLC*. When selecting a route, PORS only chooses trunks whose *Pa trunkType* is in the *permittedTrunkTypes* set of the path.

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Mib	BaseRouting
Values	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj **customerParameter (cpar)**

Access	Read only
Description	This attribute indicates the customer defined parameter for the trunk. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary *PLC* attribute, *requiredCustomerParam*, also has a value from zero to seven. The Route Selector does not consider trunks whose *Pa customerParameter* is greater than the *requiredCustomerParam* of the path.
Mib	BaseRouting
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj **farEndTrmLkInstance (far)**

Access	Read only
Description	This attribute indicates identification of the corresponding trunk providing the reverse direction of transmission.
Mib	BaseRouting
Values	Decimal (1..1023)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj **mapMode**

Access	Read only
Description	This attribute indicates if the trunk is in Map Mode or not. A value of ***yes*** indicates that the trunk is in Map mode and ***no*** if it is not.
Mib	BaseRouting
Values	no yes
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj **unreservedBwOut (unres)**

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Access	Read only
Description	This attribute displays a table. In the first row there are setup priorities. In the second row there are numerators of parts of unreserved bandwidth corresponding to setup priority 0 (first column) through 4 (fifth column). The denominator is 255.
Mib	BaseRouting
Array of	Decimal (0..255)
Row	setupPriority [bwPartOver255]
Column	unreservedBwParts [Decimal (0..4)]
Default	No default

COMPONENT Rtg Top Node **ClusterNode**

Instance	String (1..12, ASCII)
Groups	GROUP Rtg Top Node ClusterNode Operational (Oper)
Scope	Network
Description	*Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName>* *Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName>* This component is a dynamic subcomponent of both the *Node* and *BorderLinkGroup* components. It exists only on a non cluster node (also referred as a backbone node), that is, this component is present under *Node* and/or *BorderLinkGroup* only if the attribute *clusterNode* for this node is provisioned with ***no***. This component does not exist on any cluster node. If this node is a backbone node, this component, under *Node*, describes the reachability from a border node in the backbone to a cluster node. Note that a border node refers to the node that is connected by cluster border link groups. Therefore, this component provides information, in this backbone node's view, about all cluster nodes (which might be located in multiple clusters) reachable through all border nodes in the backbone. There is one instance of this component for each cluster node reachable through a border node. If this node is also a border node in the backbone, that is, this node is a backbone node and has at least one cluster border link group staged on it. Then, this component, under the *BorderLinkGroup*, describes the reachability to a cluster node through a local cluster border link group. There is one instance of this component for each cluster node in a cluster that can be reached through a cluster border link group. Note that this information (reachable cluster nodes through a cluster border link group) is

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only known to the local node, and is not shared with the other nodes in the backbone.

Mib BaseRouting

Common Verbs
Help
List
Display

GROUP Rtg Top Node ClusterNode Operational (Oper)

Properties Operational

Description *Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName> Operational*

Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName> Operational

Rtg Top Node/<clusterBorderNodeName> PeerBorderNode/ <backboneBorderNodeName> Operational

This group contains the operational data stored and maintained by the *ClusterNode* component on a backbone node and/or the *PeerBorderNode* component on a cluster node.

Mib BaseRouting

ATTRIBUTE Rtg Top Node ClusterNode nodeId

Access Read only

Description This attribute is a number that uniquely identifies the *ClusterNode* and/or the *PeerBorderNode* instance in topology region. It is the identifier used in the routing control packets sent by this node to other nodes in the same topology region.

The *nodeId* for each node in a topology region is learned from the routing protocol packets.

Mib BaseRouting

Values Decimal (1..4095)

Default No default

ATTRIBUTE Rtg Top Node ClusterNode delayMetric

Access Read only

Description This attribute indicates the outbound cost for the delay class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of delay metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities.

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A metric value of 2147483647 means that the destination is unreachable for the delay class of service.

Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top Node ClusterNode **tputMetric**

Access	Read only
Description	This attribute indicates the outbound cost for the throughput class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of throughput metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the destination is unreachable for the throughput class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

COMPONENT Rtg Top Node **PeerBorderNode**

Instance	String (1..12, ASCII)
Groups	GROUP Rtg Top Node PeerBorderNode Operational (Oper)
Scope	Network
Description	*Rtg Top Node/<clusterBorderNodeName> PeerBorderNode/ <backboneBorderNodeName>* This component is a dynamic subcomponent of the *Node* component. It exists only on a cluster node, that is this component is present under *Node* only if the attribute *clusterNode* for this node is provisioned as ***yes***. This component does not exist on any non- cluster node (also referred as backbone node). This component describes the reachability from a border node in the cluster to a peer border node in the backbone. It provides information, in this node's view, about those peer border nodes in the backbone reachable through each border node in the cluster. There is one instance

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of this component for each peer border node in the backbone reachable through a cluster border node.

Mib — BaseRouting

Common Verbs — Help, List, Display

GROUP Rtg Top Node PeerBorderNode **Operational (Oper)**

Properties — Operational

Description — *Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName> Operational*

Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName> Operational

Rtg Top Node/<clusterBorderNodeName> PeerBorderNode/ <backboneBorderNodeName> Operational

This group contains the operational data stored and maintained by the *ClusterNode* component on a backbone node and/or the *PeerBorderNode* component on a cluster node.

Mib — BaseRouting

ATTRIBUTE Rtg Top Node PeerBorderNode **nodeId**

Access — Read only

Description — This attribute is a number that uniquely identifies the *ClusterNode* and/or the *PeerBorderNode* instance in topology region. It is the identifier used in the routing control packets sent by this node to other nodes in the same topology region.

The *nodeId* for each node in a topology region is learned from the routing protocol packets.

Mib — BaseRouting

Values — Decimal (1..4095)

Default — No default

ATTRIBUTE Rtg Top Node PeerBorderNode **delayMetric**

Access — Read only

Description — This attribute indicates the outbound cost for the delay class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of delay metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities.

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A metric value of 2147483647 means that the destination is unreachable for the delay class of service.

Mib BaseRouting

Values Decimal (1..2147483647)

Default No default

ATTRIBUTE Rtg Top Node PeerBorderNode **tputMetric**

Access Read only

Description This attribute indicates the outbound cost for the throughput class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of throughput metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities.

A metric value of 2147483647 means that the destination is unreachable for the throughput class of service.

Mib BaseRouting

Values Decimal (1..2147483647)

Default No default

COMPONENT Rtg Top Node **NodeAddress (Addr)**

Instance String (1..40, ASCII)

Scope Network

Description *Rtg Top Node/<nodeName> NodeAddress/<nodeAddress>*
This component represents an NSAP address (or prefix) which can be reached from the node identified by the instance of the *Node* component. Each instance of this component actually represents a *nodePrefix* or an *alternatePorsPrefixes* provisioned under the *Mod* component on the node identified by the instance of the *Node* component.

Instances of this component associated with a remote node are learned from the topology information broadcast sent by the remote node. Topology information is exchanged only between nodes within the same topology region's backbone or cluster. Instances of this component under all *Node* components represent the set of all node addresses stored in the topology database maintained by the local node.

Mib BaseRouting

Common Verbs Help
List
Display

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COMPONENT Rtg Top Node ReachableAddr (RAddr)

Instance	address [String (1..40, ASCII)] linkId [Decimal (0..9999)]
Groups	GROUP Rtg Top Node RAddr Operational (Oper)
Scope	Network
Description	*Rtg Top Node/<nodeName> ReachableAddr/<reachableAddr>,<linkId>* This component represents an NSAP address (or prefix) as well as the associated link ID which can be reached from the node identified by the instance of the *Node* component. Actually, an instance of this component really represents either an *Address* component provisioned under a *Trunk* component or a *SummaryAddress* component provisioned under the *Routing* component on the node identified by the instance of the *Node* component. Instances of this component associated with a remote node are learned from the topology information broadcast sent by the remote node. Topology information is exchanged only between nodes within the same topology region's backbone or cluster. Instances of this component under all *Node* components represent the set of all reachable addresses stored in the topology database maintained by the local node. If a *SummaryAddress* component, provisioned under the *Routing* component, is the prefix of an *Address* component provisioned under a *Trunk* component on the same node, the *Address* component will be removed from the list of *ReachableAddr* instances associated with and broadcast by that node. This behavior is also referred as reachable addresses summarization. That is, if an *Address* component is summarized by a *SummaryAddress* component provisioned on the same node, the *Address* component will not be broadcast by that node, therefore, it will not be displayed through a *ReachableAddr* component instance associated with that node.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Rtg Top Node RAddr Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<aNodeName> ReachableAddr/<anAddress> Operational* This group contains the operational data stored and maintained by a *ReachableAddr* component in the topology database of the local node.
Mib	BaseRouting

ATTRIBUTE Rtg Top Node RAddr cost

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Access	Read only
Description	This attribute indicates the cost to reach the *ReachableAddr* component from the node identified by the instance of the *Node* component. The value of this attribute associated with a *ReachableAddr* component provisioned on a remote node is learned from the topology information exchange protocol packets sent by the remote node. If the *ReachableAddr* represents a *Trunk Address* component on a node (which could be either a remote node or the local node), the value displayed in this attribute is actually the cost provisioned in the *cost* attribute under the *Trunk Address* component on the node. If the *ReachableAddr* represents a *Routing SummaryAddress* component on a node, then the value displayed in this attribute is the cost provisioned in the *cost* attribute under the *Routing SummaryAddress* on the node.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Rtg Top Node RAddr **porsReachable (prsR)**

Access	Read only
Description	This attribute indicates whether the *Trunk* component under which the *ReachableAddr* is provisioned is able to carry PORS traffic or not. In other words, this attribute indicates whether there is a *PathAdmin* component present under the *Trunk* Component which is also the parent component of the *ReachableAddr* component.The value of this attribute associated with a *ReachableAddr* component provisioned on a remote node is learned from the topology information exchange protocol packets sent by the remote node. The value of this attribute is ***yes*** if there is a *PathAdmin* component existing under the *ReachableAddr* component's parent - the *Trunk* component, and is ***no*** otherwise.
Mib	BaseRouting
Values	no yes
Default	No default

ATTRIBUTE Rtg Top Node RAddr **clusterBorderNode (cbn)**

Access	Read only
Description	This attribute indicates whether the *ReachableAddr* is provisioned on a backbone-cluster border node or not. The value of this attribute associated with a *ReachableAddr* component provisioned on a remote node is learned from the topology information exchange protocol packets sent by the remote node.

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The value of this attribute is ***yes*** if the node on which the *ReachableAddr* is provisioned is a backbone border node or a cluster border node, and is ***no*** otherwise.

Mib	BaseRouting
Values	no yes
Default	No default

COMPONENT Rtg Top BorderLinkGroup (BLg)

Instance	String (1..12, ASCII)
Groups	GROUP Rtg Top BLg Operational (Oper)
Scope	Network
Description	*Rtg Top BorderLinkGroup/<neighborNodeName>* This component is a dynamic subcomponent of *Topology*. It describes the link group that connects two nodes with different *clusterNode* values, or more precisely, from a cluster node to a non-cluster node (also referred as a backbone node). This type of link group is also known as the cluster border link group. This component provides information about the support of cluster border link groups connected to this node, regardless whether this node is a cluster node or a backbone node.
Mib	BaseRouting
Dyn. Subcomp.	COMPONENT Rtg Top BLg PorTrunkObject (TrkObj) COMPONENT Rtg Top BLg ClusterNode
Common Verbs	Help List Display

GROUP Rtg Top BLg Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/<neighborNodeName> Operational* *Rtg Top BorderLinkGroup/<neighborNodeName> Operational* This group contains the operational data stored and maintained by the *LinkGroup* and *BorderLinkGroup* components to recognize characteristics of link groups staged on a node.
Mib	BaseRouting

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ATTRIBUTE Rtg Top BLg delayMetric

Access	Read only
Description	This attribute indicates the outbound cost to forward packets across the link group for the delay class of service. It is calculated using the average delay of delay preferred links in the link group. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the link group is unusable for the delay class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top BLg tputMetric

Access	Read only
Description	This attribute indicates the outbound cost to forward packets across the link group for a throughput class of service. It is computed from the combined speed of each link in the link group. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the trunk group is unusable for the throughput class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top BLg logicalNetworkNumber (lnn)

Access	Read only
Description	This attribute is a list of integers which indicate the logical network numbers supported by the trunk group. Each of these numbers corresponds with a particular instance of network protocol supported on this switch. LNN 0 is present on all link groups by default to allow control traffic on the link group.
Mib	BaseRouting
List of	Decimal (0..2047)
Default	No default

COMPONENT Rtg Top BLg PorTrunkObject (TrkObj)

Instance	Decimal (1..1023)

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Groups	GROUP Rtg Top BLg TrkObj Operational (Oper)
Scope	Network
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/<neighborNodeName> Trunk/<Trm Lk Id>* This component corresponds to a trunk object stored in topological database. There is one instance of this component for each link that can carry PORS traffic in the *LinkGroup* or *BorderLinkGroup* component. The *PorTrunkObject* instance is the same as the *Link* instance allocated by *Trm* for the trunk. Display command applied to this component shows PORS data of the trunk object in topological database.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Rtg Top BLg TrkObj Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/<neighborNodeName> Trunk/<Trm Lk Id> Operational* This group contains the operational data stored and maintained by the *PorTrunkObject* component.
Mib	BaseRouting

ATTRIBUTE Rtg Top BLg TrkObj maxReservableBwOut (mrbwo)

Access	Read only
Description	This attribute displays trunk bandwidth which can be used for reservations on behalf of connections requiring path oriented routing. This bandwidth is displayed in bit/s and has been calculated by concerned trunk path administrator from the trunk bandwidth and from the percentage of trunk bandwidth provisioned for reservations by PORS.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj trunkCost (cost)

Access	Read only
Description	This attribute displays trunk cost metric provisioned as *trunkCost* attribute of a concerned trunk path administrator.
Mib	BaseRouting

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Values	Decimal (1..255)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj **trunkDelay (delay)**

Access	Read only
Description	This attribute displays one-directional trunk delay measured by trunk during staging. This is half (rounded down to an integer) of the delay displayed by attribute *delay* under *Trm Link*.
Mib	BaseRouting
Values	Decimal (0..65535)
Units	msec
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj **trunkSecurity (sec)**

Access	Read only
Description	This attribute displays trunk security metric provisioned as *trunkSecurity* attribute under the trunk path administrator.
Mib	BaseRouting
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj **supportedTrafficTypes (sttyp)**

Access	Read only
Description	This attribute indicates the type of traffic that can be transmitted on the trunk. There are eight possible traffic types and the trunk can transmit all of them if desired. The voice, data and video traffic types are defined, and five other traffic types can be defined in using *supportedTrafficTypes* under the trunk path administrator. This attribute is used in the route selection process to limit the route to trunks that support the traffic to be carried by the path.
Mib	BaseRouting
Set of	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

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ATTRIBUTE Rtg Top BLg TrkObj **trunkType (typ)**

Access	Read only
Description	This attribute lists the type of the trunk. There can be up to eight types of trunks. The terrestrial and satellite trunk types have been defined, leaving six remaining types that can be defined by the network administration. The set of allowed trunk types for a path is indicated in the *permittedTrunkTypes* attribute of the *PLC*. When selecting a route, PORS only chooses trunks whose *Pa trunkType* is in the *permittedTrunkTypes* set of the path.
Mib	BaseRouting
Values	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj **customerParameter (cpar)**

Access	Read only
Description	This attribute indicates the customer defined parameter for the trunk. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary *PLC* attribute, *requiredCustomerParam*, also has a value from zero to seven. The Route Selector does not consider trunks whose *Pa customerParameter* is greater than the *requiredCustomerParam* of the path.
Mib	BaseRouting
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj **farEndTrmLkInstance (far)**

Access	Read only
Description	This attribute indicates identification of the corresponding trunk providing the reverse direction of transmission.
Mib	BaseRouting
Values	Decimal (1..1023)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj **mapMode**

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Access	Read only
Description	This attribute indicates if the trunk is in Map Mode or not. A value of ***yes*** indicates that the trunk is in Map mode and ***no*** if it is not.
Mib	BaseRouting
Values	no yes
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj **unreservedBwOut (unres)**

Access	Read only
Description	This attribute displays a table. In the first row there are setup priorities. In the second row there are numerators of parts of unreserved bandwidth corresponding to setup priority 0 (first column) through 4 (fifth column). The denominator is 255.
Mib	BaseRouting
Array of	Decimal (0..255)
Row	setupPriority [bwPartOver255]
Column	unreservedBwParts [Decimal (0..4)]
Default	No default

COMPONENT Rtg Top BLg **ClusterNode**

Instance	String (1..12, ASCII)
Groups	GROUP Rtg Top BLg ClusterNode Operational (Oper)
Scope	Network
Description	*Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName>* *Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName>* This component is a dynamic subcomponent of both the *Node* and *BorderLinkGroup* components. It exists only on a non cluster node (also referred as a backbone node), that is, this component is present under *Node* and/or *BorderLinkGroup* only if the attribute *clusterNode* for this node is provisioned with ***no***. This component does not exist on any cluster node. If this node is a backbone node, this component, under *Node*, describes the reachability from a border node in the backbone to a cluster node. Note that a border node refers to the node that is connected by cluster border link groups. Therefore, this component provides information, in this backbone node's view, about all cluster nodes (which might be located in

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multiple clusters) reachable through all border nodes in the backbone. There is one instance of this component for each cluster node reachable through a border node.

If this node is also a border node in the backbone, that is, this node is a backbone node and has at least one cluster border link group staged on it. Then, this component, under the *BorderLinkGroup*, describes the reachability to a cluster node through a local cluster border link group. There is one instance of this component for each cluster node in a cluster that can be reached through a cluster border link group. Note that this information (reachable cluster nodes through a cluster border link group) is only known to the local node, and is not shared with the other nodes in the backbone.

Mib: BaseRouting

Common Verbs: Help, List, Display

GROUP Rtg Top BLg ClusterNode Operational (Oper)

Properties: Operational

Description: *Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName> Operational*

Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName> Operational

Rtg Top Node/<clusterBorderNodeName> PeerBorderNode/ <backboneBorderNodeName> Operational

This group contains the operational data stored and maintained by the *ClusterNode* component on a backbone node and/or the *PeerBorderNode* component on a cluster node.

Mib: BaseRouting

ATTRIBUTE Rtg Top BLg ClusterNode nodeId

Access: Read only

Description: This attribute is a number that uniquely identifies the *ClusterNode* and/or the *PeerBorderNode* instance in topology region. It is the identifier used in the routing control packets sent by this node to other nodes in the same topology region.

The *nodeId* for each node in a topology region is learned from the routing protocol packets.

Mib: BaseRouting

Values: Decimal (1..4095)

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Default	No default

ATTRIBUTE Rtg Top BLg ClusterNode **delayMetric**

Access	Read only
Description	This attribute indicates the outbound cost for the delay class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of delay metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the destination is unreachable for the delay class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top BLg ClusterNode **tputMetric**

Access	Read only
Description	This attribute indicates the outbound cost for the throughput class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of throughput metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the destination is unreachable for the throughput class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

COMPONENT Rtg Top **PerformanceStatistics (PerfStats)**

Scope	Network
Description	*Rtg Top PerfStats* This component is a subcomponent of *Rtg Top* component. It is responsible for monitoring the performance of *Top* component by recording statistics. Statistics maintained by this component include the number of (1) routing control packets and (2) various information fragments (also known as database entries) that are stored and maintained in the topology database by the *Top* component. Routing control packets (also known as routing protocol packets), sent and received by the *Top* component, can be categorized into two types: topology protocol packets and cluster protocol packets. Topology protocol packets are used to advertise topology information and are exchanged

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only between nodes in the same flat topology region, region's backbone, or cluster. Therefore, the topology database, maintained by the *Top* component, contains only information of nodes in the same flat topology region, region's backbone, or cluster. Cluster protocol packets are used to convey routing information across the backbone-cluster boundary and are exchanged only between backbone and cluster border nodes.

If clusters are not deployed, the packet statistics provided by this component include only topology protocol packets that are transmitted to and received from other nodes in the same topology region. The database statistics maintained by this component provides information of the topology database that contains all nodes in the same topology region in which this node resides.

If clusters are deployed in the topology region, on a backbone node, the packet statistics provided by this component include only topology protocol packets that are transmitted to and received from other nodes in the backbone. On a backbone border node, the packet statistics provided by this component also include the cluster protocol packets that are sent to and received from the connected cluster border nodes. Since the topology database, maintained by a *Top* component, is the same on either a backbone node or a backbone border node, the database statistics provided by this component should be identical on all nodes in the backbone.

Similarly, on a cluster node, the packet statistics provided by this component include only topology protocol packets that are transmitted to and received from other node in the cluster. On a cluster border node, the packet statistics provided by this component also include the cluster protocol packets that are sent to and received from the connected backbone border nodes. Since the topology database, maintained by a *Top* component, is the same on either a cluster node or a cluster border node, the database statistics provided by this component should be identical on all nodes in the same cluster.

Mib	BaseRouting
Dyn. Subcomp.	COMPONENT Rtg Top PerfStats LinkGroupStatistics (LgStats)
Common Verbs	Help List Display

COMPONENT Rtg Top PerfStats LinkGroupStatistics (LgStats)

Instance	String (1..12, ASCII)
Scope	Network
Description	*Rtg Top PerfStats LgStats/<aNeighborNodeName>* This component is a dynamic subcomponent of *Rtg Top PerfStats* component. It provides statistics of topology protocol packets that are

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transmitted to and received from the neighbor node identified by the *LgStats* component.

Note that there is one *LgStats* instance per locally staged *Lg* on this node. Topology protocol packets are exchanged only between neighbor nodes that are in the same flat topology region, region's backbone, or cluster, they are not sent across a topology region border nor a backbone-cluster border. Therefore, for each locally staged *Lg* that is in the same flat topology region, region's backbone, or cluster in which this node resides, there is one *LgStats* instance added to record the statistic of topology protocol packets that are transmitted to and received from the neighbor node.

Statistics maintained by an *LgStats* instance only exist for the duration of the *Lg* component. When the *Lg* to a neighbor goes down and then comes back, statistics maintained by the corresponding *LgStats* instance will be reset and restart from zero.

Mib: BaseRouting

Common Verbs:
Help
List
Display

COMPONENT Rtg PathOrientedRoutingSystem (Pors)

Groups: GROUP Rtg Pors Provisioned (Prov)
GROUP Rtg Pors Information (Info)

Scope: Application

Description: This is the *Routing PathOrientedRoutingSystem* Component. It is used to display attributes of the PORS connections on a module and attributes for setting optimization timing for PORS connections. The *PathOrientedRoutingSystem* component also optimizes PORS connections on this module.

Mib: PorsVc

Opt. Subcomp.: COMPONENT Rtg Pors Profile (Prof)
COMPONENT Rtg Pors ManualPath (Mpath)

Common Verbs:
Help
List
Display
Add
DELete

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VERB Optimize (Opt) Rtg Pors

Impact	Service
Description	Optimize [-segmented] Rtg Pors If this module is not optimizing, this command forces an optimization process to begin immediately. Optimization is carried out on each active connection, on the module, at a rate of one per second. If no option is specified, all unsegmented PORS connections sourced on the module that allow optimization will attempt to optimize. If the -segmented option is specified, disruptive optimization will be triggered for segmented calls. Calls sourced on the module that are specified in the *optimizationScope* attribute and that allow optimization will be selected. Simultaneous optimization of segmented and unsegmented call types is not permitted. This command may be used regardless of whether periodic optimization has been disabled by setting the *optimizationInterval* to zero.

GROUP Rtg Pors Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for the *Routing PathOrientedRoutingSystem* component.
Mib	PorsVc

ATTRIBUTE Rtg Pors optimizationInterval

Access	Read and write
Description	This attribute specifies the interval at which periodic optimization occurs. The time defined is from the end of one optimization pass until the start of another pass. Periodic optimization has no effect on segmented calls. If an interval of zero is specified periodic optimization is disabled on this module.
Mib	PorsVc
Values	Decimal (0; 1..1440)
Units	minutes
Default	30

ATTRIBUTE Rtg Pors optimizationScope (opts)

Access	Read and write
Description	This attribute specifies the type of routing point that is considered for segmented optimization. Note that only routing points that are sourcing

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call segments can be considered. Segmented optimization occurs when the destination node of the call segment is switched, or when an alternate path to the existing call segment destination node has at least a 10% improvement in path cost over the current path. Segmented optimization is disruptive to the call or calls being optimized. Three types of routing points can be selected as candidates for segmented optimization.

applicationService:
The source application. Enabling this routing point selects all calls sourced on the node. Call disruption will affect all call segments.

outboundRGty:
The outbound gateway that is leaving the region or cluster. Enabling this routing point selects all calls leaving the region or cluster from this node. Call disruption is from the outbound link to the destination node.

inboundRGty:
The inbound gateway that is entering a new region or cluster. Enabling this routing point will select all calls that enter the region or cluster through this node. Call disruption is from the current node to the destination node.

Mib	PorsVc
Set of	applicationService inboundRGty outboundRGty
Default	No default

GROUP Rtg Pors Information (Info)

Properties	Operational
Description	This group contains operational information for the *PathOrientedRoutingSystem* component.
Mib	PorsVc

ATTRIBUTE Rtg Pors activeConnections

Access	Read only
Description	This attribute is the current number of active PORS connections on this module. Active connections are connections that are in the Logical Connection component ***pathUp*** *state*. This value is updated when requested and represents the current number of active PORS connections. During *Pors* optimization this number represents all the connections that receive optimization requests.
Mib	PorsVc
Values	Decimal (0..65535)

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Default	No default

ATTRIBUTE Rtg Pors optimizationState

Access	Read only
Description	This attribute is the current state of the *Pors* optimization. The ***disabled*** state means that the *optimizationInterval* has been set to zero. The ***scheduled*** state means that the optimization will be started at the *nextOptimizationTime.* The optimizing state means that *Pors* is currently attempting to optimize all connections on the module.
Mib	PorsVc
Values	disabled scheduled optimizing
Default	No default

ATTRIBUTE Rtg Pors lastOptimizationTime

Access	Read only
Description	This attribute specifies the time that the last optimization started.
Mib	PorsVc
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtg Pors nextOptimizationTime

Access	Read only
Description	This attribute specifies the time the next optimization process will begin. In the event that *optimizationInterval* is set to zero this value is also set to 0.
Mib	PorsVc
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtg Pors optimizationPasses

Access	Read only
Description	This is the number of optimization passes for the PORS connection manager. An optimization pass consists of a notification to each active PORS connection to attempt to optimize. All types of optimization passes are included in this statistic.
Mib	PorsVc

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Pors optimizationProgress

Access	Read only
Description	This attribute is the percentage of active connections that have been sent an optimization request. A message is sent to each *Pors* component LC requesting it to optimize its route. This value is cleared at the beginning of each optimization pass.
Mib	PorsVc
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Rtg Pors pathsOptimized

Access	Read only
Description	This attribute is the number of successfully optimized paths for the latest optimization pass. Successfully optimized paths are paths that switched to a better route. This value is cleared at the beginning of each optimization pass.
Mib	PorsVc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtg Pors totalPathsOptimized

Access	Read only
Description	This attribute is the number of successfully optimized paths on this module since the CP became active.
Mib	PorsVc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtg Pors Profile (Prof)

Instance	Decimal (1..255)
Groups	GROUP Rtg Pors Prof Provisioned (Prov)
Scope	Application

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Description	*Rtg Pors Prof/n* This component includes all attributes which may generically apply to a set of *LogicalConnections*. It is basically identical to the *PermanentLogicalConnection* except it does not include a *remoteName* or *manualPath* attribute. The specification of emission and discard priority is also a bit different in that they may be left unspecified in which case the emission and discard priority of the connection will be selected by the application.
Mib	PorsVc
Common Verbs	Help List Display Add DELete

GROUP Rtg Pors Prof Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for a PORS profile..
Mib	PorsVc

ATTRIBUTE Rtg Pors Prof setupPriority (spri)

Access	Read and write
Description	This attribute specifies the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, specifies the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	PorsVc
Values	Decimal (0..4)
Default	2

ATTRIBUTE Rtg Pors Prof holdingPriority (hpri)

Access	Read and write
Description	This attribute specifies the priority that a path holds once it is established. Zero is the highest priority and four is the lowest. A path's *holdingPriority* determines this path's likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.

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Mib	PorsVc
Values	Decimal (0..4)
Default	2

ATTRIBUTE Rtg Pors Prof requiredTxBandwidth (tbw)

Access	Read and write
Description	This attribute specifies the bandwidth (in bits per second) reserved by a path on each of the trunks of its route.This attribute represents the bandwidth for traffic outgoing to the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced but is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value. A value of 0 (the default) means that the bandwidth will be the Peak Cell Rate for CLP0+1 as chosen by the user. A non zero value overrides this reservation.
Mib	PorsVc
Values	Decimal (0..155520000)
Units	bit/s
Default	0

ATTRIBUTE Rtg Pors Prof requiredRxBandwidth (rbw)

Access	Read and write
Description	This attribute specifies the bandwidth (in bits per second) reserved by a path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced but is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value. A value of 0 (the default) means that the bandwidth will be the Peak Cell Rate for CLP0+1 as chosen by the user. A non zero value overrides this reservation.
Mib	PorsVc
Values	Decimal (0..155520000)
Units	bit/s
Default	0

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ATTRIBUTE Rtg Pors Prof requiredTrafficType (rttyp)

Access	Read and write
Description	This attribute specifies the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.
Mib	PorsVc
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	data

ATTRIBUTE Rtg Pors Prof permittedTrunkTypes (pttyp)

Access	Read and write
Description	This attribute specifies up to eight types of trunk that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the *Trunk* component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	PorsVc
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Rtg Pors Prof requiredSecurity (rsec)

Access	Read and write

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Description	This attribute specifies the required minimum level of security of the trunks on the route. A value of zero represents the most secure while seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the *Trunk* component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	PorsVc
Values	Decimal (0..7)
Default	4

ATTRIBUTE Rtg Pors Prof requiredCustomerParm (rcparm)

Access	Read and write
Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. Its value, a number from zero to seven, is chosen by network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	PorsVc
Values	Decimal (0..7)
Default	4

ATTRIBUTE Rtg Pors Prof pathAttributeToMinimize (pamin)

Access	Read and write
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metric for all trunks included in the route.
Mib	PorsVc
Values	cost delay
Default	cost

ATTRIBUTE Rtg Pors Prof maximumAcceptableCost (maxCost)

Access	Read and write
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the

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trunkCost is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done regardless of the value of *pathAttributeToMinimize*. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.

Mib	PorsVc
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Rtg Pors Prof maximumAcceptableDelay (maxDelay)

Access	Read and write
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delay of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512 byte packet. Remember, that during its staging, the trunk measures a *measuredRoundTripDelay*. This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512 byte data packet is used to perform the measurement. If for any trunk, half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay*.
Mib	PorsVc
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Rtg Pors Prof emissionPriority (epri)

Access	Read and write
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. An *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher). The default value for this attribute *(sameAsApplication)* will cause the connection's emissionPriority to be inherited from the user of the profile. In other words, setting this attribute to

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	anything other than the default acts as an override to the priority normally used by the application linked to this profile.
Mib	PorsVc
Values	sameAsApplication ep0 ep1 ep2
Default	sameAsApplication

ATTRIBUTE Rtg Pors Prof discardPriority (dpri)

Access	Read and write
Description	This attribute specifies the importance of the packets on the path. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically lower) are discarded after packets with a higher *discardPriority* (numerically higher). The default value for this attribute *(sameAsApplication)* will cause the connection's discardPriority to be inherited from the user of the profile. In other words, setting this attribute to anything other than the default acts as an override to the priority normally used by the application linked to this profile.
Mib	PorsVc
Values	sameAsApplication dp1 dp2 dp3
Default	sameAsApplication

ATTRIBUTE Rtg Pors Prof pathFailureAction (pfa)

Access	Read and write
Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.
Mib	PorsVc
Values	reRoutePath disconnectConnection

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Default	reRoutePath

ATTRIBUTE Rtg Pors Prof bumpPreference (bpref)

Access	Read and write
Description	This attribute specifies when bumping may be triggered as a result of this call being routed/rerouted or optimized. There are two possibilities: ***bumpWhenNecessary***: means that this call will only trigger the bumping of another call (subject to setup/holding priority restrictions) when there is no other way to establish a route for this call. ***bumpToObtainBestRoute***: means that this call may trigger the bumping of other calls (subject to setup/holding priority restrictions) if doing so would result in this call obtaining a better (lower cost/delay) route. Since bumping to obtain the best route can be somewhat intrusive the default is only to bump when there is no other way to route the call.
Mib	PorsVc
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Rtg Pors Prof optimization (opt)

Access	Read and write
Description	If this attribute is ***enabled***, this connection will be optimized periodically as specified by the *Rtg Pors* attribute *optimizationInterval*. If this attribute is ***disabled***, the connection will use the route it was given for the life of the connection or until a failure or *lock* results in the call being rerouted.
Mib	PorsVc
Values	disabled enabled
Default	enabled

ATTRIBUTE Rtg Pors Prof users (usr)

Access	Read only
Description	This attribute specifies all of the components which are associated with this *Profile*. Users of this profile will select and instantiate routes based on the attributes of this profile when PORS is used to choose and instantiate the route. If IISP or PNNI are used to choose and instantiate the route these attributes are ignored since they have no counterparts in IISP or PNNI routing.
Mib	PorsVc
List of	Link (Service, profile)
Default	No default

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COMPONENT Rtg Pors ManualPath (Mpath)

Instance	Decimal (1..255)
Groups	GROUP Rtg Pors Mpath Provisioned (Prov) GROUP Rtg Pors Mpath Operational (Oper)
Scope	Application
Description	*Rtg Pors ManualPath/n* This component specifies the sequence of *Trunk*s used by a service as the route between source and destination nodes. Services with a link to this component bypass PORS automatic route selection in favor of the route specified in the *route* attribute. This component, along with the *Rtg Pors Profile/n* component and the signaled called party NSAP address, determine the end to end path. An instance of this component should be provisioned for every unique list of *Trunks* used as a route by a service bypassing PORS automatic routing.
Mib	PorsVc
Common Verbs	Help List Display Add DELete

GROUP Rtg Pors Mpath Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for a PORS manual path.
Mib	PorsVc

ATTRIBUTE Rtg Pors Mpath route

Access	Read and write
Description	This attribute specifies the sequence of trunks used as the route for a path. If any trunk in the sequence does not meet the requirements (bandwidth, permittedTrunkType, security, customerParm, etc.) for a component listed in *users*, path validation fails and no path is instantiated for that user. Changing this attribute will cause active connections of users of this *ManualPath* to move to the new route only if the users have *optimization* ***enabled*** and *Rtg Pors optimizationInterval* > 0. Otherwise, changing this attribute will cause the users' current connections to stay on the old *route* with all new calls instantiating their paths with the new *route*. Optimization can be disabled by having the application use a *Rtg Pors Prof/n* component with *optimization* ***disabled*** or by setting *Rtg Pors optimizationInterval* ***0***. As an example, the trunk component name for the trunk instance 10 on node MoonBase is *EM/MoonBase Trk/10*. These strings are case

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	insensitive but the complete component name must be input. Note 1: the trunk designation must be in the 3-letter form 'trk'. Note 2: only the outbound trunk component names are used to provision the *route*.
Mib	PorsVc
Vector of	String (0..40, ASCII)
Index	Decimal (0..19)
Default	([20] "")

ATTRIBUTE Rtg Pors Mpath **users (usr)**

Access	Read only
Description	This attribute specifies all of the components that will use this *ManualPath* to instantiate a path. Users of this component have paths that follow the sequence of *Trunks* specified in the *route* attribute of this component when PORS is used to choose and instantiate the route.
Mib	PorsVc
List of	Link (Service, porsManualPath)
List Size	30
Default	No default

GROUP Rtg Pors Mpath **Operational (Oper)**

Properties	Operational
Description	This group contains operational information for the *Rtg Pors ManualPath/n* component.
Mib	PorsVc

ATTRIBUTE Rtg Pors Mpath **lastSetupFailureReason (lfr)**

Access	Read only
Description	This attribute indicates the reason for the most recent failure for an attempted connection using this *ManualPath*'s *route*. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the *Trunks* for this path in the transmit direction. If a trunk in the *route* attribute was previously locked, or has a *Trk PA* subcomponent that is not in the ***up*** *state* , that *Trunk* is considered as having no available bandwidth. If the *Trunk PA* is in ***mapped*** *mode*, the inability to allocate an *Atmif Vcc* also results in this failure reason. ***insufficientRxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the *Trunks* for this path in the receive direction. If a trunk in the *route* attribute

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was previously locked, or has a *Trk PA* subcomponent that is not in the ***up*** *state* , that *Trunk* is considered as having no available bandwidth.
trunkFailure- A *Trunk* on the path has failed or has gone down, due to a provisioning change of a critical attribute, as the path was being established.
trunkCardFailure- A *Trunk* FP card has failed along the path as the path was being established.
accessCardFailure- The FP on which the peer access service was running has failed as the path was being established.
operatorForced- The path has terminated due to the operator locking a *Trunk* along the path as the path was being established.
lostLcnClash- The path has terminated because the *Trk PA*'s at both ends of an intermediate trunk have allocated the same *Trk LC* to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different *Trk LC*'s). It is normal to get the odd clash especially when the *Trk PA usedLC* is approaching the *Trk PA maxLC*. An LCN clash results in the path failing to instantiate only if the application disabled rerouting. By default rerouting is enabled for all applications. Applications can disable rerouting by using a *Rtg Pors Prof/n* component with *pathFailureAction* set to ***disconnectConnection***.
networkCongestion - The path has failed to establish due to control information being lost and not being recoverable.
trunkNotFound - Check for *Trunks* not up or names provisioned incorrectly in *route* attribute .
farEndNotFound - The far end is not provisioned or is not up. The called NSAP address cannot be reached through the last node in the *Rtg Pors ManualPath path*.
farEndBusy - The far end has been reached but it is busy. Check remote end provisioning.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
serviceTypeMismatch - The remote service type does not match this service type. Check provisioning.
bumped - Another call bumped this path, as it was being established, from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path. A manual path that is bumped fails to instantiate if it cannot bump another path along the same *route*, or if it has *pathFailureAction* set to ***disconnectConnection***.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a *mode* required by the service was not supported by one of the *Trunks* the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on *Trk Pa Atm* component.

Mib — PorsVc

Values — none
insufficientTxLcOrBandwidth

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insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
farEndBusy
unknownReason
farEndNotReady
serviceTypeMismatch
bumped
accessCardFailure
trunkOrFarEndDidNotSupportMode

Default none

ATTRIBUTE Rtg Pors Mpath lastSetupFailurePoint (lfp)

Access Read only

Description This attribute indicates the point in the *route* at which the path failed to establish. A failure at either end of a trunk will result in the display of the name of the trunk nearer the calling end.

Mib PorsVc

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Rtg Pors Mpath lastSetupFailedUser (lfu)

Access Read only

Description This attribute indicates the component in the *users* attribute that last failed to instantiate a path based on the *route*.

Mib PorsVc

Values The name of the component

Default No default

COMPONENT Rtg SummaryAddress (SumAddr)

Instance String (0..40, ASCII)

Groups GROUP Rtg SumAddr Prov

Scope Application

Description *Rtg SummaryAddress/<sumAddr>*
This is an optional subcomponent of the *Routing* component. It is used to summarize a set of addresses provisioned as the *Trunk/<n> Address/ <addr>* components. When one or more of those addresses have a prefix

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in common, an instance of this component can be added using the common prefix as the instance value.

If this node is not a cluster node, the summary address identified by this component will be distributed to all nodes but not to any cluster node in the Topology region.

If this is a cluster node, this summary address will be distributed to all cluster nodes located in the local cluster only. That is, the address will not be distributed outside of this cluster.

Mib BaseRouting

Common Verbs
- Help
- List
- Display
- LOCK
- Unlock

GROUP Rtg SumAddr Prov

Properties Provisioned

Description This group of attributes specifies the provisionable characteristics of the *Routing SummaryAddress* component.

Mib BaseRouting

ATTRIBUTE Rtg SumAddr cost (cost)

Access Read and write

Description This attribute specifies a cost of reaching the addresses summarized by the *Routing SummaryAddress/<sumAddr>* component. The value is assigned by the network administrator to represent the network cost of reaching the summarized address through this node. It can be related to distance, speed, dollars, or any other factor that could be taken into consideration.

Mib BaseRouting

Values Decimal (0..65435)

Default 200

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Rtg

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Job function: Product Fundamentals
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Language type: U.S. English

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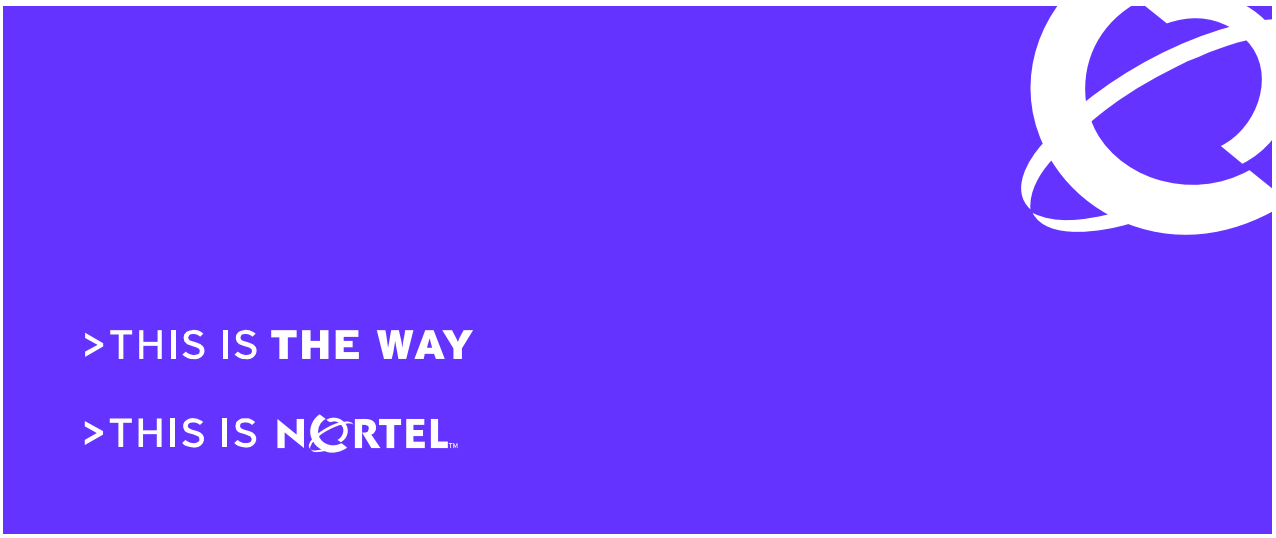

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Rtr

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COMPONENT Router (Rtr)

Instance	String (1..16, ASCII)
Groups	GROUP Rtr Provisioned GROUP Rtr CustomerIdentifierData (CidData) GROUP Rtr RouterProvisioned (RtrProv) GROUP Rtr OsiState (State) GROUP Rtr IfNumberOper GROUP Rtr Statistics (Stats)
Scope	Application
Description	*Router/<string>* The *Router* component represents an instance of a Routing Component on the platform. The purpose of the *Router* component is to provide IP routing and forwarding services as well as MPLS signalling and forwarding services. At any time, the number of Routing Components (*Router, VpnRouteForwarder* and *VirtualRouter)* existing in the current view plus the number of newly created Routing Components in the edit view must be less than the maximum allowed number of Routing Components. This is regardless of how many *VirtualRouter, VpnRouteForwarder* or *Router* components may have been deleted in the edit view. Any Routing Component which, when created in the edit view, results in a total count greater than the maximum allowed, is labelled as invalid and must be deleted. It is recommended that the deletion of any *VirtualRouter, VpnRouteForwarder* or *Router* components existing in the current view

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should be activated using the *Activate Prov* command before creating any new *VirtualRouter, VpnRouteForwarder* or *Router* components.

Mib: no_mib

Subcomponents:
COMPONENT Rtr Arp
COMPONENT Rtr Icmp
COMPONENT Rtr RelayBC
COMPONENT Rtr Udp
COMPONENT Rtr Tcp
COMPONENT Rtr MemoryManagement (Mm)

Opt. Subcomp.:
COMPONENT Rtr BootpRelayAgent (Bootp)
COMPONENT Rtr BorderGatewayProtocol (Bgp)
COMPONENT Rtr Ospf (Ospf)
COMPONENT Rtr Isis (Isis)
COMPONENT Rtr RoutingInformationProtocol (Rip)
COMPONENT Rtr Static
COMPONENT Rtr VpnRouteForwarder (Vrf)
COMPONENT Rtr Interface (If)
COMPONENT Rtr MultiprotocolLabelSwitching (Mpls)
COMPONENT Rtr RsvpTe
COMPONENT Rtr Ldp (Ldp)
COMPONENT Rtr ControlPlaneProtection (Cpp)
COMPONENT Rtr DifferentiatedServicesDomain (Dsd)

Dyn. Subcomp.:
COMPONENT Rtr Cache
COMPONENT Rtr ForwardTable (Fwd)
COMPONENT Rtr RouteDataBaseEntry (Rdb)

Common Verbs:
Help
List
Display
Add
DELete

VERB TELNET Rtr

Impact: Passive

Description: *Telnet -ipAddress(<IP address>) Rtr/<string>*

This command allows access to the Telnet client, attempting to set up a connection from this node to the specified IP address within the specified Router address space.

Options:
ipAddress - This mandatory option specifies the IP address of the remote node to which the user wants to Telnet within this Router's address space.

GROUP Rtr Provisioned

Properties: Provisioned

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Description	This group contains the router attributes common to the *Router* and *Router VpnRouteForwarder* components.
Mib	no_mib

ATTRIBUTE Rtr sourceRoute

Access	Read and write
Description	This attribute specifies whether or not this *Router* or *VpnRouteForwarder* allows processing of datagrams which have a source route IP option.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr cacheTableSize (cts)

Access	Read and write
Description	This attribute specifies the maximum number of entries that can exist in the local cache table on each *Lp* for this *Router* or *VpnRouteForwarder*. This attribute provides a way to control the resources allocated to the IP cache tables. The default cache table size is *300* for an FP and *100* for a CP. The attribute value must be a multiple of 100.
Mib	no_mib
Vector of	Decimal (100..8000)
Index	Decimal (0..15)
Default	([1] 100, [15] 300)

GROUP Rtr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

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Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr RouterProvisioned (RtrProv)

Properties	Provisioned
Description	This group contains provisioned attributes specific to the *Router* component.
Mib	no_mib

ATTRIBUTE Rtr virtualRouterProcessor (vrp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *LogicalProcessor* on which this *Router* resides. The following card types may support a *Router* component: ***CP*** ***CPeD*** ***CPeE*** ***VpnXc*** WARNING: When changing this attribute the *operationalState* of the *LogicalProcessor* originally associated with this *Router* must be ***enabled*** when the provisioning is activated. This is required for the IP control path to be updated correctly on all media logical processors. If the original *LogicalProcessor* is not ***enabled*** when the provisioning is activated then the IP control path for all medias under this *Router* will be disabled. The only method to recover the IP control path is to reset the LogicalProcessor for each of the associated medias.
Mib	no_mib
Values	Link (Hardware, linkToApplications)
Default	No default

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GROUP Rtr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr IfNumberOper

Properties	Operational
Description	This group contains the ifNumber attribute.
Mib	no_mib

ATTRIBUTE Rtr ifNumber (ifN)

Access	Read only
Description	This attribute defines the number of *IfEntries* in the *IfTable*.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

GROUP Rtr Statistics (Stats)

Properties	Operational
Description	This is the GROUP holding the struct which contains statistical attributes for IP.
Mib	no_mib

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ATTRIBUTE Rtr inReceives

Access	Read only
Description	This is the number of input datagrams received from the interfaces, including those received in error. *inReceives* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inHdrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discovered in processing their IP options, etc. *inHdrErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inAddrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors such as invalid address, unsupported address class. *inAddrErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr forwDatagrams

Access	Read only
Description	The number of input datagrams for which this router was not their final IP destination, as a result of which an attempt was made to find a route to forward them to that final destination. *forwDatagrams* wraps to zero if reaches it's maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rtr inUnknownProtos

Access	Read only
Description	The number of locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol *inUnknownProtos* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inDiscards

Access	Read only
Description	The number of input datagrams for which no problems were encountered to prevent their continued processing, but which were discarded due to the lack of buffers. This does not include any datagram discarded while awaiting for re-assembly. *inDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inDelivers

Access	Read only
Description	The number of input datagrams successfully delivered to IP user-protocols (including ICMP). *inDelivers* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr outRequests

Access	Read only
Description	The number of datagrams which local IP user-protocols (including ICMP) supplied to IP in requests for transmission. This sum does not include datagrams counted in *ForwDatagrams*. *outRequests* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rtr outDiscards

Access	Read only
Description	The number of outbound datagrams that were discarded due to the lack of buffers. This sum also includes datagrams counted in *forwDatagrams* if any such packets met the discard criterion. *outDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr outNoRoutes

Access	Read only
Description	The number of outbound datagrams discarded because no route could be found to transmit them to their destination. This counter includes any datagrams counted in *forwDatagrams*. *outNoRoutes* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr reasmTimeOut

Access	Read only
Description	The maximum number of seconds, which received fragments are held while they are awaiting reassembly at this gateway.
Mib	no_mib
Values	Decimal (0..5)
Units	seconds
Default	5

ATTRIBUTE Rtr reasmReqds

Access	Read only
Description	The number of the IP fragments received by this gateway which needed to be reassembled. *reasmReqds* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rtr reasmOks

Access	Read only
Description	The number of IP fragments successfully reassembled by this gateway. *reasmOks* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr reasmFails

Access	Read only
Description	The number of times this gateway is unabled to assemble IP-fragments for whatever reasons. *reasmFails* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr fragOks

Access	Read only
Description	The number of IP datagrams that have been successfully fragmented by this gateway. *fragOks* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr fragFails

Access	Read only
Description	The number of IP-fragments that have been discarded because they needed to be fragmented but could not be. For example, their Don't Fragment flag was set. *fragFails* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr fragCreates

Access	Read only

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Description	This number of IP fragments that have been generated as a result of fragmentation by this gateway. *fragCreates* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr routingDiscards

Access	Read only
Description	The number of routing entries which were chosen to be discarded even though they are valid. One possible reason for discarding such an entry could be to free -up buffer space for other routing entries. In this implementation, this number is always zero because IP never deletes a valid routing entry.
Mib	no_mib
Values	Decimal (0..0)
Default	0

ATTRIBUTE Rtr inSrcRouteDiscards

Access	Read only
Description	The number of input datagrams which had a source route IP option and were discarded because this functionality is not allowed for this Routing Component. *srcRouteDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Arp

Groups	GROUP Rtr Arp Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Arp* *Rtr/<string> Arp*

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Rtr/<string> Vrf/<string> Arp
The component specifies the Address Resolution Protocol.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Arp HostEntry (Host)
Dyn. Subcomp.	COMPONENT Rtr Arp DynHostEntry (DynHost)
Common Verbs	Help List Display

VERB Clear **Rtr Arp**

Impact	Passive
Description	*Clear [-logicalIf(Ip Address)] [-includeInverse] Vr/<string> Ip Arp* *Clear [-logicalIf(Ip Address)] [-includeInverse] Rtr/<string> Arp* The *Clear* verb is intended for manually flushing dynamically learned ARP entries. Without any options, *Clear* will flush all non-inverse dynamic ARP entries. The *Clear* verb does not affect static ARP host entries, that is, entries which correspond to *HostEntry* subcomponents of this component. These entries can be removed by deleting the corresponding provisioned *HostEntry* component. The *-logicalIf* or *-interface* option is used to flush dynamic ARP entries which were learned on a particular *IpPort LogicalInterface* or *Interface*. The option must specify the IP address of an existing *IpPort LogicalInterface* (which may be under any *ProtocolPort) or Interface*. The *-includeInverse* option is used to force the deletion of inverse ARP entries. Inverse ARP entries which are learned through inverse ARP (*FrDte*) and inverse ATM ARP (*AtmMpe*) are important and should not be cleared by the users accidentally. If the option is not present, inverse ARP entries are not cleared.

GROUP **Rtr Arp** **Provisioned (Prov)**

Properties	Provisioned
Description	The ARP refresh feature allows the router to periodically verify ARP table entries. Whenever the router updates an ARP entry, or creates a new entry, a timeout value is assigned to the entry. When the timeout for an entry expires, the router will send a unicast ARP request to the currently-known physical address. If an ARP response comes back, the entry will be assigned a new timeout. If, however, the host has gone away or been assigned a new physical address, the host will not respond to the unicast ARP, and the entry will be removed from the ARP table. The new physical address will be discovered through the normal ARP mechanism when the next communication is attempted to the host.

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Mib	no_mib

ATTRIBUTE Rtr Arp autoRefresh

Access	Read and write
Description	This attribute is used to enable or disable the ARP refresh feature.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Arp autoRefreshTimeout

Access	Read and write
Description	This attribute defines the timeout value, in minutes, which is assigned to updated ARP entries, or newly created ARP entries. The range for the timeout is 1 minute to 1440 minutes (24 hours).
Mib	no_mib
Values	Decimal (1..1440)
Units	minutes
Default	5

ATTRIBUTE Rtr Arp retryTimes

Access	Read and write
Description	This attribute defines the number of times that an ARP request will be sent to a remote host if there is no reply received. This value is assigned when ARP entries are updated or created. The range of the value can be from 0 to 127.
Mib	no_mib
Values	Decimal (0..127)
Units	times
Default	127

COMPONENT Rtr Arp DynHostEntry (DynHost)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	GROUP Rtr Arp DynHost Operational (Oper)

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Scope	Application
Description	*Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Router/<string> Arp DynHostEntry/<Ip Address>* *Router/<string> Vrf/<string> DynHostEntry/<Ip Address>* This component is a table that contains all Arp host entries (both static and dynamic). Each IP ARP entry in the table is uniquely defined by its IP address and connection class (cos) value. For *Vr*, when associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap,*** and ***atmMpeVcEncap***, the connection class value of the arp entry is ***0, 1, 2,*** or ***3*** . For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis). For *Router* or *Vrf*, when the media associated with the interface is *atmMpe* or *IpoDlci*, the connection class value of the arp entry is ***0, 1, 2,*** or ***3***. For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis). An IP packet that has been assigned a particular connection class value will be forwarded using the arp entry which corresponds to the next hop gateway IP address and matching connection class value where the next hop gateway IP address is determined via a forwarding table look up on the packet's destination IP address. When there are arp entries that match the next hop gateway IP address, but not the packet's connection class, then the packet will be forwarded using the arp entry that has the next lowest connection class value; failing this, the packet will be forwarded using the arp entry that has the next highest connection class value.
Mib	no_mib
Common Verbs	Help List Display

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VERB Clear Rtr Arp DynHost

Impact	Passive
Description	*Clear [-inverse] Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Vrf/<string> Arp DynHostEntry/<Ip Address>* The *Clear* verb is used to delete the single dynamically learned ARP entry that is represented by this component. The *Clear* command does not affect static ARP host entries, that is, entries whose *type* attribute has the value ***static***. These entries can be removed by deleting the corresponding provisioned *HostEntry* component under *Arp*. The *-inverse* option deletes the ARP entry even if it was an inverse ARP entry. Inverse ARP entries are learned through inverse ARP (*FrDte* or *IpoDlci*) and inverse ATM ARP (*AtmMpe*), and should not be removed by the users accidentally. If the option is not present, an inverse ARP entry is not cleared.

GROUP Rtr Arp DynHost Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *DynHostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Arp DynHost physAddress

Access	Read only
Description	This attribute indicates the physical address of the host in canonical form.
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Rtr Arp DynHost maxTxUnit (mtu)

Access	Read only
Description	This attribute indicates the maximum MTU size that can be accepted by the host.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	0

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ATTRIBUTE Rtr Arp DynHost **encapsulationType (encap)**

Access	Read only
Description	This attribute indicates the encapsulation type of the host.
Mib	no_mib
Values	ieee8023 ethernet notApplicable
Default	No default

ATTRIBUTE Rtr Arp DynHost **permanentVirtualCircuitNumber (pvcNo)**

Access	Read only
Description	This attribute indicates the permanent virtual circuit number to the remote host.
Mib	no_mib
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE Rtr Arp DynHost **ifIndex**

Access	Read only
Description	This attribute indicates the *ifIndex* of the protocol port that is associated with this entry.
Mib	no_mib
Values	Decimal (1..65535)
Default	1

ATTRIBUTE Rtr Arp DynHost **type**

Access	Read only
Description	This attribute indicates how this entry was learned.
Mib	no_mib
Values	pending invalid dynamic static
Default	No default

ATTRIBUTE Rtr Arp DynHost **ncPhysAddress**

Access	Read only

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Description	This attribute indicates the physical address of the host in non-canonical form. This attribute is not displayed for hosts on non-LAN media.
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Rtr Arp DynHost tunnelDestinationAddress (tda)

Access	Read only
Description	This attribute indicates the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	no_mib
Values	IP address
Default	0.0.0.0

COMPONENT Rtr Arp HostEntry (Host)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	GROUP Rtr Arp Host Provisioned (Prov) GROUP Rtr Arp Host Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Arp HostEntry/<Ip Address>,<cos>* *Rtr/<string> Arp HostEntry/<Ip Address>,<cos>* *Rtr/<string> Vrf/<string> Arp HostEntry/<Ip Address>,<cos>* This component defines a static host entry in the ARP table. For *Vr*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***. For other media types, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis). For *Router* and *Vrf*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the media associated with the interface is *AtmMpe* or *IpoDlci*. For

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other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Arp Host **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *HostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Arp Host **physAddress**

Access	Read and write
Description	This attribute identifies the physical address of the host being defined. The value for this attribute should only be specified for media types supporting physical addresses (e.g. ethernet, fddi, tokenRing etc.)
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Rtr Arp Host **maxTxUnit (mtu)**

Access	Read and write
Description	Specify the maximum transmit unit (MTU) size that can be accepted by the host. If this value is not specified, the value for the media interface is used. The specified MTU must be less than or equal to the interface's MTU size.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Rtr Arp Host **permanentVirtualCircuitNumber (pvcNo)**

Access	Read and write
Description	This attribute specifies the number of the PVC for the static host entry. It is the instance number of the X.25 media, Frame Relay media, and of the *AtmConnection* component on the ATM MPE interface..
Mib	no_mib

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Values	Decimal (0..4095)
Default	0

ATTRIBUTE Rtr Arp Host tunnelDestinationAddress (tda)

Access	Read and write
Description	This attribute specifies the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Arp Host encap

Access	Read and write
Description	This attribute specifies the encapsulation type for the host. The value for this attribute should only be specified for the hosts on the ethernet media. If a value of ***auto*** is specified, the application based on the media will determine the proper applicable encapsulation type.
Mib	no_mib
Values	ieee8023 ethernet auto
Default	auto

GROUP Rtr Arp Host Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *HostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Arp Host operMaxTxUnit (operMtu)

Access	Read only
Description	This attribute indicates the operational value of the maximum transmission unit.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	No default

ATTRIBUTE Rtr Arp Host operEncap

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Access	Read only
Description	This attribute indicates the operational encapsulation type. if the value of the attribute *encap* is set to ***auto***, then the application will determine the encapsulation type based on the media being used and assigns the appropriate value.
Mib	no_mib
Values	ieee8023 ethernet notApplicable
Default	No default

COMPONENT Rtr BootpRelayAgent (Bootp)

Groups	GROUP Rtr Bootp AdministrativeControl (AdminControl) GROUP Rtr Bootp Provisioned (Prov) GROUP Rtr Bootp OsiState (State) GROUP Rtr Bootp OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent* *Rtr/<string> BootpRelayAgent* *Rtr/<string> Vrf<string> BootpRelayAgent* The *BootpRelayAgent* component contains all the necessary attributes and components to provision a BOOTP relay agent. The BOOTP relay agent functionality conforms to that described in RFCs 951 and 1542. The purpose of the BOOTP relay agent is to forward BOOTP request packets from a client to a server, and also to deliver server BOOTP replies back to the client. When a BOOTP request is received on a port, the request will be sent to a provisioned list of IP addresses for that port. In addition, the request will be broadcast out all other BOOTP ports which allow it.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Bootp BootpPortEntry (PpE)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Bootp AdministrativeControl (AdminControl)

Properties	Provisioned

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Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Bootp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Bootp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *BootpRelayAgent* component.
Mib	no_mib

ATTRIBUTE Rtr Bootp hopDiscardThreshold (hops)

Access	Read and write
Description	BOOTP packets contain a ‘hops’ field which is used to limit the number of relay agents that can process the packet (each relay agent increments the ‘hops’ field by one). This attribute is used by the relay agent to determine when to discard a BOOTP packet. If the ‘hops’ field exceeds the *hopDiscardThreshold* the BOOTP packet will be discarded.
Mib	no_mib
Values	Decimal (2..16)
Default	4

GROUP Rtr Bootp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	no_mib

ATTRIBUTE Rtr Bootp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Bootp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Bootp usageState (osiUsage)

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Bootp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Bootp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Bootp BootpPortEntry (PpE)

Instance	String (1..20, ASCII)
Groups	GROUP Rtr Bootp PpE Operational (Oper) GROUP Rtr Bootp PpE Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent BootpPortEntry/<string>* *Rtr/<string> BootpRelayAgent BootpPortEntry/<string>* *Rtr/<string> Vrf/<string> BootpRelayAgent BootpPortEntry/<string>* The *BootpPortEntry* component contains information about the

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provisioned *BootpPort*. This component is indexed by a string which represents a *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface* component name.

Mib no_mib

Common Verbs
Help
List
Display

GROUP Rtr Bootp PpE Operational (Oper)

Properties Operational

Description This group contains *BootpPortEntry* component operational data.

Mib no_mib

ATTRIBUTE Rtr Bootp PpE status

Access Read only

Description This attribute indicates the status of the provisioned *BootpPortEntry* component. A value of ***disabled*** is used when the parent components is in a disabled state. A value of ***up*** is used when the *BootpPortEntry* is in an operational state. A state of ***down*** is used if the media associated with the *BootpPortEntry* is not ready or disabled.

Mib no_mib

Values
up
down
disabled

Default No default

GROUP Rtr Bootp PpE Statistics (Stats)

Properties Operational

Description This group contains *BootpPortEntry* component statistics.

Mib no_mib

ATTRIBUTE Rtr Bootp PpE inRequests

Access Read only

Description This attribute counts the total number of BOOTP Request messages received on this port.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

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ATTRIBUTE Rtr Bootp PpE inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr

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field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

COMPONENT Rtr Cache

Instance Decimal (0..15)

Groups GROUP Rtr Cache OsiState (State)
GROUP Rtr Cache Operational (Oper)

Scope Application

Description *Vr/<string> Ip Cache/n*
Rtr/<string> Cache/n
Rtr/<string> Vrf/<string> Cache/n
This component represents the IP cache table on LP *n*.

Mib no_mib

Common Verbs Help
List
Display

VERB Clear Rtr Cache

Impact Service

Description *Clear Vr/<string> Ip Cache/n*
Clear Router/<string> Cache/n
Clear Router/<string> Vrf/<string> Cache/n
This verb clears all entries in the cache table on LP *n*. This command deletes all the *Entry* subcomponents of *Cache/n*.

GROUP Rtr Cache OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Cache adminState (osiAdmin)

Access Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Cache operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Cache usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Cache Operational (Oper)

Properties	Operational
Description	This group houses all the operational attributes of an *Ip* cache table.
Mib	no_mib

ATTRIBUTE Rtr Cache entriesFree (ef)

Access	Read only
Description	This attribute is indicative of the number of free *Ip* cache table entries. A consistently high value for this attribute indicates that there is a resource surplus of the memory requirements for cache table. This surplus could be utilized elsewhere if needed by adjusting the appropriate *cacheTableMaxEntries* attribute. For *Vr*, *cacheTableMaxEntries* is under the *Ip* component; for *Rtr* and *Vrf*, it is under the respective components.
Mib	no_mib
Values	Decimal (0..8000)
Default	No default

ATTRIBUTE Rtr Cache totalLookups (tl)

Access	Read only
Description	This attribute indicates the total number of local cache lookups. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Cache lookupMisses (lm)

Access	Read only
Description	This attribute indicates the total number of local cache lookup misses. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	no_mib

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Cache cacheTableMaxEntries (ctme)

Access	Read only
Description	This attribute indicates the current maximum number of entries that can exist in the IP local cache table on each LP.
Mib	no_mib
Values	Decimal (0..8000)
Default	No default

COMPONENT Rtr BorderGatewayProtocol (Bgp)

Groups	GROUP Rtr Bgp Provisioned (Prov) GROUP Rtr Bgp Operational (Oper) GROUP Rtr Bgp OsiState (State) GROUP Rtr Bgp AdministrativeControl (AdminControl) GROUP Rtr Bgp OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip BorderGatewayProtocol* *Rtr/<string> BorderGatewayProtocol*

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Rtr/<string> Vrf/<string> BorderGatewayProtocol
This component is used to run the Border Gateway Protocol for IP.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Bgp ImportPolicy (Import) COMPONENT Rtr Bgp ExportPolicy (Export) COMPONENT Rtr Bgp As COMPONENT Rtr Bgp AggregatePolicy (Aggregate)
Dyn. Subcomp.	COMPONENT Rtr Bgp IndbEntry (Indb) COMPONENT Rtr Bgp LocaldbEntry (Localdb) COMPONENT Rtr Bgp OutdbEntry (Outdb) COMPONENT Rtr Bgp LocalVpn COMPONENT Rtr Bgp MBgpRibEntry (MBgpRib) COMPONENT Rtr Bgp MplsVpnRibEntry (MvRib) COMPONENT Rtr Bgp Ipv4LabelRibEntry (LRib)
Dyn. Subcomp.	COMPONENT Rtr Bgp Peer
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Bgp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Bgp* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp bgpIdentifier

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Bgp* Identifier of this *Bgp* component instance. It is picked from the IP address space, and should follow the same rule as choosing an unique IP address for *IpPort* or *Interface*.
Mib	no_mib
Values	IP address
Default	No default

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ATTRIBUTE Rtr Bgp localAs

Access	Read and write
Criticality	Component
Description	This attribute specifies the autonomous system identifier for this *Bgp* component instance.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp defaultLocalPreference (locPrf)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default degree of preference for routes. It can be overridden by the *localPreference* provisioned in *ImportPolicy*. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	144

ATTRIBUTE Rtr Bgp defaultMultiExitDisc (med)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default metric to discriminate between multiple exit points to the same adjacent autonomous system. It can be overridden by the s*endMultiExitDiscToEbgp* provisioned in *ExportPolicy*. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967294

ATTRIBUTE Rtr Bgp routeThrottleLimit (rtl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of routes in the IP forwarding table this *Bgp* component instance will process at one time to decide if a route in the IP forwarding table should be exported to a peer. This limit is

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	used because the throttling requirements are different under different network configurations.
Mib	no_mib
Values	Decimal (1..1000)
Default	250

ATTRIBUTE Rtr Bgp routeThrottleInter (rti)

Access	Read and write
Criticality	Component
Description	This attribute specifies the interval between the processing of the routes in the IP forwarding table to decide if a route in the IP forwarding table should be exported to a peer. This interval is used because the throttling requirements is different under different network configurations.
Mib	no_mib
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Rtr Bgp routeReflector (rr)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance is a Route Reflector. If the value of this attribute is ***true***, *Bgp* redistributes routes it learns from an IBGP speaker to other IBGP speakers in the AS. The rule of redistribution depends on the peer type: 1) When a route is learned from a non-client peer, it is redistributed to all the client peers within the cluster. 2) When a route is learned from a client peer, it is redistributed to all the non-client peers and also to the client peers. If the value of this attribute is ***false***, *Bgp* does not redistribute routes it learns from one IBGP speaker to other IBGP speakers in the AS.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Bgp routeReflectorCluster (rrCluster)

Access	Read and write
Criticality	Component

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Description	This attribute identifies the cluster consisting of the Route Reflector and its peer clients. When *routeReflector* of *Bgp* is ***true***, value of 0.0.0.0 or 255.255.255.255 is invalid; the default value of this attribute is same as *bgpIdentifier*. For redundancy, a cluster may have more than one Route Reflector; in this case, the value of this attribute of all the Route Reflectors in the same cluster should be same. The value of this attribute is ignored when *routeReflector* of *Bgp* is ***false***
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp redistributeIgpToIbgp (rigp)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance allows exporting of IGP routes to internal Bgp peers. IGP routes include the routes learned from OSPF, RIP, local routes and static routes. If the value of this attribute is ***true***, and if *ExportPolicy* is specified to distribute, then *Bgp* allows IGP route to be distributed to internal Bgp peers. If the value of this attribute is ***false***, *Bgp* does not allow IGP routes to be distributed to internal *Bgp* peer, even if *ExportPolicy* is specified to distribute. This attribute is set to true if and only this Bgp is part of the Carrier Manage Service, otherwise, a routing loop may result.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Bgp defaultIbgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for IBGP routes. It can be overridden by the *IbgpRtePreference* provisioned in *ImportPolicy*. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..253)
Default	122

ATTRIBUTE Rtr Bgp defaultEbgpRtePreference (ebgpPrf)

Access	Read and write

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Description	This attribute specifies this *Bgp* component instance's default routing preference for EBGP routes. It can be overridden by the *ebgpRtePreference* provisioned in *ImportPolicy*. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..253)
Default	70

ATTRIBUTE Rtr Bgp vpnPeeringTopology (topology)

Access	Read and write
Description	Under the *Vr* component, this attribute specifies the peering mode that determines if a dynamic IBGP peer is to be instantiated between this *BGP* instance and a discovered IP Tunnel endpoint on the remote customer VR. This mode controls the distribution of IP routing information among VPN sites through dynamic BGP sessions after auto-discovery has taken place. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute. Under the *Rtr* or *Rtr Vrf* component, this attribute is not used.
Mib	no_mib
Values	none hub spoke
Default	No default

ATTRIBUTE Rtr Bgp alarmGeneration (alarms)

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Bgp* instance. A value of ***all*** specifies that all BGP alarms are made visible. A value of ***normal*** specifies that all BGP alarms are made visible, except for the following: - *Bgp Peer* listening failure alarms, - *Bgp Peer* connect failure alarms, and - *Bgp* notification alarms.

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Any listening failure or connect failure alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

A value of ***none*** specifies that no BGP alarms are made visible. Any listening failure, connect failure, or “no auto discovery” alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

Note that, because the listening failure, connect failure, and “no auto discovery” alarms are triggered by state changes in the *Peer* component, they are not automatically regenerated when previously disabled alarm generation is enabled. For example, consider the following:
- If the *Bgp alarmGeneration* attribute is set to ***all*** and a *Peer* enters a listening failure state, a listening failure alarm is set against that *Peer* subcomponent.
- If the *Bgp alarmGeneration* attribute is then set to ***normal*** or ***none***, the above listening failure alarm is cleared.
- If the *Bgp alarmGeneration* attribute is then set back to ***all***, no alarm is generated because the *Peer* subcomponent has not changed state.
- If the *Peer* then exits the listening failure state, a listening failure alarm clear is generated for the *Peer*, even though there is no alarm set for that component.

When the scope of alarm generation has been increased for a *Bgp* instance, previously existing alarms which had been suppressed can be regenerated by locking and unlocking the *Bgp Peer* subcomponents.

For a *VirtualRouter* with *vpnMode* attribute be set to ***carrier***, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *VirtualRouter* with the *vpnMode* attribute set to ***customer***, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Similarly, for a *Router* component, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *Router Vrf* component, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Mib	no_mib
Values	none normal all
Default	all

ATTRIBUTE Rtr Bgp keyTransitionDelay (keyDelay)

Access	Read and write
Description	This attribute specifies a default delay period associated with a change of *md5Key* value event for the *Bgp* component. The *md5Key* is set under the *Bgp Peer Descriptor* component.

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This is the time that can elapse before the local router transitions to using the new key for transmission for all the Bgp Peer sessions' under this *Bgp* component. This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception.

This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service.

This can be overridden by the *keyTransitionDelay* provisioned under the *Bgp Peer Descriptor* component.

Mib	no_mib
Values	Decimal (1..20160)
Units	minutes
Default	10

ATTRIBUTE Rtr Bgp bgpImportRouteLimit (birl)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Bgp bgpImportRouteDiscardLimit (bird)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

GROUP Rtr Bgp Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for the *Bgp* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp tableVersion

Access	Read only
Description	This attribute indicates the version of the BGP routing table. It is incremented every time the BGP routing table changes. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp inMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages received without error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp inErrors

Access	Read only
Description	This attribute counts the total number of BGP messages received from all peers that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp inErrorMsgs

Access	Read only
Description	This attribute counts the total number of BGP NOTIFICATION messages from all the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rtr Bgp outMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages sent to peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp outDiscards

Access	Read only
Description	This attribute counts the number of BGP messages that were locally generated but were not sent out due to resource limitations within a *Bgp* instance. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp outErrorMsgs

Access	Read only
Description	This attribute counts the BGP NOTIFICATION messages sent to the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp indbSize

Access	Read only
Description	This attribute indicates the number of *Bgp* indb entries under this *Bgp* component instance.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr Bgp OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Bgp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Bgp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Rtr Bgp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Bgp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Bgp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Bgp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

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Mib	no_mib

ATTRIBUTE Rtr Bgp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Bgp Peer

Instance	IP address
Groups	GROUP Rtr Bgp Peer OsiState (State) GROUP Rtr Bgp Peer Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp Peer/<Ip Address>* *Rtr/<string> Bgp Peer/<Ip Address>* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address>* This component identifies the properties of a BGP peer. The index value of this entry identifies the IP address of that peer. This component is required for BGP to set up a peer session with a remote peer. Peers with discovered IP address are dynamic peers, where the provisioned ones are static peers.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Bgp Peer Descriptor (Desc)
Dyn. Subcomp.	COMPONENT Rtr Bgp Peer Vpn
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Bgp Peer OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Bgp Peer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Bgp Peer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Rtr Bgp Peer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Bgp Peer Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Peer* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Peer connectionState

Access	Read only
Description	This attribute indicates the current state of this BGP peer connection. The meaning of each state is as follows: ***idle*** - it is the initial state of the BGP peer connection. Error events will also cause BGP peer connection to transit to the idle state. ***connect*** - BGP has initiated a TCP connection request to this peer, and waiting for reply from that peer. ***active*** - BGP is not initiating a TCP connection request to this peer, because TCP connection failed and is waiting for connection retry time-out. ***openSent*** - a TCP connection to this peer has been established, but the OPEN message has not been successfully exchanged. ***openConfirm*** - OPEN message has been successfully exchanged with this peer, but the first KEEPALIVE message has not been received from that peer. ***established -*** the first KEEPALIVE message has been received from this peer, which means this BGP peer connection has been established. See RFC 1771 for a detailed description of BGP state transitions.
Mib	no_mib

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Values	idle connect active openSent openConfirm established
Default	idle

ATTRIBUTE Rtr Bgp Peer bgpIdentifier (bgpId)

Access	Read only
Description	This attribute indicates the BGP Identifier of this *Bgp Peer* component. It is learned from the peer through the OPEN message.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Peer versionNegotiated (vn)

Access	Read only
Description	This attribute indicates the BGP version number negotiated with this peer through the OPEN message. Currently, only BGP version 4 is supported. BGP will reject the peer connection if our peer proposes a BGP version other than 4.
Mib	no_mib
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Rtr Bgp Peer holdTimeNegotiated (htn)

Access	Read only
Description	This attribute indicates the maximum time in seconds, that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. This is the negotiated value with peer through the OPEN message. The hold time must be either zero or at least three seconds. If the negotiated hold time is zero, then periodic KEEPALIVE messages are not expected from the peer.
Mib	no_mib
Values	Decimal (0; 3..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Bgp Peer keepAliveNegotiated (kan)

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Access	Read only
Description	This attribute indicates the interval in seconds, between BGP KEEPALIVE message retransmissions. This keepalive interval will have the same ratio to the hold time negotiated with the peer as that of the locally configured keepalive and hold time. This attribute will be zero if the *holdTimeNegotiated* attribute is zero, which means periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0..21845)
Units	seconds
Default	No default

ATTRIBUTE Rtr Bgp Peer localAddressUsed (lau)

Access	Read only
Description	This attribute indicates the local IP address used for this BGP peer connection. If the *localAddressConfigured* attribute is non-zero, its value will be used. Otherwise, the local address will be assigned by TCP based on the remote IP address of this peer connection and the IP forwarding table.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Peer localPort

Access	Read only
Description	This attribute indicates the local TCP port for the connection between the BGP peers.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp Peer remotePort

Access	Read only
Description	This attribute indicates the remote TCP port for the connection between the BGP peers.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

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ATTRIBUTE Rtr Bgp Peer lastError

Access	Read only
Description	This attribute indicates the last error code and subcode seen by this *Bgp* component instance on this peer connection. The first byte of this two byte OCTET STRING contains the error code, and the second byte contains the subcode. A value of zero means that no error has occurred. Check RFC 1771 for mappings of error codes and error subcodes.
Mib	no_mib
Values	String (2, Hex)
Default	No default

ATTRIBUTE Rtr Bgp Peer connectionEstablishedTime (ceTime)

Access	Read only
Description	This attribute indicates how long since this *Peer* component's last transition to or from the ***established*** state. It is set to zero when the *Peer* component is activated.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Rtr Bgp Peer connectionEstablishedTransitions (ceTrans)

Access	Read only
Description	This attribute counts the total number of times the BGP connection state transitioned into the ***established*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inUpdateElapsedTime (iuet)

Access	Read only
Description	This attribute indicates the elapsed time in seconds since the last BGP UPDATE message was received from the peer. Each time *inUpdates* attribute is incremented, the value of this attribute is set to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds

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Default	No default

ATTRIBUTE Rtr Bgp Peer inMsgs

Access	Read only
Description	This attribute counts the number of BGP messages received without error from the BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages received on this peer connection. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inErrors

Access	Read only
Description	This attribute counts the number of messages received from this BGP peer that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages received from this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer outMsgs

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Access	Read only
Description	This attribute counts the number of locally generated BGP messages sent to this BGP peer. It does not include discarded messages. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer outUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages sent to this peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer outDiscards

Access	Read only
Description	This attribute counts the number of locally generated BGP messages not sent to this BGP peer due to resource limitations within a BGP entity. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer outErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages sent to this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inRoutes

Access	Read only

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Description	This attribute indicates the number of routes received from this BGP peer.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer peerType

Access	Read only
Description	This attribute indicates the way this peer is created. Peer is **static,** if created through provisioning or **dynamic,** if created through IP VPN auto discovery. For *Router* and *Vrf*, all peers are statically created. So, this value will always be ***static***.
Mib	no_mib
Values	static dynamic
Default	No default

ATTRIBUTE Rtr Bgp Peer authenticationType

Access	Read only
Description	This attribute indicates the authentication type of this BGP peer. If the *md5Key* attribute under the *Bgp Peer Desc* component is set to a null string, this peer's authentication type is ***none***; otherwise, if the *md5Key* attribute is set to a valid non-null string, this peer's authentication type is ***md5***. If this BGP peer's *peerType* is ***dynamic***, its authentication type is always ***none***.
Mib	no_mib
Values	none md5
Default	No default

ATTRIBUTE Rtr Bgp Peer noAuthenticationPkts

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which do not contain the MD5 authentication information, but MD5 authentication is provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a valid non-null string, but the remote BGP peer does not use MD5

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	authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Peer badAuthenticationPkts

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which fail the MD5 authentication. This type of authentication failure occurs when the *md5Key* attribute set under the local *Bgp Peer Desc* component does not match the MD5 key used by the remote BGP peer, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Peer unexpectedAuthenticationPkts

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which contain the MD5 authentication information, but MD5 authentication is not provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a null string, but the remote BGP peer uses MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Peer addressFamilyNegotiated (afn)

Access	Read only
Description	The attribute indicates the list of multi-protocol extensions negotiated on this peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

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To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamilyNegotated* list of the peer instance.

ipv4Unicast represents AFI = 1 and SAFI = 1
ipv4Vpn represents AFI = 1 and SAFI = 140 (not for RFC 2547)
mbgpVpn represents AFI = 1 and SAFI = 141 (not for RFC 2547)
ipv4MplsVpn represents AFI = 1 and SAFI = 128
ipv4Label represents AFI = 1 and SAFI = 4

Mib	no_mib
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	No default

ATTRIBUTE Rtr Bgp Peer capabilityNegotiated (cn)

Access	Read only
Description	The attribute indicates the list of capabilities negotiated on this peer session.
Mib	no_mib
List of	mpExtensions routeRefresh cooperativeRouteFiltering
Default	No default

COMPONENT Rtr Bgp Peer Descriptor (Desc)

Groups	GROUP Rtr Bgp Peer Desc Provisioned (Prov)
Scope	Network
Description	*Vr/<string> Ip Bgp Peer/<Ip Address> Desc* *Rtr/<string> Bgp Peer/<Ip Address> Desc* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address> Desc* This component contains provisioned attributes for BGP peers.

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Provisioned attributes are only used when the peer is a statically provisioned peer.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr Bgp Peer Desc Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisional attributes for this BGP *Peer* component

Mib: no_mib

ATTRIBUTE Rtr Bgp Peer Desc peerAs

Access: Read and write

Description: This attribute specifies the autonomous system identifier of this BGP *Peer* component. It is used to verify the autonomous system identifier learned from the peer through the OPEN message. The peer connection is rejected and a NOTIFICATION message is sent to the peer if these two numbers don't match.

Mib: no_mib

Values: Decimal (0..65535)

Default: 0

ATTRIBUTE Rtr Bgp Peer Desc localAddressConfigured (lac)

Access: Read and write

Description: This attribute specifies the local IP address configured for this *Bgp Peer* connection. If this attribute is 0.0.0.0, TCP chooses a local IP interface based on the remote IP address of this peer connection and the IP forwarding table. The value chosen is stored in the *localAddressUsed* attribute under the same *Peer* component.

Mib: no_mib

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Rtr Bgp Peer Desc keepAliveConfigured (kac)

Access: Read and write

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Description	This attribute specifies the configured interval between BGP KEEPALIVE message retransmissions. It is used to establish the ratio between keepalive interval and hold time. If this attribute is zero, then the *holdTimeConfigured* attribute must be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0..21845)
Units	seconds
Default	30

ATTRIBUTE Rtr Bgp Peer Desc **holdTimeConfigured (htc)**

Access	Read and write
Description	This attribute specifies the maximum time that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. The hold time must be either zero or at least three seconds. If this attribute is zero, then the *keepAliveConfigured* attribute should also be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0; 3..65535)
Units	seconds
Default	90

ATTRIBUTE Rtr Bgp Peer Desc **connectRetryTime (connectRetry)**

Access	Read and write
Description	This attribute specifies the time interval for the ConnectRetry timer. It is the minimum amount of time that must elapse between successive TCP connection retries for establishing BGP peer connection.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	120

ATTRIBUTE Rtr Bgp Peer Desc **minAsOrigTime (minAsOrig)**

Access	Read and write
Description	This attribute specifies the time interval for the MinAsOriginationInterval timer. It is the minimum amount of time that must elapse between updates that advertise a change to a route within the local autonomous system to neighboring autonomous systems.
Mib	no_mib

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Values	Decimal (1..65535)
Units	seconds
Default	15

ATTRIBUTE Rtr Bgp Peer Desc minRouteAdvTime (minRouteAdv)

Access	Read and write
Description	This attribute specifies the time interval for the MinRouteAdvertisementInterval timer. Feasible routes received from peers in other autonomous systems may only be re-advertised to peers in other autonomous systems at a rate no greater than MinRouteAdvertisementInterval.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	30

ATTRIBUTE Rtr Bgp Peer Desc defaultInAggMed (diaMed)

Access	Read and write
Description	This attribute specifies this *Bgp Peer* component instance's metric for generating a dynamic default route whenever this external BGP peer got established. It is used to prioritize between the dynamic default routes generated by BGP speakers. If this attribute is not set, BGP does not generate a dynamic default route. When this attribute is set, BGP automatically generates a dynamic default route when the connection established.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Bgp Peer Desc isRouteReflectorClient (isRrClient)

Access	Read and write
Description	This attribute specifies whether the peer is a client peer or non-client peer of this *Bgp* instance. The attribute is ignored unless the value of the '*routeReflector'* attribute of the '*Bgp'* component is set to ***true***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Bgp Peer Desc removePrivateAs (remPrivate)

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Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is enabled, then BGP will remove private AS numbers from the AS_PATH. This attribute is meaningful only for external peers.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Bgp Peer Desc **nextHopSelf (nhs)**

Access	Read and write
Description	This attribute controls the setting of the NEXT_HOP path attribute in routes advertised to the peer. If this attribute is enabled, BGP will advertise itself as the NEXT_HOP. This is useful when routes are propagated from an EBGP peer to an IBGP peer: the IBGP peer does not need to have a route to the EBGP peer.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Bgp Peer Desc **md5Key**

Access	Write only
Description	This attribute specifies this *Bgp Peer* component instance's MD5 key value that is used by the MD5 authentication on this BGP Peer session's underlying TCP connection. A null string indicates that the MD5 authentication is not to be used on the TCP connection to this Bgp Peer session.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Peer Desc **keyTransitionDelay (keyDelay)**

Access	Read and write
Description	This attribute specifies a delay period associated with a change of *md5Key* value event of the *Peer* component. This is the time that can elapse before the local router transitions to using the new key for transmission for this Bgp Peer session.This time is not used to control when to accept the new key for reception, and the new key

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is immediately accepted for reception.

This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service.

If ***sameAsBgp*** is specified, the value of *keyTransitionDelay* set under the parent *Bgp* component is used. Otherwise the value of this attribute will be used**.** The default is to use ***sameAsBgp***.

Mib no_mib

Values Decimal (1..20160)
sameAsBgp

Units minutes

Default sameAsBgp

ATTRIBUTE Rtr Bgp Peer Desc multiHopEbgp (mhEbgp)

Access Read and write

Description This attribute specifies whether MultiHop EBGP (External BGP) route distribution is supported on this EBGP peer. MultiHop EBGP allows routes to be distributed between EBGP peers that are not directly connected and can span multiple hops

Mib no_mib

Values enabled
disabled

Default disabled

ATTRIBUTE Rtr Bgp Peer Desc asPathCheck

Access Read and write

Description This attribute specifies the treatment of the AS_PATH loop detection mechanism in routes received from the peer.

If this attribute is set to ***disabled***, AS_PATH loop is not detected. If this attribute is set to ***enabled***, AS_PATH loop is detected.

Mib no_mib

Values enabled
disabled

Default enabled

ATTRIBUTE Rtr Bgp Peer Desc attachSiteOfOrigin (attachSoo)

Access Read and write

Description This attribute specifies the site of origin identifier to attach for this BGP Peer connection.

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	If this attribute is set, a site of origin extended community path attribute is attached to the routes received from this peer unless the site of origin extended community path attribute is already included in the routes.
Mib	no_mib
Values	String (0..21, RFC2547RdRtSyntax)
Default	No default

ATTRIBUTE Rtr Bgp Peer Desc **checkSiteOfOrigin (checkSoo)**

Access	Read and write
Description	This attribute specifies the site of origin identifiers to check for this BGP Peer connection. If this attribute is set, a check is done when routes are received from this peer or advertised to this peer. If the site of origin extended community path attribute presents in received routes and matches any Site Of Origin in this attribute, the routes are not accepted. If the site of origin extended community path attribute presents in the advertised routes and matches any SOO in this attribute, the routes are not advertised to this peer. If this attribute is not set, no check and filtering is done.
Mib	no_mib
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

ATTRIBUTE Rtr Bgp Peer Desc **bgpPeerRouteLimit (bprl)**

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Bgp Peer Desc **bgpPeerRouteDiscard (bprd)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Bgp Peer Desc **asOverride (asOr)**

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is ***enabled,*** then BGP will override all the AS numbers in the AS_PATH list, that match the AS number of the peer that we are sending to, with the local AS number. This attribute is meaningful only for external peers. This attribute is available for the *Bgp Peer Desc* component under the *Vr Ip*, *Vrf* and *Rtr* components. However, if it is set to ***enabled*** under the *Rtr Bgp Peer Desc* component, it has no impact. The behaviour is ***disabled*** regardless of the provisioned value in this case.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Bgp Peer Desc **addressFamily**

Access	Read and write
Description	The attribute specifies the supported network layer protocols being carried in any BGP-4 UPDATE messages over this Peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be added to this attribute on all VCGs' peer instances. To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamily* list of all the VCGs' Peer instances. To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamily* list of all the VCGs' peer instances. To distribute IPv4 Unicast routes with labels, using multi-protocol BGP

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extensions, the value of ***ipv4Label*** must be in the *addressFamily* list of the peer instance.

ipv4Unicast represents AFI = 1 and SAFI = 1
ipv4Vpn represents AFI = 1 and SAFI = 140 (not for RFC 2547)
mbgpVpn represents AFI = 1 and SAFI = 141 (not for RFC 2547)
ipv4MplsVpn represents AFI = 1 and SAFI = 128
ipv4Label represents AFI=1 and SAFI=4

Mib	no_mib
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	(ipv4Unicast)

COMPONENT Rtr Bgp Peer Vpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> This component contains all VPN information that is learned by this BGP peer instance.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Bgp Peer Vpn Ipv4
Common Verbs	Help List Display

COMPONENT Rtr Bgp Peer Vpn Ipv4

Instance	IP address
Groups	GROUP Rtr Bgp Peer Vpn Ipv4 Operational (Oper)
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP peer for the specified VPN.
Mib	no_mib
Common Verbs	Help List Display

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GROUP Rtr Bgp Peer Vpn Ipv4 **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 **publicIpAddress**

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 **asPath**

Access	Read only
Description	This attribute indicates the sequence of AS path segments through which the IP VPN information arrives. The AS Path lists the ASs in reverse traversal order from the point of origin. This attribute is not applicable and is not displayed for locally -learned IP VPN information.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 **vpnPeeringTopology**

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.

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Mib	no_mib
Values	none hub spoke
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 **asOriginatorId**

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of this IP VPN information in the local AS. When the Route Reflector in the backbone distributes a discovered VPN information to other IBGP speakers, the value of this attribute in the discovered VPN information is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 **redundant**

Access	Read only
Description	This attribute indicates that the IP VPN information entry learned from more than one BGP peers in the carrier backbone. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
Values	no yes
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 **rrClusterList**

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the sequence of cluster-ids that this discovered IP VPN information has traversed. When the Route Reflector in the backbone reflects a discovered VPN information to other non-client IBGP peers, the cluster ID of the Route Reflector is added to the cluster list of the received VPN information. A blank list indicates this attribute is not present in the received VPN information or if this *Bgp* instance is not a Route Reflector.

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	This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Bgp ImportPolicy (Import)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Bgp Import Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n* *Rtr/<string> Bgp Import/n* *Rtr/<string> Vrf/<string> Bgp Import/n* Each instance of this component describes a BGP import policy. A BGP import policy is used to decide if certain routing information learned from its peer is to be ignored or used. If no import policy is provisioned, BGP will accept all routes received from its IBGP peers, but will not use any routing information received from its EBGP peers. If multiple import policies are provisioned, the one with the most specific match will apply. The keys are matched in the following order from the least specified to the most specified: *Network*, *peerAs*, *peerIpAddress*, *originAs*, *originProtocol*, *matchAsPath,* *matchCommunity.* Example1: There are 2 import policies defined: vr/0 ip bgp import/1, originProtocol = ***any***, originAs = ***20***, usageFlag = ***use*** vr/0 ip bgp import/2, originProtocol = ***igp***, usageFlag = ***ignore*** If a BGP NLRI contains a route originally learned from an igp with origin AS 20, it will be used. Example2: There are 2 import policies defined: vr/0 ip bgp import/1, originProtocol = ***any***, matchAsPath = ***“1 2 3”***, usageFlag = ***ignore*** vr/0 ip bgp import/2, originProtocol = ***any***, usageFlag = use If a BGP NLRI contains a route originally learned from an igp with the AsPath “1 2 3 4”, it will be ignored.

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For Router and Vrf, the example is similar with ‘Vr/0 Ip’ replaced with ‘Router/0’ and ‘Router/0 Vrf/1’ respectively.

Mib no_mib

Opt. Subcomp. COMPONENT Rtr Bgp Import Network (Net)

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Bgp Import Provisioned (Prov)

Properties Provisioned

Description This group contains all the provisionable attributes for the *Import* component.

Mib no_mib

ATTRIBUTE Rtr Bgp Import peerAs

Access Read and write

Description This key attribute specifies the autonomous system number of the peer from which the routes are learned. A value of 0 for this attribute means that peer AS number will match any AS number.

Mib no_mib

Values Decimal (0..65535)

Default 0

ATTRIBUTE Rtr Bgp Import peerIpAddress

Access Read and write

Description This key attribute specifies the IP address of the peer from which the routes are learned. A value of 0.0.0.0 for this attribute means that peer IP address will match any IP address.

Mib no_mib

Values IP address

Default 0.0.0.0

ATTRIBUTE Rtr Bgp Import originAs

Access Read and write

Description This key attribute specifies the autonomous system number where the routes were originated. A value of 0 for this attribute means origin AS number will match any AS number.

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Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Import originProtocol

Access	Read and write
Description	This key attribute specifies the protocols that originated the routes. A value of ***incomplete*** for this attribute means this information is not available.
Mib	no_mib
Values	any igp egp incomplete
Default	any

ATTRIBUTE Rtr Bgp Import usageFlag (usage)

Access	Read and write
Description	This attribute specifies whether BGP will use or ignore information in received update if it meets criteria specified by the key attributes of this component.
Mib	no_mib
Values	use ignore
Default	use

ATTRIBUTE Rtr Bgp Import localPreference (locPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's degree of preference for those routes that match the criteria of this import policy. A higher value indicates a more preferred route. A value of 0 for this attribute means that the default local preference value provisioned under the *Bgp* component should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Import asPathExpression (asExpr)

Access	Read and write

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Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the received update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters has the special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. 'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. '[n1... n2]' - Matches any AS number that appeared in the set n1... n2. 'n1 - n2' - Matches any AS number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a AS set, range or number. The following logical operators are evaluated in descending order: 'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x. 'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y. 'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y. For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions: ***1$,*** ***^5,*** ***4 3,*** ***5 3 - 4*,*** ***5 [4 3 2] not10 2 1,*** ***not (6 7 8 9 10) and 5 4.* 1*** Empty regular expression implies a match on all AS path.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Import **communityExpression (comExpr)**

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Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute. The following characters have a special meaning: '[n1... n2]' - Matches any Community number that appeared in the set n1...n2. 'n1 - n2' - Matches any Community number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in descending order: 'NOT' - Given a regular expression x, NOT x matches the Community attribute that is not matched by x. 'AND'- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y. 'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y. For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression: ***1,*** ***5,*** ***4 3,*** ***2 3 - 4*,*** ***1 [3 4 2]+,*** ***not (6 7 8 9 10) and 1 2*** Empty regular expression implies a match on all Community path.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Import **expressPreference (exprPref)**

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity*. This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This

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attribute is used to break the tie when two import policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.

Mib	no_mib
Values	Decimal (0..255)
Default	128

ATTRIBUTE Rtr Bgp Import **appendCommunity (appCom)**

Access	Read and write
Description	This attribute indicates which community number this import policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is appended to the Community attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Import **ibgpRtePreference (ibgpPref)**

Access	Read and write
Description	This attribute specifies the routing preference of IBGP routes matching this import policy. A lower value means the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultIbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	no_mib
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Rtr Bgp Import **ebgpRtePreference (ebgpPref)**

Access	Read and write
Description	This attribute specifies the routing preference of EBGP routes matching this import policy. A lower value specifies the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultEbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	no_mib
Values	Decimal (1..253) sameAsBgp

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Default	sameAsBgp

ATTRIBUTE Rtr Bgp Import addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this import policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (Not for RFC 2547) ***all***
Mib	no_mib
Values	all ipv4Unicast mbgpVpn ipv4Label
Default	all

ATTRIBUTE Rtr Bgp Import description (desc)

Access	Read and write
Description	This attribute specifies the policy. For example, ‘to import BGP routes from AS 1’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Bgp Import Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Bgp Import Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n Network/n* *Rtr/<string> Bgp Import/n Network/n* *Rtr/<string> Vrf/<string> Bgp Import/n Network/n* This is an optional subcomponent of *Import* component and identifies destination networks that this BGP import policy applies to. This

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component is used as a key for the import policy. If no network list is provisioned, the import policy applies to all networks.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Import Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Import Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Rtr Bgp ExportPolicy (Export)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Bgp Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n* *Rtr/<string> Bgp Export/n* *Rtr/<string> Vrf/<string> Bgp Export/n*

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Each instance of this component describes a BGP export policy. A BGP export policy is used to decide if certain routing information should be blocked or advertised to its peers.
If no export policy is provisioned, BGP will advertise all external BGP learned routes to its internal peers, but not advertise any routing information to its external peers.
If multiple export policies are provisioned, the one with the most specific match will apply.
The keys are matched in the following order from the least specified to the most specified:
peerAs,
peerIpAddress,
protocol,
ripInterface (if applicable),
egpAs, bgpAs, ripNeighbour, or *ospfTag* (whichever is applicable),
Network,
matchAsPath,
matchCommunity.

Example1: (for Router and Vrf, the examples are similar by replacing ‘vr/0 ip’ with ‘Router/a’ and ‘Router/a Vrf/b’ respectively)
There are 2 export policies defined:
vr/0 ip bgp export/1, protocol = ***all***, advertiseStatus = ***send***
vr/0 ip bgp export/2, protocol = ***rip***, advertiseStatus = ***block***
BGP will generate BGP updates for all routes except the routes learned from RIP.
Example2:
There are 2 export policies defined:
vr/0 ip bgp export/1, protocol = all, matchCommunity = ***303***, advertiseStatus = ***send***
vr/0 ip bgp export/2, protocol = ***all***, advertiseStatus = ***block***
BGP will generate BGP updates for all routes that belongs to Community 303.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Bgp Export Network (Net)

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Bgp Export Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisioned attributes for the *Export* component.

Mib: no_mib

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ATTRIBUTE Rtr Bgp Export **peerAs**

Access	Read and write
Description	This key attribute specifies the autonomous system number of the peer where the routes are advertised to. A value of 0 for this attribute means this export policy applies to all peer ASes.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Export **peerIpAddress**

Access	Read and write
Description	This key attribute specifies the IP address of the peer where the routes are advertised to. A value of 0.0.0.0 for this attribute means this export policy applies to all peers. This key attribute is used in export policies for AFI/SAFI = 1/128 only if the *addressFamily* attribute is set to ***ipv4MplsVpn***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Export **protocol**

Access	Read and write
Description	This key attribute specifies which protocol the export policy applies to. If it is set to ***all***, that means this export policy will apply all routes in the IP routing table. Example: vr/1 ip ospf export/1 with advertise Status = block protocol = bgpExternal bgpAsId = 3 peerAs = 5 This policy specifies that all routes learned from EBGP Peers that are originated from AS 3 should not be advertised to AS 5.
Mib	no_mib
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal

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	bgpAggregate mbgp bgpMplsInternal
Default	all

ATTRIBUTE Rtr Bgp Export egpAsId (egpAs)

Access	Read and write
Description	This key attribute specifies the EGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to ***egp***.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Export bgpAsId (bgpAs)

Access	Read and write
Description	This key attribute specifies the BGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to either ***bgpInternal*** or ***bgpExternal***.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Export ospfTag

Access	Read and write
Description	This key attribute specifies the OSPF tag when the *protocol* attribute is set to either ***ospfInternal*** or ***ospfExternal***. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag not specified.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Rtr Bgp Export ripInterface (ripIf)

Access	Read and write
Description	This key attribute specifies the local RIP interface where the routes are learned from. The *ripInterface* attribute when non-zero should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or the IP address of an *Interface* component. Otherwise, this policy will be ignored.

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	The value of the *protocol* attribute must be set to ***rip*** if a value for the *ripInterface* attribute is non-zero.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This key attribute specifies the RIP neighbor where the routes were learned from. The value of the *protocol* attribute must be set to ***rip*** if the *ripNeighbor* attribute is non-zero.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether data will be exported if it meets criteria specified by the other key attributes of this component.
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Bgp Export multiExitDisc (med)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's metric to discriminate between multiple exit points to an adjacent autonomous system if the route meets the criteria specified by the key attributes of this component. A lower value indicates a more preferred route. A value of 0 for this attribute means the default MED value provisioned under the *Bgp* component should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Export sendMultiExitDiscToEbgp (sendMed)

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Access	Read and write
Description	This attribute specifies whether the Multi Exit Discriminator (MED) attribute should be included in an update message sent to an EBGP peer.
Mib	no_mib
Values	false true
Default	false

ATTRIBUTE Rtr Bgp Export asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the export update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters have a special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. 'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. '[n1... n2]' - Matches any AS number that appeared in the set n1... n2. 'n1 - n2' - Matches any AS number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in descending order: 'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x. 'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y. 'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y. For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:

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1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Export communityExpression (comExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute. The following characters have a special meaning: '[n1... n2]' - Matches any Community number that appeared in the set n1...n2. 'n1 - n2' - Matches any Community number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in descending order: 'NOT' - Given a regular expression x, NOT x matches the Community attribute that is not matched by x. 'AND'- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y. 'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y. For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression: ***1,*** ***5,*** ***4 3,*** ***2 3 - 4*,*** ***1 [3 4 2]+,*** ***not (6 7 8 9 10) and 1 2*** Empty regular expression implies a match on all Community path.

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Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Export expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity*. This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two export policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	no_mib
Values	Decimal (0..255)
Default	128

ATTRIBUTE Rtr Bgp Export sendCommunity (sendCom)

Access	Read and write
Description	This attribute indicates which community number this export policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is added to the Community attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Export localPreference (locPrf)

Access	Read and write
Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes sent to internal peers. A value of 0 means that the value specified in the import policy (if any) or the default local preference value should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Export virtualPrivateNetworkIdentifier (vpnId)

Access	Read and write

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Description	This attribute specifies the Virtual Private Network (VPN) identifier of the routes this export policy should apply to. This attribute is only used if *addressFamily* has included ***mbgpVpn***. The value “00-00-00-00-00-00-00” identifies an unspecified VPN ID, meaning the VPN ID will not be used as a matching criteria in this export policy.
Mib	no_mib
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Rtr Bgp Export addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this export policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). An export policy is applied for AFI/SAFI = 1/128 only when this attribute is set to ***ipv4MplsVpn***. In this case only *peerIpAddress*, *routeTarget*, and *advertiseStatus* attributes and *Network* component and its related attributes are used for export policies. It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***all***
Mib	no_mib
Values	all ipv4Unicast mbgpVpn ipv4MplsVpn
Default	all

ATTRIBUTE Rtr Bgp Export description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export BGP routes to MCI’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Export insertDummyAs (insertAs)

Access	Read and write

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Description	This attribute specifies the AS number(s) to be inserted into the AS Path Attribute. The value is a sequence of AS number separated by period(.). For example, if the value is ***20.20.30***, the AS numbers 20, 20 and 30 would be inserted at the end of the AS Path Attribute just before the local AS number.
Mib	no_mib
Values	Integer Sequence
Default	No default

ATTRIBUTE Rtr Bgp Export routeTarget (rt)

Access	Read and write
Description	This attribute specifies the Route Target of the routes this export policy should apply to.
Mib	no_mib
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

COMPONENT Rtr Bgp Export Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Bgp Export Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n Network/n* *Rtr/<string> Bgp Export/n Network/n* *Rtr/<string> Vrf/<string> Export/n Network/n* This is an optional subcomponent of the *Export* component and identifies a destination network that this BGP export policy will apply to. This component is used as a key for the export policy. If no network list is provisioned, the export policy applies to all networks. This component and its associated attributes are applied in an export policy for AFI/SAFI = 1/128 only if *addressFamily* attribute is set to ***ipv4MplsVpn***.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp Export Net Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Export Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Export Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Rtr Bgp As

Instance	Decimal (0..65535)
Groups	GROUP Rtr Bgp As Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp As/n* *Rtr/<string> Bgp As/n* *Rtr/<string> Vrf/<string> Bgp As/n* This component associates attributes to an autonomous system.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp As Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the attributes associated to each autonomous system for this *Bgp* component instance.
Mib	no_mib

ATTRIBUTE Rtr Bgp As weight

Access	Read and write
Description	This attribute specifies the weight for an autonomous system. It allows users to prefer some ASes over others. It is used in route selection. Lowest weight is preferred. Setting the weight of an AS to 255 will make any route that traverses through that AS unpreferred.
Mib	no_mib
Values	Decimal (0..255)
Default	128

COMPONENT Rtr Bgp AggregatePolicy (Aggregate)

Instance	prefix [IP address] length [Decimal (0..32)]
Scope	Application
Description	*Vr/<string> Ip Bgp AggregatePolicy/<Ip Address>,<Decimal>* *Rtr/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>* This component is used to perform aggregation of BGP routes for exporting. Aggregation is the process of combining the characteristics of several different routes in such a way that a single route can be advertised. Aggregation reduces the amount of information that a BGP speaker must store and exchange with other BGP speakers. Refer to RFC1771 for the set of rules regarding which routes can be aggregated. A ***network*** subcomponent is automatically added with the same network range as the aggregation policy key and its action is set to ***aggregate***. So by default all subnets under the aggregation key range will be aggregated. Examples (For *Router* and *Vrf*, the examples are similar by replacing 'vr/0 ip' with 'Router/a' and 'Router/a Vrf/b' respectively): Example #1: aggregate all the networks covered by A.0.0.0/8 add vr/0 ip bgp aggregate/A.0.0.0,8 (Note: the following subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate will be automatically added) Example #2: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks add vr/0 ip bgp aggregate/A.0.0.0,8 set vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.B.0.0, length 16, action aggregate (Note: this set command will overwrite the default network subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action

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aggregate)
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate

Example #3: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks; also advertise A.B.C.0/24
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 networkl/0 prefix A.B.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/2
set vr/0 ip bgp aggregate/A.0.0.0,8 network/2 prefix A.B.C.0, length 24, action advertise

Example #4: aggregate all networks under A.0.0.0/8, meanwhile advertise A.B.0.0/16
add vr/0 ip bgp aggregate/A.0.0.0,8
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.B.0.0, length 16, action advertise

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Bgp Aggregate Network (Net)
Common Verbs	Help List Display Add DELete

COMPONENT Rtr Bgp Aggregate Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Bgp Aggregate Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Vrf/<string> Bgp Aggregate/<IP address>,<n> Network/n* This is an optional subcomponent of *Aggregate* component and identifies

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	a set of more specific routes that this BGP will aggregate or advertise together with the aggregated route.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp Aggregate Net **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Aggregate Net **prefix**

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Aggregate Net **length**

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (0..32)
Units	bits
Default	0

ATTRIBUTE Rtr Bgp Aggregate Net **protocol**

Access	Read and write
Description	This attribute specifies the IP protocols to which this route should belong.
Mib	no_mib
Values	all egp rip

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ospfInternal
ospfExternal
staticLocal
staticRemote
bgpInternal
bgpExternal

Default all

ATTRIBUTE Rtr Bgp Aggregate Net egpAsId (egpAs)

Access Read and write

Description This attribute specifies an EGP autonomous system number.

When this value is non-zero, the *protocol* attribute must be set to either ***egp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through egp and this attribute matches the EGP autonomous system number where the network is learned from.
The default value 0 indicates that the EGP autonomous system number is not specified.

Mib no_mib

Values Decimal (0..65535)

Default 0

ATTRIBUTE Rtr Bgp Aggregate Net bgpAsId (bgpAs)

Access Read and write

Description This attribute specifies the BGP autonomous system number.

When this value is non-zero, the *protocol* attribute must be set to either ***bgp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through BGP and this attribute matches the BGP autonomous system number where the network is learned from.
The default value 0 indicates that the BGP autonomous system number is not specified.

Mib no_mib

Values Decimal (0..65535)

Default 0

ATTRIBUTE Rtr Bgp Aggregate Net ospfTag

Access Read and write

Description This attribute specifies the OSPF tag.

When this attribute is set to a value other than the default value FFFFFFFF in hex, the *protocol* attribute must be set to either ***ospf*** or to

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	all. And this more specific route will be advertised together with the aggregated route only if its OSPF tag matches this value. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag is not specified.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Rtr Bgp Aggregate Net **ripInterface (ripIf)**

Access	Read and write
Description	This attribute specifies a local RIP interface which should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or one of the IP addresses provisioned as an *Interface* component. When this value is non-zero, the value of the *protocol* attribute must be either set to ***rip*** or to ***all.*** And this more specific route will be advertised together with the aggregated route only if it is learned through RIP and this RIP interface. The default value 0.0.0.0 indicates that the RIP interface is not specified.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Aggregate Net **action**

Access	Read and write
Description	This attribute specifies whether this network should be aggregated or advertised out.
Mib	no_mib
Values	aggregate advertise
Default	aggregate

COMPONENT Rtr Bgp **IndbEntry (Indb)**

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Bgp Indb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string>Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>*

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Rtr/<string> Vrf/<string> Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>
This component describes a BGP route received from one of its peers.

Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bgp Indb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *IndbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Indb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Bgp Indb inLocaldb

Access	Read only
Description	This attribute indicates whether or not this route was chosen as the best BGP4 route.
Mib	no_mib
Values	false true
Default	No default

ATTRIBUTE Rtr Bgp Indb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib

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Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Indb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Indb calcLocalPref

Access	Read only
Description	This attribute indicates our degree of preference for this route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Indb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Indb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp Indb aggregatorAs

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Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp Indb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Indb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Indb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Indb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib

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Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Indb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Indb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Bgp LocaldbEntry (Localdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Bgp Localdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string> Vrf/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP local database. This database contains the routing information that the BGP speaker has

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selected by applying its local import policies and decision process to the routing information stored in *IndbEntry*.

Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bgp Localdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *LocaldbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Localdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Bgp Localdb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Localdb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Rtr Bgp Localdb **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Localdb **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp Localdb **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp Localdb **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Localdb **asPath**

Access	Read only

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Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Localdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Localdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Localdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Localdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.

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Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Bgp OutdbEntry (Outdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Bgp Outdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP output database that BGP advertises to its peers. The database contents are selected by applying its local export policies to the routing information stored in the IP forwarding table.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bgp Outdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *OutdbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Outdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

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ATTRIBUTE Rtr Bgp Outdb **nextHop**

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Outdb **localPreference**

Access	Read only
Description	This attribute indicates this *Bgp* instance's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Outdb **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Outdb **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp Outdb **aggregatorAs**

Access	Read only

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Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp Outdb **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Outdb **asPath**

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Outdb **unknownAttributes (unknown)**

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Outdb **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)

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Default	No default

ATTRIBUTE Rtr Bgp Outdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of a route in the local AS. When the Route Reflector distributes a learned IBGP route to other IBGP speakers, the value of this attribute in the learned route is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Outdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. When the Route Reflector redistributes a learned IBGP to other IBGP speakers, the cluster id of this Route Reflector is appended to the cluster list of the learned IBGP route. If this *Bgp* instance is not a Route Reflector, this attribute is blank.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Bgp LocalVpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> This component contains all VPN information from the specified VPN that is learned from customer VR on the local node.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Bgp LocalVpn Ipv4
Common Verbs	Help List Display

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COMPONENT Rtr Bgp LocalVpn Ipv4

Instance	IP address
Groups	GROUP Rtr Bgp LocalVpn Ipv4 Operational (Oper)
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP locally for the specified VPN.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bgp LocalVpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp LocalVpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp LocalVpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no

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dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.

Mib: no_mib

Values:
none
hub
spoke

Default: No default

COMPONENT Rtr Bgp MBgpRibEntry (MBgpRib)

Instance:
vpnId [String (7, Dashed Hex)]
prefix [IP address]
length [Decimal (0..32)]
peer [IP address]

Groups: GROUP Rtr Bgp MBgpRib Operational (Oper)

Scope: Application

Description:
Vr/<string> Ip Bgp MBgpRibEntry/ <vpnid>,<prefix>,<length>,<peer_ip_address>
This component represents a single MBGP routing database entry received from one of the BGP peers of this virtual router.

The instance values of this component have the following meanings:
- *vpnId:* the virtual private network identifier associated with the MBGP route.
- *prefix*: the destination IP address prefix of the MBGP route.
- *length:* the length of the IP address prefix of the MBGP route.
- *peer_ip_address:* the IP address prefix of the BGP peer that the MBGP route has been learned from. A value of 0.0.0.0 indicates that the MBGP route is learned from a locally attaching customer VR.

This component only appears under a *VirtualRouter* component whose *vpnMode* attribute is set to ***carrier***.

Mib: no_mib

Common Verbs:
Help
List
Display

GROUP Rtr Bgp MBgpRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MBgpRibEntry* component.

Mib: no_mib

ATTRIBUTE Rtr Bgp MBgpRib origin

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Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib status

Access	Read only
Description	This attribute indicates whether the MBGP route has been distributed into the routing table of the customer VR corresponding to the VPN identifier value.
Mib	no_mib
Values	localVpnRoute inCvrRdb importBlocked importLimitExceeded unreachableNh
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib nextHop

Access	Read only
Description	This attribute indicates the IP address of the router that should be used as the next hop to reach the destination address prefix given by the instance value of this component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib localPreference

Access	Read only
Description	This attribute indicates the local IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Rtr Bgp MBgpRib **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this path attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this path attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib **asPath**

Access	Read only

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Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Bgp MplsVpnRibEntry (MvRib)

Instance	routeDistinguisher [String (3..21, RFC2547RdRtSyntax)] prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Bgp MvRib Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> *Rtr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> The *MplsVpnRibEntry* component represents a single entry in the MPLS VPN routing information database.This component is used to maintain the MPLS VPN routes learned both locally and from the BGP peers. The instance values of this component have the following meaning: - *routeDistinguisher:* a string associated with the MPLS VPN route. The string is in the form of (1) AS:nn or (2) IPAddr:mm. where

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AS represents an autonomous system number,
nn represents an index value,
IPAddr represents an IP address,
mm represents an index value

- *prefix*: the destination IP address prefix of the MPLS VPN route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute.

- *length:* the length of the IP address prefix of the MPLS VPN route. This is the IP address prefix length as specified in the Network Layer Reachability Information field.

- peerIpAddr: the IP address prefix of the BGP peer that the MPLS VPN route has been learned from.

This component is only applicable to the *Router* component or a virtual router whose *vpnMode* attribute is set to ***carrier***.

Mib: Bgp

Common Verbs:
Help
List
Display
LOCK
Unlock

GROUP Rtr Bgp MvRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *BgpMplsRibEntry* component.

Mib: Bgp

ATTRIBUTE Rtr Bgp MvRib serviceLabel (sl)

Access: Read only

Description: This attribute indicates the service label (the inner label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node and distributed together with the routing information toward the remote end PE. The service label is then used by the remote PE node to encapsulate traffic of the same VPN to the local PE node. When the local PE node processes a received packet which has the service label at the top of the stack, the PE pops the stack, and sends the packet to the Customer Edge (CE) node from which the route leads. (See also transportLabel attribute description.)

Mib: Bgp

Values: Decimal (0..1048575)

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Default	No default

ATTRIBUTE Rtr Bgp MvRib **transportLabel (tl)**

Access	Read only
Description	This attribute indicates the transport label (the outer label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node. The transport label identifies the MPLS tunnel (Labeled Switched Path) used to transport the service label encapsulated VPN traffic, between two PE nodes, through the backbone. The transport label is applied on top of the service label at the source PE node, and used to direct the VPN traffic (travelling through the network core) to the destination PE. At the destination PE node the transport label is stripped, leaving the service label encapsulated packet to be processed and forwarded to a CE node based on the service label. A value of ***awaitingLabel*** indicates the MPLS tunnel is currently not available and waiting to be established. A value of ***notApplicable*** indicates this is a local route and hence doesn't have a transport label.
Mib	Bgp
Values	Decimal (0..1048575) awaitingLabel notApplicable
Default	No default

ATTRIBUTE Rtr Bgp MvRib **reachable (reach)**

Access	Read only
Description	This attribute indicates whether a route is currently reachable through an LSP tunnel.
Mib	Bgp
Values	true false
Default	No default

ATTRIBUTE Rtr Bgp MvRib **bgpNextHop (bgpNh)**

Access	Read only
Description	This attribute indicates the bgp next hop IP address that should be used to reach the destination address prefix.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp MvRib **origin**

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Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Bgp MvRib **localPreference (locPrf)**

Access	Read only
Description	This attribute indicates the LOCAL_PREFERENCE path attribute of the route. The LOCAL_PREFERENCE path attribute is used by a BGP speaker to inform other BGP speakers in its own autonomous system of the originating speaker's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp MvRib **asPath**

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attributes lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MvRib **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp MvRib **atomicAggregate**

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Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp MvRib **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp MvRib **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp MvRib **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MvRib **siteOfOrigin (soo)**

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.

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Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MvRib outgoingInterface (outIf)

Access	Read only
Description	This attribute indicates the local interface IP address for the *Rtr If LdpIf* on which the active outgoing LSP connection for the *bgpNextHop* is programmed. This attribute is filterable for the route entries learned from the *Rtr Vrf* on the same Provider Edge(PE) node.That is,local entries whose peer addresses are equal to ***0.0.0.0*** are filtered.
Mib	Bgp
Values	IP address
Default	No default

COMPONENT Rtr Bgp Ipv4LabelRibEntry (LRib)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Bgp LRib Operational (Oper)
Scope	Application
Description	*Rtr/<string> Bgp ipv4LabelRibEntry/<prefix>,<length>,<peer>* The *ipv4LabelRibEntry* component represents a single entry in the routing information database which maintains the ipv4 labelled BGP routes learned both locally and remotely from the BGP peers. - *prefix*: the destination IP address prefix of the ipv4 labelled BGP route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *length*: the length of the IP address prefix of the ipv4 labelled BGP route. This is the IP address prefix length as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *peer*: the IP address of the BGP peer from which the ipv4 labelled BGP route was learned.

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This component is only applicable to the *Bgp* component whose *Bgp Peer Descriptor addressFamily* attribute is set to ***ipv4Label***.

Mib	Bgp
Common Verbs	Help List Display

GROUP Rtr Bgp LRib Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ipv4LabelRibEntry* component.
Mib	Bgp

ATTRIBUTE Rtr Bgp LRib nextHop (nh)

Access	Read only
Description	This attribute indicates the IP address of the next hop that should be used to reach the destination address.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp LRib inLabel (il)

Access	Read only
Description	This attribute indicates the label (if any) assigned by this Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Rtr Bgp LRib outLabel (ol)

Access	Read only
Description	This attribute indicates the label (if any) assigned by the next hop Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

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ATTRIBUTE Rtr Bgp LRib **origin**

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Bgp LRib **asPath**

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attribute lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp LRib **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp LRib **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp LRib **aggregatorAs**

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Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp LRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp LRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp LRib siteOfOrigin (soo)

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

COMPONENT Rtr ForwardTable (Fwd)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..31)] gateway (gateway) [IP address]
Groups	GROUP Rtr Fwd Operational (Oper)

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Scope	Application
Description	*Vr/<string> Ip ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address>* *Rtr/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* *Rtr/<string> Vrf/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* This component contains the information to forward data.This table holds the best route information sent from Routing table.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Fwd Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the Forward Table.
Mib	no_mib

ATTRIBUTE Rtr Fwd ifIndex

Access	Read only
Description	This attribute specifies the SNMP index associated with the protocol port or interface represented by the attribute *protocolPortName* or *interfaceName,* which identifies the local interface through which the next hop of this route should be reached.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rtr Fwd type

Access	Read only
Description	This attribute specifies the type of route. Note that ***localInterface*** refers to a route for which the next hop is the final destination; ***remoteDestination*** refers to a route for which the next hop is not the final destination.
Mib	no_mib
Values	notDefined invalid localInterface remoteDestination

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Default	No default

ATTRIBUTE Rtr Fwd protocol

Access	Read only
Description	This Attribute identifies the routing mechanism by which this route was learned.
Mib	no_mib
Values	other local netmgmt icmp egp ggp hello rip isIs esIs ciscoIgrp bbnSpfIgp ospf bgp idpr mpls mbgp bgpMplsInternal ebgpLabel
Default	No default

ATTRIBUTE Rtr Fwd age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Fwd protocolPortName (pPName)

Access	Read only
Description	For a *Vr*, this attribute indicates the name of the protocol port by which the next hop of this route should be reached.
Mib	no_mib
Values	The name of the component

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Default	No default

ATTRIBUTE Rtr Fwd nextHopAs

Access	Read only
Description	This attribute specifies the Autonomous System number of the Next Hop. If unknown or not relevant to the protocol indicated by the attribute *protocol*, the value should be zero.
Mib	no_mib
Values	Decimal (0..429467295)
Default	No default

ATTRIBUTE Rtr Fwd metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the attribute *protocol*. If this metric is not used, its value should be set to -1.
Mib	no_mib
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Rtr Fwd interfaceName

Access	Read only
Description	For a *Rtr* or *Rtr Vrf*, this attribute indicates the name of the interface by which the next hop of this route should be reached.
Mib	no_mib
Values	The name of the component
Default	No default

COMPONENT Rtr Icmp

Groups	GROUP Rtr Icmp Statistics (Stats)
Scope	Application
Description	Vr/<string> Ip Icmp Rtr/<string> Icmp Rtr/<string> Vrf/<string> Icmp

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The Icmp component controls all ICMP related attributes available to this router.

Mib no_mib

Common Verbs
- Help
- List
- Display

VERB Ping Rtr Icmp

Impact Passive

Description

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-cos(0..3)][-dscp(0..63)][-tos(0..FF)][-stop] Vr/<string> Ip Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Vrf/<string> Icmp

The *Ping* verb is intended for testing network connections at the IP level. The verb invokes ICMP to issue an echo request to the host specified by the *ipAddr* option and waits for its echo response.

If the *Ping* is successful, it outputs the following information:
- number of bytes received
- IP address of the responding host
- ICMP sequence number of the received packet
- elaspsed time from sending of the *Ping* to receiving of the response

The following options are supported:

-srcAddr is used to define the source IP address of the IP ICMP echo request packet. When not specified or specified as 0.0.0.0, the outgoing IP *Interface* or *LogicalIf* address is used as the source address.

-netmask when specified is used to define a range of IP host addresses to

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which echo requests are sent to (ping sweep). The netmask given must be contiguous. The *-retry* option is ignored if used together with this option. By default, the value is set to 255.255.255.255.

-*size* is used to define the size of the IP packet to be echoed including the IP and ICMP header. The default is 64 bytes. The maximum size is 4096.

-*retry* is used to define the number of times an echo request is resent if no echo reply is received. Default is 0.

-*traceRoute* is used to find the route the node would use to reach a particular destination IP address at the moment when the *Ping* command is executed with this option. The *-netmask*, *-size, -retry* and *-continuous* option are ignored if used together with this option. By default, the *traceRoute* option is not used.

-continuous causes ICMP to issue echo requests once per second to the host or hosts specified by the *-ipAddr* and the *-netmask* option. For every echo response ICMP receives, one line of output is printed. No output is produced if there is no response. The -*stop* option is used to stop ICMP from sending the echo requests. By default, the *-continuous* option is not used.

-dontFragment causes ICMP to set the Don't Fragment flag of the IP packet that carries the echo request. This is useful in determining path MTU. By default, the *dontFragment* option is not used.

-noOp causes a No Operation option to be inserted into the IP header of the packet that carries the echo request. By default, the *noOp* option is not used.

-recordRoute causes the route of the IP packet that carries the echo request to be recorded in the IP header. Up to 9 routes can be recorded. If the number of routes to record is not specified, 5 routes are recorded by default.

-timeStamp sets the Time Stamp option in the IP header of the packet that carries the echo request. The format used for the time stamps consists of both an IP Adress and a time field. The default number of time stamps is 3. A maximum of 4 time stamps can be recorded.

-looseSrcRoute is used to specify a loose set of routes for the packet carrying the echo request to go through along the path to the destination. Up to 9 routes can be specified.

-strictSrcRoute is used to specify a strict set of routes for the packet carrying the echo request to go through to get to the destination. Up to 9 routes can be specified.

-cos causes the echo request packet to be forwarded with the given Class Of Service. Default is 0. This option is not supported on a Router

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component, a VpnRouteForwarder component, nor on a VirtualRouter component that has a DifferentiatedServicesDomain subcomponent.

-dscp causes the six most significant bits of Type Of Service (TOS) byte of the echo request packet to be set to the given value. These six bits are know as the Differentiated Services Code Point (DSCP). Default is 0. This option cannot be used together with the *-tos* option.

-tos causes the Type Of Service (TOS) byte of the echo request packet to be set to the given value. Default is 0. This option cannot be used together with the *-dscp* option.

-stop is used to stop ICMP from sending echo requests due to a previously issued *Ping* command with the *-continuous* and/or *-netmask* option. Under any other situation, the *Ping* command with the *-stop* option has no effect.

Note: Only one *Ping* command per *VirtualRouter* or *Router* or *Router Vrf* is allowed to be in progress at any one time. Any in progress *Ping* command must be stopped before a new *Ping* command can be issued.

GROUP Rtr Icmp Statistics (Stats)

Properties	Operational
Description	This group holds statistics for ICMP.
Mib	no_mib

ATTRIBUTE Rtr Icmp inMsgs

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway. This number includes *inErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inErrors

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway but determined as having ICMP specific errors such as bad ICMP checksum or bad length. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Rtr Icmp inDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Icmp inRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outMsgs

Access	Read only
Description	This attribute counts the ICMP messages that this gateway attempted to send. This number includes *outErrors*.

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The counter wraps to zero when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Rtr Icmp outErrors

Access Read only

Description This attribute counts the ICMP messages that this gateway did not send due to problems discovered within ICMP such as a lack of buffers. *outErrors* does not include errors discovered outside the ICMP layer such as the inability of IP to route the resultant datagram.

The counter wraps to zero when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Rtr Icmp outDestUnreachs

Access Read only

Description This attribute counts the ICMP destination unreachable messages sent by this gateway.

The counter wraps to zero when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Rtr Icmp outTimeExcds

Access Read only

Description This attribute counts the ICMP time exceeded messages sent by this gateway.

The counter wraps to zero when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

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ATTRIBUTE Rtr Icmp outParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rtr Icmp outEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rtr Icmp outAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply message sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Rtr Icmp outRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Ospf (Ospf)

Groups	GROUP Rtr Ospf Provisioned (Prov) GROUP Rtr Ospf Operational (Oper) GROUP Rtr Ospf OsiState (State) GROUP Rtr Ospf OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip Ospf* *Rtr/<string> Ospf* *Rtr/<string> Vrf/<string> Ospf* This component is configured to control the Open Shortest Path First IP routing protocol.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Ospf AreaEntry (Area) COMPONENT Rtr Ospf StubAreaEntry (Stub) COMPONENT Rtr Ospf AreaAggregateEntry (Aggregate) COMPONENT Rtr Ospf HostEntry (Host) COMPONENT Rtr Ospf VirtIfEntry (VirtIf) COMPONENT Rtr Ospf Export
Dyn. Subcomp.	COMPONENT Rtr Ospf VirtNbrEntry (VirtNbr) COMPONENT Rtr Ospf NeighborEntry (Nbr) COMPONENT Rtr Ospf LsdbEntry (Lsdb) COMPONENT Rtr Ospf ExtLsdbEntry (ExtLsdb)
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Rtr Ospf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes are used to configure the OSPF component.
Mib	no_mib

ATTRIBUTE Rtr Ospf routerId (id)

Access	Read and write
Description	This attribute is an Ip Address that uniquely identifies the router in the autonomous system.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Ospf snmpAdminStatus

Access	Read and write
Description	The administrative status of the OSPF Component in this routing component (*Vr*, *Rtr* or *Vrf*).
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Ospf asBdrRtrStatus (asBr)

Access	Read and write
Description	This attribute is a flag to note whether this router is an autonomous system border router. If this router is configured to export any routes learned from other than OSPF-internal protocol, this attribute should be configured as autonomous system border router.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Ospf tosSupport

Access	Read and write
Description	The router's support for type-of-service routing. Only one value will be allowed. This is a deviation from supporting the MIB.

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Mib	no_mib
Values	false
Default	false

ATTRIBUTE Rtr Ospf multicastForward

Access	Read and write
Description	A bit mask indicating the limits on Network Layer Multicast (class D) forwarding. It is represented as a sum of the following: if intra-Area forwarding is permitted, 1; else 0 if inter-Area forwarding is permitted 2; else 0 if inter-AS forwarding is permitted, 4; else 0 Only the value of 0 is being supported and this is a MIB deviation.
Mib	no_mib
Values	Decimal (0..0)
Default	0

ATTRIBUTE Rtr Ospf migrateRip

Access	Read and write
Description	This Attribute sets the preference level of OSPF-internal routes to be less preferred than RIP. This attribute should only be used when starting a migration of a network from RIP to OSPF. When ready to cut over to OSPF, set this attribute to a value of ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with the *migrateRip* attribute set to a value of ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Ospf generateDefaultRouteMetric (genDefaultMetric)

Access	Read and write
Description	If this router is configured as an autonomous system border router, then this attribute causes the default route to be generated with a metric value equal to *generateDefaultRouteMetric* value. This route is put in the OSPF update along with the normal update routes when updates are sent to the neighbors. No default route will be generated if the value is 0.

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Mib	no_mib
Values	Signed (-1..65535)
Default	0

ATTRIBUTE Rtr Ospf redistributeIbgp (ribgp)

Access	Read and write
Description	This attribute specifies whether the export policies of this *Ospf* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all***. If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false***, routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Ospf estimatedNumberOfInternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes in the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	no_mib
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Rtr Ospf estimatedNumberOfExternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes external to the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	no_mib
Values	Decimal (0..65535)
Default	500

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ATTRIBUTE Rtr Ospf estimatedNumberOfAreas

Access	Read and write
Description	This attribute specifies the average estimated number of areas in the autonomous system that this OSPF instance will have to keep track of.
Mib	no_mib
Values	Decimal (0..65535)
Default	2

ATTRIBUTE Rtr Ospf estimatedNumberOfInterfacesPerArea

Access	Read and write
Description	This attribute specifies the average estimated number of interfaces in a given area that this OSPF instance will have to keep track of.
Mib	no_mib
Values	Decimal (0..65535)
Default	10

ATTRIBUTE Rtr Ospf estimatedNumberOfNeighborsPerInterface

Access	Read and write
Description	This attribute specifies the average estimated number of neighbors that a given interface will have on it in this OSPF interface.
Mib	no_mib
Values	Decimal (0..65535)
Default	3

ATTRIBUTE Rtr Ospf defaultOspfIntRtePreference (ospfIntPref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF internal routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	30

ATTRIBUTE Rtr Ospf defaultOspfExt1RtePreference (ospfExt1Pref)

Access	Read and write

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Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 1 routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	80

ATTRIBUTE Rtr Ospf defaultOspfExt2RtePreference (ospfExt2Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 2 routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	120

ATTRIBUTE Rtr Ospf opaqueCapability (opcap)

Access	Read and write
Description	This attribute specifies whether the OSPF instance is allowed to participate in flooding Opaque LSAs. Such LSAs are also stored in the InwOspfLsdbEntry. Applications, such as MPLS Traffic Engineering, use this mechanism to flood their information throughout a network. Of the three Opaque LSA types (9,10,11), only type 10 LSAs (area scope) are supported.The OSPF instance remains fully inter-operable with non-opaque-capable neighbors. Opaque capability is not fully supported. When the ***mplsTeEmulation*** feature is provisioned, setting this attribute to ***true*** activates hooks to emulate TE capability by flooding hard-coded type 10 TE LSAs to opaque-capable neighbors. This emulated TE functionality is not standards compliant and is strictly provided for MPLS RSVP-TE inter-operability with vendors that are dependent on MPLS TE to establish LSPs.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Ospf spareInstance (spInst)

Access	Read and write
Description	This attribute specifies whether to maintain a copy of the link state database on the standby card. When this attribute is set to ***disable***, OSPF does not maintain a copy of the link state database.

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If the *virtualRouterProcessor* attribute of this *VirtualRouter* is set to ***Lp/0***, then the following conditions must both be true for a copy of the link-state database to be maintained on the standby CP:

- This attribute must be set to ***enable***, and

- The *Shelf cpEquipmentProtection* attribute must be set to ***hot***.

Mib: no_mib

Values: enable
disable

Default: disable

ATTRIBUTE Rtr Ospf spfHoldTime (spfTime)

Access: Read and write

Description: This attribute specifies the minimum time interval between SPF calculations. If a link state change in the autonomous system is detected and the time since the last SPF calculation is greater than *spfHoldTime*, then the SPF calculation starts immediately. Otherwise, the SPF calculation waits until a time of at least *spfHoldTime* has elapsed since the previous SPF calculation.

Setting this attribute to a lower value decreases convergence time in the OSPF autonomous system, but uses more CPU resource more frequently. Setting this attribute to a higher value increases convergence time but provides for a more scalable node configuration, especially if there are many *Ospf* components configured on the node.

Mib: no_mib

Values: Decimal (1..60)

Units: seconds

Default: 1

ATTRIBUTE Rtr Ospf alarmGeneration (alarms)

Access: Read and write

Description: This attribute specifies the level of alarm generation for this *Ospf* instance.

A value of ***all*** specifies that all OSPF alarms are made visible.

A value of ***normal*** specifies that all existing OSPF alarms are made visible, except *Ospf NeighborEntry* state change alarms.

A value of ***none*** specifies that no OSPF alarms are made visible.

It is recommended that *VirtualRouter* components with the *vpnMode* attribute set to ***carrier*** should have the *alarmGeneration* attribute set to

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all. *VirtualRouter* components with the *vpnMode* attribute set to ***customer*** should have the *alarmGeneration* attribute set to either ***normal*** or ***none***, for scalability reasons. Similarly, the *alarmGeneration* attribute should be set to ***all*** for *Router*. The *alarmGeneration* attribute should be set to either ***normal*** or ***none*** for *Vrf* for scalability reasons.

Mib	no_mib
Values	none normal all
Default	all

ATTRIBUTE Rtr Ospf ecmpStatus

Access	Read and write
Description	This attribute specifies whether the Equal Cost Multi-Path (ECMP) functionality is enabled or not in the network meaning that the number of next hops for one route learned through OSPF depend on the value of *ecmpStatus*. If *ecmpStatus* is ***enabled,*** a maximum of three next hops are kept for one route. If it is ***disabled***, one next hop is kept for that route.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Ospf attachAsTag (asTag)

Access	Read and write
Description	This attribute specifies the treatment of the OSPF tag when routes are redistributed between BGP and OSPF. If this attribute is set to ***enabled***, an AS number is encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is checked against the AS number to avoid routing loops. If this attribute is set to ***disabled***, an AS number is not encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is not checked against the AS number.
Mib	no_mib
Values	disabled enabled
Default	enabled

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GROUP Rtr Ospf Operational (Oper)

Properties	Operational
Description	These group of attributes identifies the operational attributes for this OSPF Component.
Mib	no_mib

ATTRIBUTE Rtr Ospf versionNumber (ver)

Access	Read only
Description	The Current Version number of the OSPF Protocol. (2).
Mib	no_mib
Values	Decimal (2..2)
Default	2

ATTRIBUTE Rtr Ospf areaBdrRtrStatus

Access	Read only
Description	This attribute is used to specify whether this router is configured as an area border router.
Mib	no_mib
Values	true false
Default	No default

ATTRIBUTE Rtr Ospf externLsaCount

Access	Read only
Description	The number of external (LS type 5) link-state advertisements in the link-state database.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Ospf externLsaChecksumSum

Access	Read only
Description	The 32-bit unsigned sum of the LS checksums of the external link-state database. This sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	no_mib

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf originateNewLsas

Access	Read only
Description	The number of new link-state advertisements that have been originated. This number is incremented each time the router originates a new LSA.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf rxNewLsas

Access	Read only
Description	The number of link-state advertisements received determined to be new instantiations. This number does not include newer instantiations of self-originated link-state advertisements.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Ospf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Ospf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Ospf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Ospf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

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Default	idle

GROUP Rtr Ospf OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Ospf snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Ospf AreaEntry (Area)

Instance	IP address
Groups	GROUP Rtr Ospf Area Provisioned (Prov) GROUP Rtr Ospf Area Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf AreaEntry/<Ip Address>* *Rtr/<string> Ospf AreaEntry/<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaEntry/<Ip Address>* This component contains the information about various areas that the router is connected to.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Area Provisioned (Prov)

Properties	Provisioned

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Description	This group describes the set of provisionable attributes for the AreaEntry Component.
Mib	no_mib

ATTRIBUTE Rtr Ospf Area authType

Access	Read and write
Description	The authentication type specified for this area.
Mib	no_mib
Values	none simplePassword md5
Default	none

ATTRIBUTE Rtr Ospf Area importAsExtern

Access	Read and write
Description	The area's support for importing AS external link-state advertisements. For backbone area (that is, areaId 0.0.0.0), this attribute must be set to ***importExternal***.
Mib	no_mib
Values	importExternal (external) importNoExternal (noExternal) importNssa (nssa)
Default	importExternal

ATTRIBUTE Rtr Ospf Area areaSummary

Access	Read and write
Description	This variable controls the import of summary LSAs into stub areas. If it is ***noAreaSummary***, the router will neither originate nor propagate summary LSAs into the stub areas. It will rely entirely on its default route. If it is ***sendAreaSummary***, the router will both summarize and propagate summary LSAs.
Mib	no_mib
Values	noAreaSummary sendAreaSummary
Default	noAreaSummary

GROUP Rtr Ospf Area Operational (Oper)

Properties	Operational
Description	This group of attributes describes the Operational set of attributes for the AreaEntry component.

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Mib	no_mib

ATTRIBUTE Rtr Ospf Area spfRuns

Access	Read only
Description	The number of times that the intra-area route table has been calculated using this area's link-state database since the protocol became operational.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Area areaBdrRtrCount

Access	Read only
Description	The total number of area border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Area asBdrRtrCount

Access	Read only
Description	The total number of Autonomous System border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Area lsaCount

Access	Read only
Description	The total number of link-state advertisements in this area's link-state database, excluding AS External LSAs.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Area areaLsaCksumSum

Access	Read only

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Description	The 32-bit unsigned sum of the link-state advertisement's LS checksums contained in this area's link-state database. This sum excludes external (LS type 5) link-state advertisements. The sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Ospf StubAreaEntry (Stub)

Instance	areaId [IP address] tos [Decimal (0..0)]
Groups	GROUP Rtr Ospf Stub Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* This component describes metrics that a default area border router will advertise into a stub area.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Stub Provisioned (Prov)

Properties	Provisioned
Description	These set of attributes explain the provisionable group for the *StubAreaEntry*.
Mib	no_mib

ATTRIBUTE Rtr Ospf Stub metric (metric)

Access	Read and write
Description	The metric value applied at the indicated type of service.
Mib	no_mib
Values	Decimal (1..4294967295)
Default	1

ATTRIBUTE Rtr Ospf Stub metricType

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Access	Read and write
Description	This type of the metric advertised as a default route.
Mib	no_mib
Values	ospfMetric comparableCost nonComparable
Default	ospfMetric

ATTRIBUTE Rtr Ospf Stub advertiseDefault

Access	Read and write
Description	This attribute determines whether or not the default routing information will be advertised, depending on other criterion. Setting this value to ***no*** can prevent advertising default routing information. If the value of the attribute is set to ***yes***, then the value of the attribute *importAsExtern* for that particular *AreaEntry* should be set to ***importNssa***.
Mib	no_mib
Values	yes no
Default	yes

COMPONENT Rtr Ospf AreaAggregateEntry (Aggregate)

Instance	areaId [IP address] lsdbType [summaryLink nssaExternalLink] aggregateNet [IP address] aggregateMask [IP address]
Groups	GROUP Rtr Ospf Aggregate Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf AreaAggregateEntry/<Ip Address>,<enum>, <Ip Address>,<Ip Address>* *Rtr/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>, <Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,<Ip Address>,<Ip Address>*

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This table entry replaces the Area Summary table from RFC1253 and is used as an extension for CIDR support.

Mib: no_mib

Common Verbs: Help, List, Display, Add, DELete

GROUP Rtr Ospf Aggregate Provisioned (Prov)

Properties: Provisioned

Description: Identifies a group of provisionable attributes.

Mib: no_mib

ATTRIBUTE Rtr Ospf Aggregate effect

Access: Read and write

Description: This attribute determines whether or not the routing information will be advertised, depending on other criterion. Setting this value to ***doNotAdvertiseMatching*** can prevent advertising routing information for the address and mask values specified as the indices for this entry.

Mib: no_mib

Values: advertiseMatching, doNotAdvertiseMatching, invalid

Default: advertiseMatching

COMPONENT Rtr Ospf HostEntry (Host)

Instance: address [IP address]
tos [Decimal (0..0)]

Groups: GROUP Rtr Ospf Host Provisioned (Prov)

Scope: Application

Description: *Vr/<string> Ip Ospf HostEntry/<Ip Address>,<Decimal>*
Rtr/<string> Ospf HostEntry/<Ip Address>,<Decimal>
Rtr/<string> Vrf/<string> Ospf HostEntry/<Ip Address>,<Decimal>
This component indicates what hosts are directly attached to the router,

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and what metrics and types of service should be advertised for them. This component is an optional subcomponent of Ospf.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Host Provisioned (Prov)

Properties	Provisioned
Description	Provisionable set of attributes for the Host entry.
Mib	no_mib

ATTRIBUTE Rtr Ospf Host areaId

Access	Read and write
Description	This is an Ip address for the Host Entry that indicates the area it belongs to.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Ospf Host metric

Access	Read and write
Description	The metric to be advertised.
Mib	no_mib
Values	Decimal (1..65535)
Default	1

COMPONENT Rtr Ospf VirtIfEntry (VirtIf)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	GROUP Rtr Ospf VirtIf Provisioned (Prov) GROUP Rtr Ospf VirtIf Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>*

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This component describes all the virtual links configured for this OSPF Router.

Mib no_mib

Opt. Subcomp. COMPONENT Rtr Ospf VirtIf Md5KeyId (KeyId)

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Ospf VirtIf Provisioned (Prov)

Properties Provisioned

Description This group of attributes provide provisioning data for the *VirtIfEntry*.

Mib no_mib

ATTRIBUTE Rtr Ospf VirtIf transitDelay (transDelay)

Access Read and write

Description The estimated number of seconds it takes to transmit a link-state update packet over this interface.

Mib no_mib

Values Decimal (1..3600)

Units seconds

Default 1

ATTRIBUTE Rtr Ospf VirtIf retransInterval (retransInt)

Access Read and write

Description The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description
and link-state request packets. This value would be well over the expected round-trip time.

Mib no_mib

Values Decimal (1..3600)

Units seconds

Default 5

ATTRIBUTE Rtr Ospf VirtIf helloInterval (helloInt)

Access Read and write

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Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for the virtual neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Rtr Ospf VirtIf rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router's Hello packets have not been seen before its neighbors declare the router down. This should be some multiple of the Hello interval. This value must be the same for the virtual neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	60

ATTRIBUTE Rtr Ospf VirtIf authKey

Access	Write only
Description	If authentication type is simple password, the password for this virtual circuit. If the value of the attribute is not set, then this attribute is ignored by the application. If the value of this attribute is set, then the value of the attribute *authType* under this particular *Area* should be set to ***simplePassword***, otherwise the application will ignore this authentication key.
Mib	no_mib
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Rtr Ospf VirtIf authType

Access	Read and write
Description	The authentication type specified for this *VirtIf*.
Mib	no_mib
Values	none simplePassword md5 SameAsArea

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Default	SameAsArea

GROUP Rtr Ospf VirtIf **Operational (Oper)**

Properties	Operational
Description	Represents a group of operational attributes for the *VirtIfEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Ospf VirtIf **state (state)**

Access	Read only
Description	The state of the OSPF virtual interface.
Mib	no_mib
Values	down pointToPoint
Default	No default

ATTRIBUTE Rtr Ospf VirtIf **events (events)**

Access	Read only
Description	The number of state changes or error events on the virtual link.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Ospf VirtIf **Md5KeyId (KeyId)**

Instance	Decimal (1..255)
Groups	GROUP Rtr Ospf VirtIf KeyId Provisioned (Prov) GROUP Rtr Ospf VirtIf KeyId Operational (Oper)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>*

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This component contains the information about various MD5 Authentication keys.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf VirtIf KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Ospf VirtIf KeyId md5Key (Key)

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	no_mib
Values	String (0..16, ASCII)
Default	""

GROUP Rtr Ospf VirtIf KeyId Operational (Oper)

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Ospf VirtIf KeyId inUseForGeneration (inUse)

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	no_mib
Values	true false
Default	false

COMPONENT Rtr Ospf Export

Instance	Decimal (0..65535)

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Groups	GROUP Rtr Ospf Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf Export/n* *Rtr/<string> Ospf Export/n* *Rtr/<string> Vrf/<string> Ospf Export/n* Each instance of this component specifies an OSPF export policy. An OSPF export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as OSPF external routes onto attached OSPF areas of the routing component (*Vr*, *Rtr* or *Vrf*). The *Ospf* component by default advertises all OSPF external routes based on the metric and tag in the IP forwarding table.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Ospf Export NetworkList (NetList)
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Export Provisioned (Prov)

Properties	Provisioned
Description	This Group contains all the Provisioned attributes for the Export Component.
Mib	no_mib

ATTRIBUTE Rtr Ospf Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Ospf Export metric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *metric* is ignored. The *metric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes.

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	A value of -1 indicates that the metric associated with the route in the forwarding table is used.
Mib	no_mib
Values	Signed (-1..16777215)
Default	-1

ATTRIBUTE Rtr Ospf Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Ospf* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	no_mib
Values	all egp rip staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

ATTRIBUTE Rtr Ospf Export ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of an *Interface* or a *LogicalIf* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Ospf Export ripNeighbor (ripNbr)

Access	Read and write

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Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP neighbor of which the routes are learned from. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP neighbor.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Ospf Export **egpAsId (egpAs)**

Access	Read and write
Description	This attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Ospf Export **tag**

Access	Read and write
Description	This attribute specifies the OSPF tag to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *tag* is ignored. The *tag* value is not used to select which routes to block or send, but rather the tag value advertised for the routes. A value of 4294967295 indicates that the tag associated with the route in the forwarding table is used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Ospf Export **extLsaMetricType**

Access	Read and write
Description	This attribute specifies the metric type in the OSPF external link state advertisement of the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *extLsaMetricType* is ignored. The *extLsaMetricType* value is not used to select which routes to block or send, but rather the metric value advertised

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	for the routes. The value ***useProtocolDefault*** indicates the metric type is automatically chosen based on the routing protocol which the route was learned from.
Mib	no_mib
Values	useProtocolDefault type1 type2
Default	useProtocolDefault

ATTRIBUTE Rtr Ospf Export **bgpAsId (bgpAs)**

Access	Read and write
Description	This attribute specifies the BGP AS from which a BGP route is learned from. This key is used only if the *protocol* is ***bgpExternal***. *bgpAsId* of value ***0*** matches all ASs.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Ospf Export **bgpPeerIp (peerIp)**

Access	Read and write
Description	This attribute specifies the BGP peer where the routes were learned from. *bgpPeerIp* of ***0*** matches all BGP peers. This attribute is used as a key when *protocol* is set to ***bgpInternal*** or ***bgpExternal***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Ospf Export **description (desc)**

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export OSPF routes to MCI’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Ospf Export **NetworkList (NetList)**

Instance	Decimal (0..65535)
Groups	GROUP Rtr Ospf Export NetList Provisioned (Prov)

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Scope	Application
Description	This component identifies a set of attributes when matched determines the export policy applied.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Export NetList **Provisioned (Prov)**

Properties	Provisioned
Description	This group identifies the set of provisionable attributes for the *ExportNetworkList* component.
Mib	no_mib

ATTRIBUTE Rtr Ospf Export NetList **ipAddress**

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Ospf Export NetList **ipMask (mask)**

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	no_mib
Values	IP address
Default	No default

COMPONENT Rtr Ospf **VirtNbrEntry (VirtNbr)**

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	GROUP Rtr Ospf VirtNbr Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>*

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Rtr/<string> Vrf/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>
This component describes all of OSPF's Virtual Neighbors.

Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ospf VirtNbr Operational (Oper)

Properties	Operational
Description	This group identifies a set of operational attributes.
Mib	no_mib

ATTRIBUTE Rtr Ospf VirtNbr nbrIpAddress (addr)

Access	Read only
Description	Indicates the Ip address this interface this virtual neighbor is using.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 1, if set indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr state

Access	Read only
Description	The state of the virtual neighbor relationship.
Mib	no_mib
Values	down attempt init twoWay

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	exchange exchangeStatrt loading full
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr events

Access	Read only
Description	The number of times this virtual link has changed its state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr exchangeStatus

Access	Read only
Description	Indicates the exchange status of the entry in this table.
Mib	no_mib
Values	master slave
Default	No default

COMPONENT Rtr Ospf NeighborEntry (Nbr)

Instance	address [IP address] addressLessIndex [Decimal (0)]
Groups	GROUP Rtr Ospf Nbr Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>*

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This component is a dynamic subcomponent of OSPF that describes all the OSPF Neighbors.

Mib no_mib

Common Verbs Help
List
Display

GROUP Rtr Ospf Nbr Operational (Oper)

Properties Operational

Description This group identifies the operational set of attributes for the *NeighborEntry*.

Mib no_mib

ATTRIBUTE Rtr Ospf Nbr rtrId

Access Read only

Description An Ip Address that uniquely identifies the neighboring router in the autonomous system.

Mib no_mib

Values IP address

Default No default

ATTRIBUTE Rtr Ospf Nbr options

Access Read only

Description A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.

Mib no_mib

Values Decimal (0..7)

Default No default

ATTRIBUTE Rtr Ospf Nbr priority

Access Read only

Description The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network.

Mib no_mib

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Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Ospf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	no_mib
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Rtr Ospf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Nbr nbmaNbrStatus

Access	Read only
Description	This attribute describes the status of the entry.
Mib	no_mib
Values	valid invalid

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Default	No default

ATTRIBUTE Rtr Ospf Nbr exchangeStatus

Access	Read only
Description	Indicates the exchange status for a neighbor entry.
Mib	no_mib
Values	master slave
Default	No default

ATTRIBUTE Rtr Ospf Nbr permanence

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	no_mib
Values	dynamic permanent
Default	dynamic

ATTRIBUTE Rtr Ospf Nbr opaqueCapability (opcap)

Access	Read only
Description	This attribute displays the Opaque capability of this neighbor.
Mib	no_mib
Values	true false
Default	No default

COMPONENT Rtr Ospf LsdbEntry (Lsdb)

Instance	areaId [IP address] lsdbType [Decimal (1..10)] lsId [IP address] routerId [IP address]
Groups	GROUP Rtr Ospf Lsdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address> Rtr/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address> Rtr/<string> Vrf/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>*

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This dynamic component contains the Link State Advertisements (LSA) from all areas the device is connected to. The supported types are: router-LSA (1), network-LSA (2), network-summary-LSA (3), ASBR-summary-LSA (4), AS-external-LSA (5) Group-membership-LSA (6) NSSA-LSA (7) and opaqueArea-LSA (10).

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr Ospf Lsdb Operational (Oper)

Properties: Operational

Description: This group describes the Operational set of attributes for the *LsdbEntry*.

Mib: no_mib

ATTRIBUTE Rtr Ospf Lsdb sequence

Access: Read only

Description: A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Rtr Ospf Lsdb age

Access: Read only

Description: The age of the Link State Advertisement in seconds.

Mib: no_mib

Values: Decimal (0..3600)

Units: seconds

Default: No default

ATTRIBUTE Rtr Ospf Lsdb checksum

Access: Read only

Description: The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.

Mib: no_mib

Values: Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Rtr Ospf Lsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	no_mib
Values	String (1..65535, Hex)
Default	No default

COMPONENT Rtr Ospf ExtLsdbEntry (ExtLsdb)

Instance	lsdbType [Decimal (1..7)] lsId [IP address] routerId [IP address]
Groups	GROUP Rtr Ospf ExtLsdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Divertimentos (LSA) from other Autonomous systems. It is identical in format to the *Lsdb*. The purpose is to allow all external LSAs to be displayed together rather than distributed over the different non-stub areas. These types are: AS-external-LSA (5) and NSSA-LSA (7).
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ospf ExtLsdb Operational (Oper)

Properties	Operational
Description	This group describes the operational set of attributes for the *ExtLsdbEntry*.
Mib	no_mib

ATTRIBUTE Rtr Ospf ExtLsdb sequence

Access	Read only

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Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf ExtLsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	no_mib
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Rtr Ospf ExtLsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf ExtLsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	no_mib
Values	String (1..36, Hex)
Default	No default

COMPONENT Rtr Isis (Isis)

Groups	GROUP Rtr Isis Provisioned (Prov) GROUP Rtr Isis OsiState (State) GROUP Rtr Isis ErrorStatistics (Errors) GROUP Rtr Isis OperationalStatus (OperStatus)
Scope	Application

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Description	*Router/<id> Isis* This component is configured to control the Intermediate System to Intermediate System (ISIS) routing protocol. This component requires at least one *Net* subcomponent and no more than 3 *Net* subcomponents to be provisioned. This component requires at least one *Level* subcomponent to be provisioned. For ISIS routes to be entered into the routing table, at least one active *IsisIf* component must be provisioned.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Isis NetworkEntityTitle (Net) COMPONENT Rtr Isis IsisLevel (Level)
Dyn. Subcomp.	COMPONENT Rtr Isis NeighborEntry (Nbr)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Isis Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes is used to configure the *Isis* component.
Mib	no_mib

ATTRIBUTE Rtr Isis snmpAdminStatus (admin)

Access	Read: All Write: All
Description	This attribute specifies the administrative status of the *Isis* component in this *Router*.
Mib	no_mib
Values	up down testing
Default	up

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ATTRIBUTE Rtr Isis intermediateSystemType (isType)

Access	Read: All Write: All
Description	This attribute specifies the ISIS level functionality of this *Router* as defined in ISO specification 10589. In this release only level1 ISIS support exists and therefore the value ***level1*** is the only value supported by this attribute.
Mib	no_mib
Values	level1
Default	level1

ATTRIBUTE Rtr Isis overloadBitControl

Access	Read: All Write: All
Description	This attribute specifies how the value of the overload bit in the *Router's* Link State PDU (LSP) should be derived. A value of ***on*** specifies that the overload bit is forced on in the LSP. A value of ***auto*** specifies that the overload bit value is fully controlled by system software. This means that system software, based on current operating conditions, may choose to set the overload bit as appropriate. Any other value specifies, in seconds, the time period after a software restart that the overload bit will be forced on.
Mib	no_mib
Values	Decimal (60..1800) on auto
Default	auto

ATTRIBUTE Rtr Isis ignoreLspErrors

Access	Read: All Write: All
Description	This attribute specifies how the system behaves on receipt of a corrupted Link State PDU (LSP). If the attribute value is ***ignore***, the system will discard a corrupted LSP. If the attribute value is ***purge***, the system will purge the LSP.
Mib	no_mib
Values	purge ignore

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Default	purge

ATTRIBUTE Rtr Isis lspMaxLifetime

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, that an LSP generated by this *Router* may exist before being considered to be stale and therefore should be purged by other nodes in the network. A *Check Prov* error occurs if this attribute specifies a value less than or equeal to the value specified for the *lspRefreshInterval* attribute. A *Check Prov* warning is produced if the value of this attribute is not at least 300 seconds greater than the value of the *lspRefreshInterval* attribute.
Mib	no_mib
Values	Decimal (350..65535)
Units	seconds
Default	1200

ATTRIBUTE Rtr Isis lspRefreshInterval

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, between successive retransmissions of this *Router's* LSP. A *Check Prov* error occurs if this attribute specifies a value greater than the value specified for the *lspMaxLifetime* attribute. A *Check Prov* warning is produced if the value of this attribute is not at least 300 seconds less than the value of the *lspMaxLifetime* attribute.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	900

ATTRIBUTE Rtr Isis spfDelay

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the delay between the detection of a network topology change and the execution of the ISIS Shortest Path First (SPF) route calculation algorithm.
Mib	no_mib
Values	Decimal (1..10000)

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Units	msec
Default	2000

ATTRIBUTE Rtr Isis alarmGeneration

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Isis* instance. A value of ***all*** specifies that all ISIS alarms are made visible. A value of ***none*** specifies that no ISIS alarms are made visible.
Mib	no_mib
Values	none all
Default	all

GROUP Rtr Isis OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Isis adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Isis operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Isis usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Isis ErrorStatistics (Errors)

Properties	Operational
Description	The attributes in this group are essentially statistics or counters. Each attribute counts each particular, abnormal event that has occurred since the *Isis* component was last enabled or unlocked.

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Mib	no_mib

ATTRIBUTE Rtr Isis rxCorruptedLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of corrupted LSPs received on all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis lsdbOverloads

Access	Read: All Write: Illegal
Description	This attribute indicates the number of occurrences of link state database overloads for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis attemptsToExceedMaxSeqNum

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that the maximum LSP sequence number has be reached for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis seqNumSkips

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that LSPs have been received where sequence numbers are nonsequential with respect to the previously received LSP. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis ownLspPurges

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has purged its own LSP. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis idFieldLenMismatches

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has received PDUs with ID Field lengths that do not match those used by this *Router*. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis maxAreaAddrMismatches

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has received a PDU with the “maximum number of supported area addresses” field set to a value greater than the maximum number of area addresses supported by this *Router*. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Isis OperationalStatus (OperStatus)

Properties	Operational

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Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Isis snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Isis NetworkEntityTitle (Net)

Instance	String (1..46, ASCII)
Scope	Application
Description	*Rtr/id Isis NetworkEntityTitle/<net>* This component represents the *Router's* Network Entity Title (NET). A NET is an ISO address that uniquely identifies an ISIS router. The NET format is specified in ISO 8348. The *Net* instance ID must be formatted as follows: AA.aaaa.SSSS.SSSS.SSSS.NN where; "AA" represents the ISIS area number and is a two hex digit string. "aaaa" represents the ISIS area number and is a string of 0 to 24 hex digits and there must be an even number of digits in this field. "SSSS.SSSS.SSSS" represents this *Router's* ISIS system ID. The system ID is made up of 12 hex digits, grouped in 3 groups of 4 hex digits, separated by the "." character. Note that when more than one *Net* component is provisioned, all *Net* components must have the same system ID portion of the *Net* instance ID. "NN" represents the NSEL portion of the *Net* instance ID. This must always be "00" (zero zero).

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The sections of the *Net* instance ID are separated by the "." character.

Mib: no_mib

Common Verbs: Help, List, Display, Add, DELete

COMPONENT Rtr Isis IsisLevel (Level)

Instance: Decimal (1..1)

Groups: GROUP Rtr Isis Level Provisioned (Prov)

Scope: Application

Description: *Rtr/<s> Isis IsisLevel/<1..2>*
The ISIS routing protocol supports a two-level routing hierarchy. This component represents those ISIS routing aspects that are specific to each level. In this release, only *Level/1* is supported.

Mib: no_mib

Dyn. Subcomp.: COMPONENT Rtr Isis Level LsDbEntry (Lsdb)

Common Verbs: Help, List, Display, Add, DELete

GROUP Rtr Isis Level Provisioned (Prov)

Properties: Provisioned

Description: This group of attributes is used to configure each ISIS routing level.

Mib: no_mib

ATTRIBUTE Rtr Isis Level preference

Access: Read: All
Write: All

Description: This attribute specifies the routing preference assigned to ISIS routes for this level. A lower value indicates a "more preferred" route.

Mib: no_mib

Values: Decimal (1..255)

Default: 32

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COMPONENT Rtr Isis Level LsDbEntry (Lsdb)

Instance	sysId [String (1..14, ASCII)] psnid [Decimal (0..65536)] fragid [Decimal (0..65535)]
Groups	GROUP Rtr Isis Level Lsdb Operational
Scope	Application
Description	Rtr/<id> Isis Level/n LsDbEntry/SysId,PSNId,FragId This component describes an entry in the ISIS LSP Database.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Isis Level Lsdb Operational

Properties	Operational
Description	This group contains the set of operational attributes of the *LsDbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Isis Level Lsdb seqNumber

Access	Read: All Write: Illegal
Description	This attribute indicates the sequence number of the LSP.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb remainingLifetime

Access	Read: All Write: Illegal
Description	This attribute indicates, in seconds, the remaining lifetime of the LSP.
Mib	no_mib
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb attachment (att)

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Access	Read: All Write: Illegal
Description	This attribute indicates whether the default attachment bit is set in this LSP.
Mib	no_mib
Values	notAttached attached
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb partitionRepair

Access	Read: All Write: Illegal
Description	This attribute indicates whether the partition repair bit is set in this LSP.
Mib	no_mib
Values	off on
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb overloadBit

Access	Read: All Write: Illegal
Description	This attribute indicates whether the overload bit is set in this LSP.
Mib	no_mib
Values	off on
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb isType

Access	Read: All Write: Illegal
Description	This attribute indicates which system type bits are set in this LSP.
Mib	no_mib
Values	none level1 level2 both
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb lspBody

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Access	Read: All Write: Illegal
Description	This attribute indicates the content of this LSP's body.
Mib	no_mib
Values	String (1..1500, Hex)
Default	No default

COMPONENT Rtr Isis NeighborEntry (Nbr)

Instance	sysId [String (1..14, ASCII)] level [Decimal (1..2)]
Groups	GROUP Rtr Isis Nbr Operational (Oper)
Scope	Application
Description	*Rtr/<id> Isis Nbr/SysId,Level* This component represents the list of ISIS adjacencies formed with the specified ISIS router at the specified level.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Isis Nbr Adjacency (Adj)
Common Verbs	Help List Display

GROUP Rtr Isis Nbr Operational (Oper)

Properties	Operational
Description	This group contains only one operational attribute, which represents the number of adjacencies formed with the router identified by the instance ID of the parent *NeighborEntry* component. This instance ID specifies the System ID of the neighbor router.
Mib	no_mib

ATTRIBUTE Rtr Isis Nbr adjacencies

Access	Read: All Write: Illegal
Description	This attribute indicates the number of adjacencies between this *Router* and the specified neighbor router at the specified ISIS level. The neighbor's system ID and the level at which the adjacency was formed is specified by the instance ID of the *NeighborEntry* component.
Mib	no_mib
Values	Decimal (0..65535)

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Default	No default

COMPONENT Rtr Isis Nbr Adjacency (Adj)

Instance	Decimal (1..65535)
Groups	GROUP Rtr Isis Nbr Adj Operational (Oper)
Scope	Application
Description	*Rtr/<id> Isis Nbr/SysId,Level Adjacency/n* This component represents the collection information available regarding an adjacency formed with another ISIS router.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Isis Nbr Adj Operational (Oper)

Properties	Operational
Description	This group contains a set of attributes that indicate the characteristics of the adjacency.
Mib	no_mib

ATTRIBUTE Rtr Isis Nbr Adj neighborLinkLayerAddress (nbrLLAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the neighbor's link layer address for the link on which the adjacency was formed. In ISO ISIS terminology, this is referred to as the subnetwork point of attachment (SNPA).
Mib	no_mib
Values	String (0..11, ASCII)
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj interface

Access	Read: All Write: Illegal
Description	This attribute indicates the *Interface* component on which this adjacency was formed. The format will be: *Rtr/<s> Interface/<IP Address>*
Mib	no_mib
Values	The name of the component

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Default	No default

ATTRIBUTE Rtr Isis Nbr Adj **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the operating state of the *adjacency*.
Mib	no_mib
Values	null initializing up fail
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj **holdTime**

Access	Read: All Write: Illegal
Description	This attribute indicates, in seconds, the maximum time that may elapse without receiving a hello message before the adjacency is considered down.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj **priority**

Access	Read: All Write: Illegal
Description	This attribute indicates the DIS priority of the neighbor associated with this *adjacency*.
Mib	no_mib
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj **protocols**

Access	Read: All Write: Illegal
Description	This attribute indicates the list of protocols supported by the neighbor on this *adjacency*.
Mib	no_mib

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Values	none osi_only ip_only osi_and_ip
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj areaAddresses

Access	Read: All Write: Illegal
Description	This attribute indicates the list of area addresses used by the neighbor associated with this *adjacency*.
Mib	no_mib
Values	String (0..85, ASCII)
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj age

Access	Read: All Write: Illegal
Description	This attribute indicates the elapsed time, in seconds, since this *adjacency* was established.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

COMPONENT Rtr RelayBC

Groups	GROUP Rtr RelayBC Provisioned (Prov) GROUP Rtr RelayBC Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip RelayBC* *Rtr/<string> RelayBC* *Rtr/<string> Vrf/<string> RelayBC* The *InwRelayBroadcast* component controls the dissemination of IP broadcast packets received as Link-Layer broadcast.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr RelayBC PortEntry (Port)
Common Verbs	Help List Display

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GROUP Rtr RelayBC Provisioned (Prov)

Properties	Provisioned
Description	This group contains global configuration attributes for the Relay Broadcast component.
Mib	no_mib

ATTRIBUTE Rtr RelayBC relayStatus

Access	Read and write
Description	Specifies whether or not IP will forward IP broadcast packets that were received as Link-Layer broadcasts.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr RelayBC relayNdStatus

Access	Read and write
Description	Specifies whether or not IP will forward broadcast packets whose protocol is Sun ND.
Mib	no_mib
Values	enabled disabled
Default	disabled

GROUP Rtr RelayBC Operational (Oper)

Properties	Operational
Description	This group contains RelayBroadcast component statistics.
Mib	no_mib

ATTRIBUTE Rtr RelayBC relayNdCount

Access	Read only
Description	Indicates the number of Sun ND packets received by this router which were forwarded. *relayNdCount* wraps to zero if reached its maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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COMPONENT Rtr RelayBC PortEntry (Port)

Instance	Decimal (0..4294967295)
Groups	GROUP Rtr RelayBC Port Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip RelayBC PortEntry/<Decimal>* *Rtr/<string> RelayBC PortEntry/<Decimal>* This component is a table of destination UDP port numbers. In order for a packet to be forwarded by Relay Broadcast, the packet's destination UDP port number must be listed in this table.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr RelayBC Port Operational (Oper)

Properties	Operational
Description	This group contains statistics related to *InwPortEntry*.
Mib	no_mib

ATTRIBUTE Rtr RelayBC Port relayBcUdpCount

Access	Read only
Description	Indicates the number of forwarded packets with this destination UDP port number. *relayBcUdpCount* wraps to zero if reached its maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr RoutingInformationProtocol (Rip)

Groups	GROUP Rtr Rip Provisioned (Prov) GROUP Rtr Rip OsiState (State) GROUP Rtr Rip AdministrativeControl (AdminControl) GROUP Rtr Rip OperationalStatus (OperStatus) GROUP Rtr Rip Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Rip* *Rtr/<string> Rip* *Rtr/<string> Vrf/<string> Rip*

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This component represents the Routing Information Protocol for the IP. There should be at least one *RipInterface* provisioned below an *Interface* or below a *LogicalIf* under an *IpPort*.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Rip Import (Import)
COMPONENT Rtr Rip Export

Common Verbs: Help, List, Display, Add, DELete, LOCK, Unlock

GROUP Rtr Rip Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the RIP component

Mib: no_mib

ATTRIBUTE Rtr Rip migrateRip

Access: Read and write

Description: This attribute sets the preference level of OSPF-internal routes to be less preferred than RIP.
Note:
This parameter should only be used when starting migration of network from RIP to OSPF. When ready to cut over to OSPF, set this attribute value to ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with *migrateRip* ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.

Mib: no_mib

Values: enabled
disabled

Default: disabled

ATTRIBUTE Rtr Rip rfc1058MetricUsage (rfc1058)

Access: Read and write

Description: This attribute determines the metric usage for this RIP instance.

This flag is used to determine the way metrics are incremented.

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RFC 1058 way:
Sending Update: This is to use the metric for the route from the routing table as the advertised metric to be sent for that route. Nothing is ever added to this value from the sending side. The only special case handling is that if the route being advertised is the network route of a directly connected network, the metric in the routing table will be zero. Then the RipIf interface metric for the interface being advertised is used as the advertise metric. If the interface being advertised is not a Rip interface, then metric value of 1 is used.
Receiving Update: Add receiving interface's RIP metric to the metric for the route in the received advertisement and install the result in the receiver's routing table as the metric for that route.
Older way:
Sending Updates: Add the out going interfaces rip metric to the metric for a route in the routing table to form the metric to be advertised for that route.
Receiving Updates: The metric received in the advertisement for a route is put directly in the routing table as the metric for that route.

Note: It is recommended that, all the routers in this autonomous system should be following the rfc1058 metric system.
Setting this flag to ***disabled*** will have the effect of running the RIP with old metric incrementing system.

Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Rip generateDiscardRoute (discard)

Access	Read and write
Description	This attribute specifies whether network discard routes should be added to the routing and forwarding table for the subnetted interfaces that are running RIP.
Mib	no_mib
Values	yes no
Default	yes

ATTRIBUTE Rtr Rip redistributeIbgp (ribgp)

Access	Read and write
Description	This attribute specifies whether the export policies of this *Rip* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all.*** If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching

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routes. If *redistributeIbgp* is ***false,*** routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.

Mib no_mib

Values true
false

Default false

ATTRIBUTE Rtr Rip defaultRipRtePreference (ripPref)

Access Read and write

Description This attribute specifies this RIP component instance's default routing preference assigned to the RIP routes. A lower value indicates a more preferred route.

Mib no_mib

Values Decimal (1..254)

Default 82

GROUP Rtr Rip OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Rip adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Rip operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Rip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

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GROUP Rtr Rip AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Rip snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Rip OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Rip snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Rip Operational (Oper)

Properties	Operational

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Description	This group defines a set of operational attributes belonging to the *RIP* component. It corresponds to the rip2Globals table in the RIP-2 standard MIB.
Mib	no_mib

ATTRIBUTE Rtr Rip routeChangesMade

Access	Read only
Description	This attribute counts the route changes made to the IP Route Database by Rip. This does not include the refresh of the route's age.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Rip queryResponses

Access	Read only
Description	This attribute counts the responses sent to RIP queries from other systems.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Rip Import (Import)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Rip Import Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal>* *Rtr/<string> Rip Import/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal>* This component controls the functionality of Route Leaking. In other words, this component will determine what routes are used by RIP.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Rip Import Network (Net)
Common Verbs	Help List Display Add DELete

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GROUP Rtr Rip Import **Provisioned (Prov)**

Properties	Provisioned
Description	This is the group of provisionable attributes for the *Import* Subcomponent.
Mib	no_mib

ATTRIBUTE Rtr Rip Import **usageFlag (usage)**

Access	Read and write
Description	This flag when set to ***ignore*** indicates the routes that are not used and if set to ***use***, indicates the routes which are used.
Mib	no_mib
Values	use ignore
Default	use

ATTRIBUTE Rtr Rip Import **importMetric (metric)**

Access	Read and write
Description	This attribute is used to override the default import metric for the RIP protocol. This value is not used to select which routes to use or ignore, rather it is the metric to be used in the routing table for the routes imported for this import policy. A value of zero indicates that the metric received in the update will be used.
Mib	no_mib
Values	Decimal (0..16)
Default	0

ATTRIBUTE Rtr Rip Import **neighbor (nbr)**

Access	Read and write
Description	This attribute indicates the IP Address of the neighbor this policy will apply to.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Rip Import **interface (if)**

Access	Read and write
Description	This attribute specifies the RIP interface to which this import policy applies. The value of 0.0.0.0 implies any RIP interface on the routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the

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	interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Rip Import description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, 'to import RIP routes from MCI'.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Rip Import Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Rip Import Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Rip Import/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal> NetworkList/<Decimal>* This component identifies a set of networks that this Import policy will apply to.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Rip Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes for the *Import NetworkList* component for the Import Policy to be applied to.
Mib	no_mib

ATTRIBUTE Rtr Rip Import Net ipAddress (addr)

Access	Read and write

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Description	This attribute specifies the IP address that needs to be matched against in this network list for the Import Policy to be applied to.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Rip Import Net ipMask (mask)

Access	Read and write
Description	This attribute specifies the IP mask for the attribute *ipAddress*.
Mib	no_mib
Values	IP address
Default	No default

COMPONENT Rtr Rip Export

Instance	Decimal (0..65535)
Groups	GROUP Rtr Rip Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal>* *Rtr/<string> Rip Export/<Decimal>* *Rtr/<string> Vrf/<string> Rip Export/<Decimal>* Each instance of this component specifies a RIP export policy. A RIP export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as a RIP route on one or all RIP interfaces of the routing component (*Vr*, *Rtr* or *Vrf*). The *Rip* component by default advertises all local routes and all RIP learned routes to all RIP interfaces based on the metric in the IP forwarding table.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Rip Export Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Rtr Rip Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.

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Mib	no_mib

ATTRIBUTE Rtr Rip Export **advertiseStatus (advertise)**

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Rip Export **exportMetric (metric)**

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *exportMetric* is ignored. The *exportMetric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of 0 indicates that the exported routes will be advertised with their original metric. When exporting routes from other protocols into RIP, an *exportMetric* value of 0 will distribute these routes with the metric of the original protocol. If the metric of the original protocol exceeds 15, the exported routes will be considered as unreachable by RIP. If an *exportMetric* value of 16 is specified, the exported routes will be advertised into RIP as unreachable.
Mib	no_mib
Values	Decimal (0..16)
Default	0

ATTRIBUTE Rtr Rip Export **protocol**

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Rip* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	no_mib
Values	all egp rip

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ospfInternal
ospfExternal
staticLocal
staticRemote
bgpInternal
bgpExternal
mbgp
bgpMplsInternal

Default: all

ATTRIBUTE Rtr Rip Export ripInterface (ripIf)

Access: Read and write

Description: This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.

Mib: no_mib

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Rtr Rip Export egpAsId (egpAs)

Access: Read and write

Description: Under the *Rtr* and *Rtr Vrf*, this attribute has no effect.

Under the *Vr*, this attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from.
This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.

Mib: no_mib

Values: Decimal (0..65536)

Default: 0

ATTRIBUTE Rtr Rip Export ospfTag (tag)

Access: Read and write

Description: This attribute specifies the OSPF learned external routes to which this export policy applies, based on the learned OSPF tag of the routes.

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	This attribute can only be set to a non default value when *protocol* is set to ***ospfExternal***. The default value of 4294967295 implies any tag.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Rip Export **outInterface (outIf)**

Access	Read and write
Description	This attribute specifies the RIP interface on the virtual router which routes are exported onto as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *outInterface* is ignored. The *outInterface* value is not used to select which routes to block or send, but rather where to export the routes. A value of 0.0.0.0 indicates that the routes are exported to all RIP interfaces on the routing component (*Vr*, *Rtr* or *Vrf*). Otherwise, the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Rip Export **bgpAsId (bgpAs)**

Access	Read and write
Description	This key attribute specifies the BGP AS from which the routes are learned. This key will be used only when the *protocol* is set to ***bgpExternal***. *bgpAsId* of ***0*** matches all BGP ASs.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Rip Export **description (desc)**

Access	Read and write
Description	The attribute describes the policy. For example, ‘to export RIP routes to AS 1’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

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COMPONENT Rtr Rip Export Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Rip Export Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal> NetworkList/<Decimal> Rtr/<string> Rip Export/<Decimal> NetworkList/<Decimal> Rtr/<string> Vrf/<string> Rip Export/<Decimal> NetworkList/<Decimal>* This component identifies a set of attributes when matched determines the export policy applied.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Rip Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of Provisionable attributes for the *ExportNetworkList* component.
Mib	no_mib

ATTRIBUTE Rtr Rip Export Net ipAddress (addr)

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Rip Export Net ipMask (mask)

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	no_mib
Values	IP address
Default	No default

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COMPONENT Rtr RouteDataBaseEntry (Rdb)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] protocol (proto) [bogus local remote special ospf ospfExternal ospfType3Discard ospfType7Discard rip ripDiscard egp bgpExternal bgpInternal bgpAggrDiscard redistrib mpls mbgp bgpMplsInternal isis ebgpLabel] gateway [IP address]
Groups	GROUP Rtr Rdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip RouteDataBaseEntry/ <destAddress>,<destMask>,<protocol>* *Rtr/<string> RouteDatabaseEntry/<destAddress>,<destMask>,<protocol>* *Rtr/<string> Vrf/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* This component is used to display the information in the Ip routing database. *destAddress* and *destMask* indicates the address and mask of the route in the RoutingDatabase. *protocol* indicates the protocol this entry is learned from. *gateway* indicates the nextHop address for remote routes. The value of *gateway* for the localInterface routes will be the same value as the *destAddress*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Rdb Operational (Oper)

Properties	Operational

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Description	Identifies a group of operational attributes associated with each entry in the routing database.
Mib	no_mib

ATTRIBUTE Rtr Rdb metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the index to this entry *protocol*. If this metric is not used, its value should be set to -1.
Mib	no_mib
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Rtr Rdb preference (pref)

Access	Read only
Description	This attribute specifies the the preference value of this particular entry. The value of this attribute affects the way the routeEntries in this database are selected for installing it in the *ForwardTable*. The lower the preference value of this entry, the higher are the chances that this entry will be selected to install in the *ForwardTable*.
Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Rdb age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Static

Groups	GROUP Rtr Static OsiState (State) GROUP Rtr Static Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Static* *Rtr/<string> Static*

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Rtr/<string> Vrf/<string> Static
The *Static* component is used to configure addition, deletion and modification of static routing information.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Static RouteEntry (Route)
COMPONENT Rtr Static DiscardRouteEntry (Discard)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr Static OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr Static adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Static **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Static **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Static **Provisioned (Prov)**

Properties	Provisioned
Description	This group of attributes are used to configure the Static component.
Mib	no_mib

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ATTRIBUTE Rtr Static defaultStaticRemoteRtePreference (pref)

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the remote routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticRemoteRtePreference* attribute in *RouteEntry* will override this default.
Mib	no_mib
Values	Decimal (1..253)
Default	72

ATTRIBUTE Rtr Static defaultStaticDiscardRtePreference (discpref)

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the discard routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticDiscardRtePreference* attribute in *DiscardRouteEntry* will override this default.
Mib	no_mib
Values	Decimal (0..253)
Default	0

ATTRIBUTE Rtr Static maxEcmpNextHops

Access	Read and write
Description	This attribute specifies the maximum number of Equal Cost Multi-Path (ECMP) *NextHop*s that are supported for *Static RouteEntry*s. If *maxEcmpNextHops* is ***1*** then only a single available *NextHop* is used, even if multiple *NextHops* are provisioned with the same *metric* value under a given *Static RouteEntry*. In other words ECMP is disabled for static routes. If *maxEcmpNextHops* is ***3*** the traffic will be loadshared over the available *NextHops* that have the same value set for the *metric* attribute under a given *Static RouteEntry*. When *protected Static RouteEntry*s are provisioned, *maxEcmpNextHops* must be ***1***.
Mib	no_mib
Values	1 3
Default	3

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ATTRIBUTE Rtr Static heartbeatDeadInterval (hbDeadInt)

Access	Read and write
Description	This attribute specifies the L3 *Static* heartbeat dead router interval for the *NextHop* Routers of *Static Route*s which have *heartbeat* ***enabled***. If no heartbeat polling responses have been received in the last *heartbeatDeadInterval* seconds, then the *heartbeatState* of this *NextHop* is ***down***. If *heartbeatDeadInterval* is ***disabled***, L3 heartbeat monitoring will not occur for any *Static Route NextHop*s and the *heartbeatState* of all *NextHop*s will be ***disabled***.
Mib	no_mib
Values	Decimal (4..60) disabled
Default	disabled

COMPONENT Rtr Static RouteEntry (Route)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..0)]
Groups	GROUP Rtr Static Route Provisioned (Prov) GROUP Rtr Static Route Operational (Oper) GROUP Rtr Static Route OsiState (State)
Scope	Application
Description	*Vr/<string> Ip Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal> *Rtr/<string> Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal> *Rtr/<string> Vrf/<string> Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal> This component describes the IP static routes. For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry*. The value of index *destMask* should be contiguous.

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	Only the value zero is supported. Zero will be substituted for any value that is entered.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Static Route NextHop (Nh)
Common Verbs	Help List Display Add DELete

GROUP Rtr Static Route **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains a provisionable set of attributes for the static route entry component.
Mib	no_mib

ATTRIBUTE Rtr Static Route **staticRemoteRtePreference (pref)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the route preference of the static remote route. A lower preference value means the route is more preferred. If ***sameAsStatic*** is specified, the value of *defaultStaticRemoteRtePreference* in the *Static* component is used.
Mib	no_mib
Values	Decimal (1..253) sameAsStatic
Default	sameAsStatic

ATTRIBUTE Rtr Static Route **protected**

Access	Read and write
Description	This attribute specifies whether this route is protected or not. Note that *Vr Ip Static maxEcmpNextHops* must be ***1*** and *Vr Ip Ospf ecmpStatus* must be ***disabled*** when there is a *protected* static route under the *Vr*.
Mib	no_mib
Values	yes no
Default	no

ATTRIBUTE Rtr Static Route **protectedFailureBehavior (protFlrB)**

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Access	Read and write
Description	This attribute specifies the behavior when all *NextHops* of a *protected* static route fail. If ***discard*** is specified, the static route will not be removed, it will continue to be used to discard traffic.
Mib	no_mib
Values	discard
Default	discard

ATTRIBUTE Rtr Static Route heartbeat

Access	Read and write
Description	This attribute specifies whether or not *heartbeat* is ***enabled*** for this route. In order for this attribute to have any effect, heartbeat must first be permitted at the *Static* component level by configuring the *heartbeatDeadInterval* to a value different than ***disabled***. If ***enabled*** is specified for *heartbeat*, an IP heartbeat is maintained for each of the *NextHops*. ICMP echo requests are sent every 1second and if an ICMP echo resply is received, the *heartbeatState* of the *NextHop* is declared ***up***. If at any point no ICMP response has been received for *heartbeatDeadInterval* seconds, the *heartbeatState* of the *NextHop* will be ***down***. If ***disabled*** is specified, the *heartbeatState* of each *NextHop* under this *Static Route* will be ***disabled***.
Mib	no_mib
Values	enabled disabled
Default	disabled

GROUP Rtr Static Route Operational (Oper)

Properties	Operational
Description	This group contains a set of operational attributes for the static route entry component.
Mib	no_mib

ATTRIBUTE Rtr Static Route protectionLevel (protL)

Access	Read only
Description	This attribute indicates the current protection level for a *Static RouteEntry*. A value of ***portProtected*** indicates that the only alternative enabled *NextHop*(s) for this protected route are on the same card as the active *NextHop*. When the value is ***cardProtected***, one or more alternative enabled ***NextHop***s exist on a different card than the active ***NextHop***. If the value is ***unprotected***, no alternative enabled *NextHop*s exist or this is an

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unprotected static route (that is, *protected* = ***no*** for this *Static RouteEntry*).

Mib	no_mib
Values	portProtected cardProtected unprotected notApplicable
Default	No default

GROUP Rtr Static Route **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Static Route **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Static Route **operationalState (osiOper)**

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Static Route **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

COMPONENT Rtr Static Route **NextHop (Nh)**

Instance	IP address
Groups	GROUP Rtr Static Route Nh Provisioned (Prov) GROUP Rtr Static Route Nh OsiState (State) GROUP Rtr Static Route Nh Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* *Rtr/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* *Rtr/<string> Vrf/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>*

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This component provides the destination Ip address of the *NextHop* (some times referred to as the Gateway).

For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry*.

Each provisioned *NextHop* address should belong to a valid subnet. A valid subnet for this IP entity can be provisioned as a *logicalIf* Entry under an *IpPort.*

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Static Route Nh Provisioned (Prov)

Properties: Provisioned

Description: This group contains a provisionable set of attributes for the *Static RouteEntry NextHop* component.

Mib: no_mib

ATTRIBUTE Rtr Static Route Nh metric (metric)

Access: Read and write

Description: This attribute specifies the primary routing metric for this *NextHop*.

Mib: no_mib

Values: Signed (-1..65535)

Default: 1

GROUP Rtr Static Route Nh OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr Static Route Nh adminState (osiAdmin)

Access: Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE **Rtr Static Route Nh** **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE **Rtr Static Route Nh** **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

GROUP Rtr Static Route Nh **Operational (Oper)**

Properties: Operational

Description:

Mib: no_mib

ATTRIBUTE Rtr Static Route Nh **heartbeatState (hbS)**

Access: Read only

Description: This attribute indicates the state of the heartbeat mechanism with this *NextHop*'s next hop Router.
The value will be ***disabled*** if the *heartbeatDeadInterval* is disabled for all *Static Route*s that share this *NextHop*.
The value may be ***undetermined*** briefly upon initialization, before the heartbeat mechanism has completed an assessment.
The value will be ***down*** if the *NextHop* Router has not responded to ICMP heartbeat requests nor ARP heartbeat requests.
The value will be ***up*** if the *NextHop* Router has responded to ICMP heartbeat requests.

Mib: no_mib

Values:
undetermined
disabled
down
up

Default: No default

COMPONENT Rtr Static **DiscardRouteEntry (Discard)**

Instance:
destAddress (addr) [IP address]
destMask [IP address]

Scope: Application

Description: *Vr/<string> Ip Static DiscardRouteEntry/<Ip Address>,<Ip Address> Router/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address> Router/<string> Vrf/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>*

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This table identifies invalid martian networks. Forwarding of packets to the network address indicated by this entry will be discarded.

Mib	no_mib
Common Verbs	Help List Display Add DELete

COMPONENT Rtr Udp

Groups	GROUP Rtr Udp Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip Udp* *Rtr/<string> Udp* *Rtr/<string> Vrf/<string> Udp* *Udp* component controls all UDP related attributes supported by this router.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Udp ListenEntry
Common Verbs	Help List Display

GROUP Rtr Udp Statistics (Stats)

Properties	Operational
Description	This group holds statictics for UDP.
Mib	no_mib

ATTRIBUTE Rtr Udp inDatagrams

Access	Read only
Description	The number of UDP datagrams delivered to UDP users. *inDatagrams* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Udp noPorts

Access	Read only

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Description	The number of UDP datagrams received for which there was no application at the destination port. *noPorts* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Udp inErrors

Access	Read only
Description	The number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. *inErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Udp outDatagrams

Access	Read only
Description	The number of UDP datagrams sent from this gateway. *outDatagrams* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Udp ListenEntry

Instance	localAddress [IP address] localPort [Decimal (0..65535)]
Scope	Application
Description	The table contains UDP listener information.
Mib	no_mib
Common Verbs	Help List Display LOCK Unlock

COMPONENT Rtr Tcp

Groups	GROUP Rtr Tcp Statistics (Stats)

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Scope	Application
Description	The *Tcp* component contains all attributes related to TCP.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Tcp TcpEntry (TcpEntry)
Common Verbs	Help List Display

GROUP Rtr Tcp Statistics (Stats)

Properties	Operational
Description	This group contains statistics for TCP.
Mib	no_mib

ATTRIBUTE Rtr Tcp rToAlgorithm

Access	Read only
Description	Indicate which algorithm was used to calculate the timeout value used for retransmitting unackowledged octet.
Mib	no_mib
Values	other constant rsre vanJacobson
Default	No default

ATTRIBUTE Rtr Tcp rToMin

Access	Read only
Description	Indicate the minimum value, measured in milliseconds, allowed for retransmission timeout.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE Rtr Tcp rToMax

Access	Read only
Description	Indicates the maximun value, measured in milliseconds, allowed for retransmission timeout.

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Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Rtr Tcp maxConn

Access	Read only
Description	Limit on number of connections the TCP can support. The value is always -1 which indicates that the number of connections supported is dynamic (limited by memory in the system).
Mib	no_mib
Values	Signed (-1)
Default	-1

ATTRIBUTE Rtr Tcp activeOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synSent*** state from the ***closed*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp passiveOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synRcvd*** state from the ***listen*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp attemptFails

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***synSent*** state or the ***synRcvd*** state, plus the number of times TCP connections have made a direct transition to the ***listen*** state from the ***synRcvd*** state.
Mib	no_mib

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp estabResets

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***established*** state or the ***closedWait*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp currEstab

Access	Read only
Description	The number of TCP connections for which the current state is either ***established*** or ***closedWait***.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp inSegs

Access	Read only
Description	The number of segments received, including those received in error. This count includes segments received on currently established connections.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp outSegs

Access	Read only
Description	The number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp retransSegs

Access	Read only

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Description	The number of segments retransmitted that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp inErrs

Access	Read only
Description	Total number of segments received in error, for example bad TCP checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp outRsts

Access	Read only
Description	Number of TCP segments sent containing the RST flag.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Tcp TcpEntry (TcpEntry)

Instance	localAddress [IP address] localPort [Decimal (0..65535)] remoteAddress [IP address] remotePort [Decimal (0..65535)]
Groups	GROUP Rtr Tcp TcpEntry Operational (Oper)
Scope	Application
Description	The component defines an entry in the TCP connection table. Each entry corresponds to TCP end-point identified by 4-tuples, *LocalAddress*, *LocalPort*, *RemoteAddress*, and *RemotePort*.
Mib	no_mib
Common Verbs	Help List Display

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GROUP Rtr Tcp TcpEntry **Operational (Oper)**

Properties	Operational
Description	This group contains columnar entries for each end-point on the TCP.
Mib	no_mib

ATTRIBUTE Rtr Tcp TcpEntry **state**

Access	Read and write
Description	This attribute reflects the current state of this Tcp connection.
Mib	no_mib
Values	closed listen synSent synReceived established closeWait finWait1 closing lastAck finWait2 timeWait delete
Default	No default

COMPONENT Rtr **VpnRouteForwarder (Vrf)**

Instance	String (1..16, ASCII)
Groups	GROUP Rtr Vrf Provisioned GROUP Rtr Vrf CustomerIdentifierData (CidData) GROUP Rtr Vrf OperationalStatus (OperStatus) GROUP Rtr Vrf OsiState (State) GROUP Rtr Vrf IfNumberOper GROUP Rtr Vrf Statistics (Stats) GROUP Rtr Vrf VrfProvisioned GROUP Rtr Vrf VpnIdentifier GROUP Rtr Vrf VrfOperational (VrfOper)
Scope	Application
Description	Rtr/<string> VpnRouteForwarder/<string> The *VpnRouteForwarder (Vrf)* component represents an instance of a Routing Component on the platform. The *VpnRouteForwarder* component acts as an Edge Router connecting to a customer edge router providing the customer site with a VPN connection.

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At any time, the number of Routing Components (*Router*, *VpnRouteForwarder* and *VirtualRouter*) existing in the current view plus the number of newly created Routing Components in the edit view must be less than the maximum allowed number of virtual routers. This is regardless of how many *VirtualRouter*, *VpnRouteForwarder* or *Router* components may have been deleted in the edit view. Any Routing Component which, when created in the edit view, results in a total count greater than the maximum allowed, is labelled as invalid and must be deleted.

It is recommended that the deletion of any *VirtualRouter*, *VpnRouteForwarder*, or *Router* components existing in the current view should be activated using the *Activate Prov* command before creating any new *VirtualRouter*, *VpnRouteForwarder*, or *Router* components.

Mib: no_mib

Subcomponents:
COMPONENT Rtr Vrf Arp
COMPONENT Rtr Vrf Icmp
COMPONENT Rtr Vrf RelayBC
COMPONENT Rtr Vrf Udp
COMPONENT Rtr Vrf Tcp
COMPONENT Rtr Vrf MemoryManagement (Mm)

Opt. Subcomp.:
COMPONENT Rtr Vrf BootpRelayAgent (Bootp)
COMPONENT Rtr Vrf BorderGatewayProtocol (Bgp)
COMPONENT Rtr Vrf RouteDistinguisher (Rd)
COMPONENT Rtr Vrf RouteTarget (Rt)
COMPONENT Rtr Vrf ExportPolicy (Export)
COMPONENT Rtr Vrf Ospf (Ospf)
COMPONENT Rtr Vrf PolicerProfile (Policer)
COMPONENT Rtr Vrf DiffServProfile (DiffServProf)
COMPONENT Rtr Vrf RoutingInformationProtocol (Rip)
COMPONENT Rtr Vrf Static
COMPONENT Rtr Vrf Interface (If)
COMPONENT Rtr Vrf ControlPlaneProtection (Cpp)
COMPONENT Rtr Vrf DifferentiatedServicesDomain (Dsd)

Dyn. Subcomp.:
COMPONENT Rtr Vrf Cache
COMPONENT Rtr Vrf ServiceLabelUsage (Slu)
COMPONENT Rtr Vrf ForwardTable (Fwd)
COMPONENT Rtr Vrf RouteDataBaseEntry (Rdb)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

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VERB TELNET Rtr Vrf

Impact	Passive
Description	*Telnet -ipAddress(<IP address>) Rtr/<string> Vrf/<string>* This command allows access to the Telnet client, attempting to set up a connection from this node to the specified IP address within the specified Vrf address space. Options: *ipAddress* - This mandatory option specifies the IP address of the remote node to which the user wants to Telnet within this VR's address space.

GROUP Rtr Vrf **Provisioned**

Properties	Provisioned
Description	This group contains the router attributes common to the *Router* and *Router VpnRouteForwarder* components.
Mib	no_mib

ATTRIBUTE Rtr Vrf **sourceRoute**

Access	Read and write
Description	This attribute specifies whether or not this *Router* or *VpnRouteForwarder* allows processing of datagrams which have a source route IP option.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf **cacheTableSize (cts)**

Access	Read and write
Description	This attribute specifies the maximum number of entries that can exist in the local cache table on each *Lp* for this *Router* or *VpnRouteForwarder*. This attribute provides a way to control the resources allocated to the IP cache tables. The default cache table size is *300* for an FP and *100* for a CP. The attribute value must be a multiple of 100.
Mib	no_mib
Vector of	Decimal (100..8000)
Index	Decimal (0..15)
Default	([1] 100, [15] 300)

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GROUP Rtr Vrf CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr Vrf customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr Vrf OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

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Values	up down testing
Default	up

GROUP Rtr Vrf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf IfNumberOper

Properties	Operational
Description	This group contains the ifNumber attribute.
Mib	no_mib

ATTRIBUTE Rtr Vrf ifNumber (ifN)

Access	Read only
Description	This attribute defines the number of *IfEntries* in the *IfTable*.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

GROUP Rtr Vrf Statistics (Stats)

Properties	Operational

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Description	This is the GROUP holding the struct which contains statistical attributes for IP.
Mib	no_mib

ATTRIBUTE Rtr Vrf inReceives

Access	Read only
Description	This is the number of input datagrams received from the interfaces, including those received in error. *inReceives* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inHdrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discovered in processing their IP options, etc. *inHdrErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inAddrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors such as invalid address, unsupported address class. *inAddrErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf forwDatagrams

Access	Read only
Description	The number of input datagrams for which this router was not their final IP destination, as a result of which an attempt was made to find a route to forward them to that final destination. *forwDatagrams* wraps to zero if reaches it's maximum defined value.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inUnknownProtos

Access	Read only
Description	The number of locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol *inUnknownProtos* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inDiscards

Access	Read only
Description	The number of input datagrams for which no problems were encountered to prevent their continued processing, but which were discarded due to the lack of buffers. This does not include any datagram discarded while awaiting for re-assembly. *inDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inDelivers

Access	Read only
Description	The number of input datagrams successfully delivered to IP user-protocols (including ICMP). *inDelivers* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf outRequests

Access	Read only
Description	The number of datagrams which local IP user-protocols (including ICMP) supplied to IP in requests for transmission. This sum does not include datagrams counted in *ForwDatagrams*. *outRequests* wraps to zero if reaches its maximum defined value.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf outDiscards

Access	Read only
Description	The number of outbound datagrams that were discarded due to the lack of buffers. This sum also includes datagrams counted in *forwDatagrams* if any such packets met the discard criterion. *outDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf outNoRoutes

Access	Read only
Description	The number of outbound datagrams discarded because no route could be found to transmit them to their destination. This counter includes any datagrams counted in *forwDatagrams*. *outNoRoutes* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf reasmTimeOut

Access	Read only
Description	The maximum number of seconds, which received fragments are held while they are awaiting reassembly at this gateway.
Mib	no_mib
Values	Decimal (0..5)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf reasmReqds

Access	Read only
Description	The number of the IP fragments received by this gateway which needed to be reassembled. *reasmReqds* wraps to zero if reaches its maximum defined value.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf reasmOks

Access	Read only
Description	The number of IP fragments successfully reassembled by this gateway. *reasmOks* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf reasmFails

Access	Read only
Description	The number of times this gateway is unabled to assemble IP-fragments for whatever reasons. *reasmFails* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf fragOks

Access	Read only
Description	The number of IP datagrams that have been successfully fragmented by this gateway. *fragOks* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf fragFails

Access	Read only
Description	The number of IP-fragments that have been discarded because they needed to be fragmented but could not be. For example, their Don't Fragment flag was set. *fragFails* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Rtr Vrf fragCreates

Access	Read only
Description	This number of IP fragments that have been generated as a result of fragmentation by this gateway. *fragCreates* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf routingDiscards

Access	Read only
Description	The number of routing entries which were chosen to be discarded even though they are valid. One possible reason for discarding such an entry could be to free -up buffer space for other routing entries. In this implementation, this number is always zero because IP never deletes a valid routing entry.
Mib	no_mib
Values	Decimal (0..0)
Default	0

ATTRIBUTE Rtr Vrf inSrcRouteDiscards

Access	Read only
Description	The number of input datagrams which had a source route IP option and were discarded because this functionality is not allowed for this Routing Component. *srcRouteDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr Vrf VrfProvisioned

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Router Vrf* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf snmpAdminStatus

Access	Read and write

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Description	This attribute specifies the desired SNMP state of the VRF. The ***up*** state indicates that the VRF is operational and packet forwarding is allowed. The ***down*** state indicates that the VRF is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf mode

Access	Read and write
Criticality	Process
Description	This attribute specifies the mode of operation of the *VRF* component. A value of ***rfc2547*** specifies that the *VRF* is provisioned as an access node for the BGP/MPLS VPN network. A value of ***ipRouter*** specifies that the *VRF* is used for direct IP connectivity.
Mib	no_mib
Values	rfc2547 ipRouter
Default	rfc2547

ATTRIBUTE Rtr Vrf importRoutesAlarmLimit (importal)

Access	Read and write
Description	This attribute specifies the alarm threshold of number of 2547 VPN routes to be imported to this *Vrf*'s routing table from the *Router* component. When the number of routes imported to this *Vrf* reaches this limit, an alarm is generated and *Vrf* will continue importing routes. The current number of imported routes is available in the *routeImports* operational attribute of this *Vrf*. This attribute does not apply if the *mode* attribute of this *Vrf* is set to ***ipRouter***. The value of the *importRoutesAlarmLimit* attribute must be less than the value of the *importRoutesDiscardLimit* attribute.
Mib	no_mib
Values	Decimal (1..65535)
Default	2400

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ATTRIBUTE Rtr Vrf importRoutesDiscardLimit (importdl)

Access	Read and write
Description	This attribute specifies the maximum number of 2547 VPN routes to be imported to this *Vrf*'s routing table from the *Router* component. When the number of routes imported to this *Vrf* reaches this limit, an alarm is generated and *Vrf* will stop importing routes. The current number of imported routes is available in the *routeImports* operational attribute of this *Vrf*. This attribute does not apply if the *mode* attribute of this *Vrf* is set to ***ipRouter***. The value of the *importRoutesDiscardLimit* attribute must be greater than the value of the *importRoutesAlarmLimit* attribute.
Mib	no_mib
Values	Decimal (1..65535)
Default	3000

ATTRIBUTE Rtr Vrf exportRoutesAlarmLimit (exportal)

Access	Read and write
Description	This attribute specifies the alarm threshold of number of routes to be exported from this *Vrf*'s routing table to the 2547 VPN routing database of the *Router* component. When the number of routes exported from this *Vrf* reaches this limit, an alarm is generated and *Vrf* will continue exporting routes. The current number of exported routes is available in the *routeExports* operational attribute of this *Vrf*. This attribute does not apply if the *mode* attribute of this *Vrf* is set to ***ipRouter***. The value of the *exportRoutesAlarmLimit* attribute must be less than the value of the *exportRoutesDiscardLimit* attribute.
Mib	no_mib
Values	Decimal (1..65535)
Default	400

ATTRIBUTE Rtr Vrf exportRoutesDiscardLimit (exportdl)

Access	Read and write
Description	This attribute specifies the maximum number of routes to be exported from this *Vrf*'s routing table to the 2547 VPN routing database of the *Router* component. When the number of routes exported from this *Vrf* reaches this limit, an alarm is generated and *Vrf* will stop exporting routes. The current number of exported routes is available in the *routeExports* operational attribute of this *Vrf*. This attribute does not apply if the *mode* attribute of this *Vrf* is set to ***ipRouter***. The value of the *exportRoutesDiscardLimit* attribute must be greater than the value of the *exportRoutesAlarmLimit* attribute.
Mib	no_mib

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Values	Decimal (1..65535)
Default	500

ATTRIBUTE Rtr Vrf defaultLocalBgpMplsIRtePref (localPref)

Access	Read and write
Description	This attribute specifies the default bgpMplsInternal route preference for routes learned from *Vrfs* on the local PE node. A lower value indicates a greater preference.
Mib	no_mib
Values	Decimal (1..253)
Default	125

ATTRIBUTE Rtr Vrf defaultRemoteBgpMplsIRtePref (remotePref)

Access	Read and write
Description	This attribute specifies the default bgpMplsInternal route preference for routes learned from *Vrf*s on the remote PE node. A lower value indicates a greater preference.
Mib	no_mib
Values	Decimal (1..253)
Default	127

GROUP Rtr Vrf VpnIdentifier

Properties	Provisioned
Description	This group contains provisioned attributes to specify the Virtual Private Network (VPN) associated with this *Vrf* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf vpnId

Access	Read and write
Description	This attribute specifies the Virtual Private Network (VPN) associated with this *Vrf* component. This is a globally unique identifier composed of a three-octet long Organizationally Unique Identifier (OUI) followed by a four-octet long VPN index. It can be used by MDM to identify configured VPNs in the network. Provisioning the same VPN ID on a set of VRFs indicates that they belong to the same VPN. This attribute does not affect the distribution of routing information in the

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	VPN. The value "***00-00-00-00-00-00-00-00***" identifies an unspecified VPN ID.
Mib	no_mib
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Rtr Vrf vpnName

Access	Read and write
Description	This attribute specifies an identifier for grouping *Vrf* into VPNs. It can be used by MDM to identify configured VPNs in the network. Provisioning the same *vpnName* on a set of *Vrf* indicates that they belong to the same VPN. This attribute does not affect the distribution of routing information in the VPN. If no value is provisioned, it implies that no *vpnName* has been specified.
Mib	no_mib
Values	String (0..255, ASCII)
Default	" "

GROUP Rtr Vrf VrfOperational (VrfOper)

Properties	Operational
Description	This group contains the operational attributes of the *Vrf* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf routeImports

Access	Read only
Description	This attribute indicates the current number of routes imported to this *Vrf* from *Router* BgpMpls database. The maximum value of this attribute is provisioned in attribute *importRoutesDiscardLimit*.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rtr Vrf routeExports

Access	Read only
Description	This attribute indicates the current number of routes exported from this *Vrf* to Router BgpMpls database.

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The maximum value of this attribute is provisioned in attribute *exportRoutesDiscardLimit*.

Mib: no_mib

Values: Decimal (1..65535)

Default: No default

COMPONENT Rtr Vrf Arp

Groups: GROUP Rtr Vrf Arp Provisioned (Prov)

Scope: Application

Description:
Vr/<string> Ip Arp
Rtr/<string> Arp
Rtr/<string> Vrf/<string> Arp
The component specifies the Address Resolution Protocol.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Vrf Arp HostEntry (Host)

Dyn. Subcomp.: COMPONENT Rtr Vrf Arp DynHostEntry (DynHost)

Common Verbs:
Help
List
Display

VERB Clear Rtr Vrf Arp

Impact: Passive

Description:
Clear [-logicalIf(Ip Address)] [-includeInverse] Vr/<string> Ip Arp
Clear [-logicalIf(Ip Address)] [-includeInverse] Rtr/<string> Arp

The *Clear* verb is intended for manually flushing dynamically learned ARP entries. Without any options, *Clear* will flush all non-inverse dynamic ARP entries. The *Clear* verb does not affect static ARP host entries, that is, entries which correspond to *HostEntry* subcomponents of this component. These entries can be removed by deleting the corresponding provisioned *HostEntry* component.

The *-logicalIf* or *-interface* option is used to flush dynamic ARP entries which were learned on a particular *IpPort LogicalInterface* or *Interface*. The option must specify the IP address of an existing *IpPort LogicalInterface* (which may be under any *ProtocolPort) or Interface*.

The *-includeInverse* option is used to force the deletion of inverse ARP entries. Inverse ARP entries which are learned through inverse ARP (*FrDte*) and inverse ATM ARP (*AtmMpe*) are important and should not be cleared by the users accidentally. If the option is not present, inverse ARP entries are not cleared.

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GROUP Rtr Vrf Arp Provisioned (Prov)

Properties	Provisioned
Description	The ARP refresh feature allows the router to periodically verify ARP table entries. Whenever the router updates an ARP entry, or creates a new entry, a timeout value is assigned to the entry. When the timeout for an entry expires, the router will send a unicast ARP request to the currently-known physical address. If an ARP response comes back, the entry will be assigned a new timeout. If, however, the host has gone away or been assigned a new physical address, the host will not respond to the unicast ARP, and the entry will be removed from the ARP table. The new physical address will be discovered through the normal ARP mechanism when the next communication is attempted to the host.
Mib	no_mib

ATTRIBUTE Rtr Vrf Arp autoRefresh

Access	Read and write
Description	This attribute is used to enable or disable the ARP refresh feature.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Arp autoRefreshTimeout

Access	Read and write
Description	This attribute defines the timeout value, in minutes, which is assigned to updated ARP entries, or newly created ARP entries. The range for the timeout is 1 minute to 1440 minutes (24 hours).
Mib	no_mib
Values	Decimal (1..1440)
Units	minutes
Default	5

ATTRIBUTE Rtr Vrf Arp retryTimes

Access	Read and write
Description	This attribute defines the number of times that an ARP request will be sent to a remote host if there is no reply received. This value is assigned when ARP entries are updated or created. The range of the value can be from 0 to 127.
Mib	no_mib
Values	Decimal (0..127)

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Units	times
Default	127

COMPONENT Rtr Vrf Arp DynHostEntry (DynHost)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	GROUP Rtr Vrf Arp DynHost Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Router/<string> Arp DynHostEntry/<Ip Address>* *Router/<string> Vrf/<string> DynHostEntry/<Ip Address>* This component is a table that contains all Arp host entries (both static and dynamic). Each IP ARP entry in the table is uniquely defined by its IP address and connection class (cos) value. For *Vr*, when associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap,*** and ***atmMpeVcEncap***, the connection class value of the arp entry is ***0, 1, 2,*** or ***3*** . For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis). For *Router* or *Vrf*, when the media associated with the interface is *atmMpe* or *IpoDlci*, the connection class value of the arp entry is ***0, 1, 2,*** or ***3***. For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis). An IP packet that has been assigned a particular connection class value will be forwarded using the arp entry which corresponds to the next hop gateway IP address and matching connection class value where the next hop gateway IP address is determined via a forwarding table look up on the packet's destination IP address. When there are arp entries that match the next hop gateway IP address, but not the packet's connection class, then the packet will be forwarded using the arp entry that has the next lowest connection class value; failing this, the packet will be forwarded using the arp entry that has the next highest connection class value.
Mib	no_mib
Common Verbs	Help List Display

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VERB Clear Rtr Vrf Arp DynHost

Impact	Passive
Description	*Clear [-inverse] Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Vrf/<string> Arp DynHostEntry/<Ip Address>* The *Clear* verb is used to delete the single dynamically learned ARP entry that is represented by this component. The *Clear* command does not affect static ARP host entries, that is, entries whose *type* attribute has the value ***static***. These entries can be removed by deleting the corresponding provisioned *HostEntry* component under *Arp*. The *-inverse* option deletes the ARP entry even if it was an inverse ARP entry. Inverse ARP entries are learned through inverse ARP (*FrDte* or *IpoDlci*) and inverse ATM ARP (*AtmMpe*), and should not be removed by the users accidentally. If the option is not present, an inverse ARP entry is not cleared.

GROUP Rtr Vrf Arp DynHost **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *DynHostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Arp DynHost **physAddress**

Access	Read only
Description	This attribute indicates the physical address of the host in canonical form.
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost **maxTxUnit (mtu)**

Access	Read only
Description	This attribute indicates the maximum MTU size that can be accepted by the host.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	0

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ATTRIBUTE Rtr Vrf Arp DynHost **encapsulationType (encap)**

Access	Read only
Description	This attribute indicates the encapsulation type of the host.
Mib	no_mib
Values	ieee8023 ethernet notApplicable
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost **permanentVirtualCircuitNumber (pvcNo)**

Access	Read only
Description	This attribute indicates the permanent virtual circuit number to the remote host.
Mib	no_mib
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost **ifIndex**

Access	Read only
Description	This attribute indicates the *ifIndex* of the protocol port that is associated with this entry.
Mib	no_mib
Values	Decimal (1..65535)
Default	1

ATTRIBUTE Rtr Vrf Arp DynHost **type**

Access	Read only
Description	This attribute indicates how this entry was learned.
Mib	no_mib
Values	pending invalid dynamic static
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost **ncPhysAddress**

Access	Read only

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Description	This attribute indicates the physical address of the host in non-canonical form. This attribute is not displayed for hosts on non-LAN media.
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost **tunnelDestinationAddress (tda)**

Access	Read only
Description	This attribute indicates the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	no_mib
Values	IP address
Default	0.0.0.0

COMPONENT Rtr Vrf Arp **HostEntry (Host)**

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	GROUP Rtr Vrf Arp Host Provisioned (Prov) GROUP Rtr Vrf Arp Host Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Arp HostEntry/<Ip Address>,<cos>* *Rtr/<string> Arp HostEntry/<Ip Address>,<cos>* *Rtr/<string> Vrf/<string> Arp HostEntry/<Ip Address>,<cos>* This component defines a static host entry in the ARP table. For *Vr*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLIcEncap***, or ***atmMpeVcEncap***. For other media types, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis). For *Router* and *Vrf*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the media associated with the interface is *AtmMpe* or *IpoDlci*. For

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other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Arp Host **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *HostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Arp Host **physAddress**

Access	Read and write
Description	This attribute identifies the physical address of the host being defined. The value for this attribute should only be specified for media types supporting physical addresses (e.g. ethernet, fddi, tokenRing etc.)
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Rtr Vrf Arp Host **maxTxUnit (mtu)**

Access	Read and write
Description	Specify the maximum transmit unit (MTU) size that can be accepted by the host. If this value is not specified, the value for the media interface is used. The specified MTU must be less than or equal to the interface's MTU size.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Rtr Vrf Arp Host **permanentVirtualCircuitNumber (pvcNo)**

Access	Read and write
Description	This attribute specifies the number of the PVC for the static host entry. It is the instance number of the X.25 media, Frame Relay media, and of the *AtmConnection* component on the ATM MPE interface..
Mib	no_mib

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Values	Decimal (0..4095)
Default	0

ATTRIBUTE Rtr Vrf Arp Host tunnelDestinationAddress (tda)

Access	Read and write
Description	This attribute specifies the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Arp Host encap

Access	Read and write
Description	This attribute specifies the encapsulation type for the host. The value for this attribute should only be specified for the hosts on the ethernet media. If a value of ***auto*** is specified, the application based on the media will determine the proper applicable encapsulation type.
Mib	no_mib
Values	ieee8023 ethernet auto
Default	auto

GROUP Rtr Vrf Arp Host Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *HostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Arp Host operMaxTxUnit (operMtu)

Access	Read only
Description	This attribute indicates the operational value of the maximum transmission unit.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	No default

ATTRIBUTE Rtr Vrf Arp Host operEncap

Access	Read only

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Description	This attribute indicates the operational encapsulation type. if the value of the attribute *encap* is set to ***auto***, then the application will determine the encapsulation type based on the media being used and assigns the appropriate value.
Mib	no_mib
Values	ieee8023 ethernet notApplicable
Default	No default

COMPONENT Rtr Vrf BootpRelayAgent (Bootp)

Groups	GROUP Rtr Vrf Bootp AdministrativeControl (AdminControl) GROUP Rtr Vrf Bootp Provisioned (Prov) GROUP Rtr Vrf Bootp OsiState (State) GROUP Rtr Vrf Bootp OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent* *Rtr/<string> BootpRelayAgent* *Rtr/<string> Vrf<string> BootpRelayAgent* The *BootpRelayAgent* component contains all the necessary attributes and components to provision a BOOTP relay agent. The BOOTP relay agent functionality conforms to that described in RFCs 951 and 1542. The purpose of the BOOTP relay agent is to forward BOOTP request packets from a client to a server, and also to deliver server BOOTP replies back to the client. When a BOOTP request is received on a port, the request will be sent to a provisioned list of IP addresses for that port. In addition, the request will be broadcast out all other BOOTP ports which allow it.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Vrf Bootp BootpPortEntry (PpE)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Bootp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.

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Mib	no_mib

ATTRIBUTE Rtr Vrf Bootp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf Bootp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *BootpRelayAgent* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bootp hopDiscardThreshold (hops)

Access	Read and write
Description	BOOTP packets contain a ‘hops’ field which is used to limit the number of relay agents that can process the packet (each relay agent increments the ‘hops’ field by one). This attribute is used by the relay agent to determine when to discard a BOOTP packet. If the ‘hops’ field exceeds the *hopDiscardThreshold* the BOOTP packet will be discarded.
Mib	no_mib
Values	Decimal (2..16)
Default	4

GROUP Rtr Vrf Bootp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bootp adminState (osiAdmin)

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Bootp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Bootp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

GROUP Rtr Vrf Bootp OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Bootp snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

COMPONENT Rtr Vrf Bootp BootpPortEntry (PpE)

Instance: String (1..20, ASCII)

Groups:
GROUP Rtr Vrf Bootp PpE Operational (Oper)
GROUP Rtr Vrf Bootp PpE Statistics (Stats)

Scope: Application

Description: *Vr/<string> Ip BootpRelayAgent BootpPortEntry/<string>*
Rtr/<string> BootpRelayAgent BootpPortEntry/<string>
Rtr/<string> Vrf/<string> BootpRelayAgent BootpPortEntry/<string>
The *BootpPortEntry* component contains information about the provisioned *BootpPort*. This component is indexed by a string which

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represents a *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface* component name.

Mib no_mib

Common Verbs
Help
List
Display

GROUP Rtr Vrf Bootp PpE Operational (Oper)

Properties Operational

Description This group contains *BootpPortEntry* component operational data.

Mib no_mib

ATTRIBUTE Rtr Vrf Bootp PpE status

Access Read only

Description This attribute indicates the status of the provisioned *BootpPortEntry* component. A value of ***disabled*** is used when the parent components is in a disabled state. A value of ***up*** is used when the *BootpPortEntry* is in an operational state. A state of ***down*** is used if the media associated with the *BootpPortEntry* is not ready or disabled.

Mib no_mib

Values
up
down
disabled

Default No default

GROUP Rtr Vrf Bootp PpE Statistics (Stats)

Properties Operational

Description This group contains *BootpPortEntry* component statistics.

Mib no_mib

ATTRIBUTE Rtr Vrf Bootp PpE inRequests

Access Read only

Description This attribute counts the total number of BOOTP Request messages received on this port.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Rtr Vrf Bootp PpE inReplies

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Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf Cache

Instance	Decimal (0..15)
Groups	GROUP Rtr Vrf Cache OsiState (State) GROUP Rtr Vrf Cache Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Cache/n* *Rtr/<string> Cache/n* *Rtr/<string> Vrf/<string> Cache/n* This component represents the IP cache table on LP *n*.
Mib	no_mib
Common Verbs	Help List Display

VERB Clear Rtr Vrf Cache

Impact	Service
Description	*Clear Vr/<string> Ip Cache/n* *Clear Router/<string> Cache/n* *Clear Router/<string> Vrf/<string> Cache/n* This verb clears all entries in the cache table on LP *n*. This command deletes all the *Entry* subcomponents of *Cache/n*.

GROUP Rtr Vrf Cache OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cache adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf Cache operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf Cache usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Cache Operational (Oper)

Properties	Operational
Description	This group houses all the operational attributes of an *Ip* cache table.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cache entriesFree (ef)

Access	Read only
Description	This attribute is indicative of the number of free *Ip* cache table entries. A consistently high value for this attribute indicates that there is a resource surplus of the memory requirements for cache table. This surplus could be utilized elsewhere if needed by adjusting the appropriate *cacheTableMaxEntries* attribute. For *Vr*, *cacheTableMaxEntries* is under the *Ip* component; for *Rtr* and *Vrf*, it is under the respective components.
Mib	no_mib
Values	Decimal (0..8000)
Default	No default

ATTRIBUTE Rtr Vrf Cache totalLookups (tl)

Access	Read only
Description	This attribute indicates the total number of local cache lookups. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Cache lookupMisses (lm)

Access	Read only
Description	This attribute indicates the total number of local cache lookup misses. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Rtr Vrf Cache cacheTableMaxEntries (ctme)

Access	Read only
Description	This attribute indicates the current maximum number of entries that can exist in the IP local cache table on each LP.
Mib	no_mib
Values	Decimal (0..8000)
Default	No default

COMPONENT Rtr Vrf BorderGatewayProtocol (Bgp)

Groups	GROUP Rtr Vrf Bgp Provisioned (Prov) GROUP Rtr Vrf Bgp Operational (Oper) GROUP Rtr Vrf Bgp OsiState (State) GROUP Rtr Vrf Bgp AdministrativeControl (AdminControl) GROUP Rtr Vrf Bgp OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip BorderGatewayProtocol* *Rtr/<string> BorderGatewayProtocol* *Rtr/<string> Vrf/<string> BorderGatewayProtocol* This component is used to run the Border Gateway Protocol for IP.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf Bgp ImportPolicy (Import) COMPONENT Rtr Vrf Bgp ExportPolicy (Export) COMPONENT Rtr Vrf Bgp As COMPONENT Rtr Vrf Bgp AggregatePolicy (Aggregate)
Dyn. Subcomp.	COMPONENT Rtr Vrf Bgp IndbEntry (Indb) COMPONENT Rtr Vrf Bgp LocaldbEntry (Localdb) COMPONENT Rtr Vrf Bgp OutdbEntry (Outdb) COMPONENT Rtr Vrf Bgp LocalVpn COMPONENT Rtr Vrf Bgp MBgpRibEntry (MBgpRib) COMPONENT Rtr Vrf Bgp MplsVpnRibEntry (MvRib) COMPONENT Rtr Vrf Bgp Ipv4LabelRibEntry (LRib)
Dyn. Subcomp.	COMPONENT Rtr Vrf Bgp Peer
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Rtr Vrf Bgp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Bgp* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp bgpIdentifier

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Bgp* Identifier of this *Bgp* component instance. It is picked from the IP address space, and should follow the same rule as choosing an unique IP address for *IpPort* or *Interface*.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp localAs

Access	Read and write
Criticality	Component
Description	This attribute specifies the autonomous system identifier for this *Bgp* component instance.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp defaultLocalPreference (locPrf)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default degree of preference for routes. It can be overridden by the *localPreference* provisioned in *ImportPolicy*. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	144

ATTRIBUTE Rtr Vrf Bgp defaultMultiExitDisc (med)

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Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default metric to discriminate between multiple exit points to the same adjacent autonomous system. It can be overridden by the s*endMultiExitDiscToEbgp* provisioned in *ExportPolicy*. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967294

ATTRIBUTE Rtr Vrf Bgp routeThrottleLimit (rtl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of routes in the IP forwarding table this *Bgp* component instance will process at one time to decide if a route in the IP forwarding table should be exported to a peer. This limit is used because the throttling requirements are different under different network configurations.
Mib	no_mib
Values	Decimal (1..1000)
Default	250

ATTRIBUTE Rtr Vrf Bgp routeThrottleInter (rti)

Access	Read and write
Criticality	Component
Description	This attribute specifies the interval between the processing of the routes in the IP forwarding table to decide if a route in the IP forwarding table should be exported to a peer. This interval is used because the throttling requirements is different under different network configurations.
Mib	no_mib
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf Bgp routeReflector (rr)

Access	Read and write
Criticality	Component

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Description	This attribute specifies whether this *Bgp* instance is a Route Reflector. If the value of this attribute is ***true***, *Bgp* redistributes routes it learns from an IBGP speaker to other IBGP speakers in the AS. The rule of redistribution depends on the peer type: 1) When a route is learned from a non-client peer, it is redistributed to all the client peers within the cluster. 2) When a route is learned from a client peer, it is redistributed to all the non-client peers and also to the client peers. If the value of this attribute is ***false***, *Bgp* does not redistribute routes it learns from one IBGP speaker to other IBGP speakers in the AS.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Bgp **routeReflectorCluster (rrCluster)**

Access	Read and write
Criticality	Component
Description	This attribute identifies the cluster consisting of the Route Reflector and its peer clients. When *routeReflector* of *Bgp* is ***true***, value of 0.0.0.0 or 255.255.255.255 is invalid; the default value of this attribute is same as *bgpIdentifier*. For redundancy, a cluster may have more than one Route Reflector; in this case, the value of this attribute of all the Route Reflectors in the same cluster should be same. The value of this attribute is ignored when *routeReflector* of *Bgp* is ***false***
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp **redistributeIgpTolbgp (rigp)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance allows exporting of IGP routes to internal Bgp peers. IGP routes include the routes learned from OSPF, RIP, local routes and static routes. If the value of this attribute is ***true***, and if *ExportPolicy* is specified to distribute, then *Bgp* allows IGP route to be distributed to internal Bgp peers. If the value of this attribute is ***false***, *Bgp* does not allow IGP routes to be distributed to internal *Bgp* peer, even if *ExportPolicy* is specified to distribute. This attribute is set to true if and only this Bgp is part of the Carrier Manage Service, otherwise, a routing loop may result.
Mib	no_mib

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Values	true false
Default	false

ATTRIBUTE Rtr Vrf Bgp defaultIbgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for IBGP routes. It can be overridden by the *IbgpRtePreference* provisioned in *ImportPolicy*. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..253)
Default	122

ATTRIBUTE Rtr Vrf Bgp defaultEbgpRtePreference (ebgpPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for EBGP routes. It can be overridden by the *ebgpRtePreference* provisioned in *ImportPolicy*. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..253)
Default	70

ATTRIBUTE Rtr Vrf Bgp vpnPeeringTopology (topology)

Access	Read and write
Description	Under the *Vr* component, this attribute specifies the peering mode that determines if a dynamic IBGP peer is to be instantiated between this *BGP* instance and a discovered IP Tunnel endpoint on the remote customer VR. This mode controls the distribution of IP routing information among VPN sites through dynamic BGP sessions after auto-discovery has taken place. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.

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Under the *Rtr* or *Rtr Vrf* component, this attribute is not used.

Mib: no_mib

Values:
none
hub
spoke

Default: No default

ATTRIBUTE Rtr Vrf Bgp alarmGeneration (alarms)

Access: Read and write

Description: This attribute specifies the level of alarm generation for this *Bgp* instance.

A value of ***all*** specifies that all BGP alarms are made visible.

A value of ***normal*** specifies that all BGP alarms are made visible, except for the following:
- *Bgp Peer* listening failure alarms,
- *Bgp Peer* connect failure alarms, and
- *Bgp* notification alarms.

Any listening failure or connect failure alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

A value of ***none*** specifies that no BGP alarms are made visible. Any listening failure, connect failure, or “no auto discovery” alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

Note that, because the listening failure, connect failure, and “no auto discovery” alarms are triggered by state changes in the *Peer* component, they are not automatically regenerated when previously disabled alarm generation is enabled. For example, consider the following:
- If the *Bgp alarmGeneration* attribute is set to ***all*** and a *Peer* enters a listening failure state, a listening failure alarm is set against that *Peer* subcomponent.
- If the *Bgp alarmGeneration* attribute is then set to ***normal*** or ***none***, the above listening failure alarm is cleared.
- If the *Bgp alarmGeneration* attribute is then set back to ***all***, no alarm is generated because the *Peer* subcomponent has not changed state.
- If the *Peer* then exits the listening failure state, a listening failure alarm clear is generated for the *Peer*, even though there is no alarm set for that component.

When the scope of alarm generation has been increased for a *Bgp* instance, previously existing alarms which had been suppressed can be regenerated by locking and unlocking the *Bgp Peer* subcomponents.

For a *VirtualRouter* with *vpnMode* attribute be set to ***carrier***, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *VirtualRouter* with the *vpnMode* attribute set to ***customer***, it is

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recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Similarly, for a *Router* component, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *Router Vrf* component, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Mib: no_mib

Values:
none
normal
all

Default: all

ATTRIBUTE Rtr Vrf Bgp keyTransitionDelay (keyDelay)

Access: Read and write

Description: This attribute specifies a default delay period associated with a change of *md5Key* value event for the *Bgp* component. The *md5Key* is set under the *Bgp Peer Descriptor* component.

This is the time that can elapse before the local router transitions to using the new key for transmission for all the Bgp Peer sessions' under this *Bgp* component. This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception.

This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service.

This can be overridden by the *keyTransitionDelay* provisioned under the *Bgp Peer Descriptor* component.

Mib: no_mib

Values: Decimal (1..20160)

Units: minutes

Default: 10

ATTRIBUTE Rtr Vrf Bgp bgpImportRouteLimit (birl)

Access: Read and write

Criticality: Component

Description: This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.

Mib: no_mib

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Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Vrf Bgp bgpImportRouteDiscardLimit (bird)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

GROUP Rtr Vrf Bgp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Bgp* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp tableVersion

Access	Read only
Description	This attribute indicates the version of the BGP routing table. It is incremented every time the BGP routing table changes. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp inMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages received without error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp inErrors

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Access	Read only
Description	This attribute counts the total number of BGP messages received from all peers that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp inErrorMsgs

Access	Read only
Description	This attribute counts the total number of BGP NOTIFICATION messages from all the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp outMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages sent to peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp outDiscards

Access	Read only
Description	This attribute counts the number of BGP messages that were locally generated but were not sent out due to resource limitations within a *Bgp* instance. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp outErrorMsgs

Access	Read only

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Description	This attribute counts the BGP NOTIFICATION messages sent to the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp indbSize

Access	Read only
Description	This attribute indicates the number of *Bgp* indb entries under this *Bgp* component instance.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr Vrf Bgp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Bgp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Bgp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Bgp AdministrativeControl (AdminControl)

Properties	Provisioned

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Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf Bgp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Vrf Bgp Peer

Instance	IP address
Groups	GROUP Rtr Vrf Bgp Peer OsiState (State) GROUP Rtr Vrf Bgp Peer Operational (Oper)
Scope	Application

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Description	*Vr/<string> Ip Bgp Peer/<Ip Address>* *Rtr/<string> Bgp Peer/<Ip Address>* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address>* This component identifies the properties of a BGP peer. The index value of this entry identifies the IP address of that peer. This component is required for BGP to set up a peer session with a remote peer. Peers with discovered IP address are dynamic peers, where the provisioned ones are static peers.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf Bgp Peer Descriptor (Desc)
Dyn. Subcomp.	COMPONENT Rtr Vrf Bgp Peer Vpn
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Bgp Peer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Peer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Bgp Peer **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Bgp Peer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Bgp Peer **Operational (Oper)**

Properties	Operational

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Description	This group contains the operational attributes for the *Peer* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Peer connectionState

Access	Read only
Description	This attribute indicates the current state of this BGP peer connection. The meaning of each state is as follows: ***idle*** - it is the initial state of the BGP peer connection. Error events will also cause BGP peer connection to transit to the idle state. ***connect*** - BGP has initiated a TCP connection request to this peer, and waiting for reply from that peer. ***active*** - BGP is not initiating a TCP connection request to this peer, because TCP connection failed and is waiting for connection retry time-out. ***openSent*** - a TCP connection to this peer has been established, but the OPEN message has not been successfully exchanged. ***openConfirm*** - OPEN message has been successfully exchanged with this peer, but the first KEEPALIVE message has not been received from that peer. ***established -*** the first KEEPALIVE message has been received from this peer, which means this BGP peer connection has been established. See RFC 1771 for a detailed description of BGP state transitions.
Mib	no_mib
Values	idle connect active openSent openConfirm established
Default	idle

ATTRIBUTE Rtr Vrf Bgp Peer bgpIdentifier (bgpId)

Access	Read only
Description	This attribute indicates the BGP Identifier of this *Bgp Peer* component. It is learned from the peer through the OPEN message.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer versionNegotiated (vn)

Access	Read only
Description	This attribute indicates the BGP version number negotiated with this peer through the OPEN message. Currently, only BGP version 4 is supported.

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	BGP will reject the peer connection if our peer proposes a BGP version other than 4.
Mib	no_mib
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer holdTimeNegotiated (htn)

Access	Read only
Description	This attribute indicates the maximum time in seconds, that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. This is the negotiated value with peer through the OPEN message. The hold time must be either zero or at least three seconds. If the negotiated hold time is zero, then periodic KEEPALIVE messages are not expected from the peer.
Mib	no_mib
Values	Decimal (0; 3..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer keepAliveNegotiated (kan)

Access	Read only
Description	This attribute indicates the interval in seconds, between BGP KEEPALIVE message retransmissions. This keepalive interval will have the same ratio to the hold time negotiated with the peer as that of the locally configured keepalive and hold time. This attribute will be zero if the *holdTimeNegotiated* attribute is zero, which means periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0..21845)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer localAddressUsed (lau)

Access	Read only
Description	This attribute indicates the local IP address used for this BGP peer connection. If the *localAddressConfigured* attribute is non-zero, its value will be used. Otherwise, the local address will be assigned by TCP based on the remote IP address of this peer connection and the IP forwarding table.
Mib	no_mib

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Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer localPort

Access	Read only
Description	This attribute indicates the local TCP port for the connection between the BGP peers.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer remotePort

Access	Read only
Description	This attribute indicates the remote TCP port for the connection between the BGP peers.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer lastError

Access	Read only
Description	This attribute indicates the last error code and subcode seen by this *Bgp* component instance on this peer connection. The first byte of this two byte OCTET STRING contains the error code, and the second byte contains the subcode. A value of zero means that no error has occurred. Check RFC 1771 for mappings of error codes and error subcodes.
Mib	no_mib
Values	String (2, Hex)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer connectionEstablishedTime (ceTime)

Access	Read only
Description	This attribute indicates how long since this *Peer* component's last transition to or from the ***established*** state. It is set to zero when the *Peer* component is activated.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds

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Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **connectionEstablishedTransitions (ceTrans)**

Access	Read only
Description	This attribute counts the total number of times the BGP connection state transitioned into the ***established*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **inUpdateElapsedTime (iuet)**

Access	Read only
Description	This attribute indicates the elapsed time in seconds since the last BGP UPDATE message was received from the peer. Each time *inUpdates* attribute is incremented, the value of this attribute is set to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer **inMsgs**

Access	Read only
Description	This attribute counts the number of BGP messages received without error from the BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **inUpdates**

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages received on this peer connection. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **inErrors**

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Access	Read only
Description	This attribute counts the number of messages received from this BGP peer that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **inErrorMsgs**

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages received from this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **outMsgs**

Access	Read only
Description	This attribute counts the number of locally generated BGP messages sent to this BGP peer. It does not include discarded messages. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **outUpdates**

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages sent to this peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **outDiscards**

Access	Read only

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Description	This attribute counts the number of locally generated BGP messages not sent to this BGP peer due to resource limitations within a BGP entity. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **outErrorMsgs**

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages sent to this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **inRoutes**

Access	Read only
Description	This attribute indicates the number of routes received from this BGP peer.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer **peerType**

Access	Read only
Description	This attribute indicates the way this peer is created. Peer is **static,** if created through provisioning or **dynamic,** if created through IP VPN auto discovery. For *Router* and *Vrf*, all peers are statically created. So, this value will always be ***static***.
Mib	no_mib
Values	static dynamic
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer **authenticationType**

Access	Read only

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Description	This attribute indicates the authentication type of this BGP peer. If the *md5Key* attribute under the *Bgp Peer Desc* component is set to a null string, this peer's authentication type is ***none***; otherwise, if the *md5Key* attribute is set to a valid non-null string, this peer's authentication type is ***md5***. If this BGP peer's *peerType* is ***dynamic***, its authentication type is always ***none***.
Mib	no_mib
Values	none md5
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer **noAuthenticationPkts**

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which do not contain the MD5 authentication information, but MD5 authentication is provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a valid non-null string, but the remote BGP peer does not use MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer **badAuthenticationPkts**

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which fail the MD5 authentication. This type of authentication failure occurs when the *md5Key* attribute set under the local *Bgp Peer Desc* component does not match the MD5 key used by the remote BGP peer, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer **unexpectedAuthenticationPkts**

Access	Read only

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Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which contain the MD5 authentication information, but MD5 authentication is not provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a null string, but the remote BGP peer uses MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer addressFamilyNegotiated (afn)

Access	Read only
Description	The attribute indicates the list of multi-protocol extensions negotiated on this peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamilyNegotated* list of the peer instance. ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***ipv4Vpn*** represents AFI = 1 and SAFI = 140 (not for RFC 2547) ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (not for RFC 2547) ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***ipv4Label*** represents AFI = 1 and SAFI = 4
Mib	no_mib
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	No default

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ATTRIBUTE Rtr Vrf Bgp Peer capabilityNegotiated (cn)

Access	Read only
Description	The attribute indicates the list of capabilities negotiated on this peer session.
Mib	no_mib
List of	mpExtensions routeRefresh cooperativeRouteFiltering
Default	No default

COMPONENT Rtr Vrf Bgp Peer Descriptor (Desc)

Groups	GROUP Rtr Vrf Bgp Peer Desc Provisioned (Prov)
Scope	Network
Description	*Vr/<string> Ip Bgp Peer/<Ip Address> Desc* *Rtr/<string> Bgp Peer/<Ip Address> Desc* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address> Desc* This component contains provisioned attributes for BGP peers. Provisioned attributes are only used when the peer is a statically provisioned peer.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Bgp Peer Desc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisional attributes for this BGP *Peer* component
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Peer Desc peerAs

Access	Read and write
Description	This attribute specifies the autonomous system identifier of this BGP *Peer* component. It is used to verify the autonomous system identifier learned from the peer through the OPEN message. The peer connection is rejected and a NOTIFICATION message is sent to the peer if these two numbers don't match.

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Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer Desc **localAddressConfigured (lac)**

Access	Read and write
Description	This attribute specifies the local IP address configured for this *Bgp Peer* connection. If this attribute is 0.0.0.0, TCP chooses a local IP interface based on the remote IP address of this peer connection and the IP forwarding table. The value chosen is stored in the *localAddressUsed* attribute under the same *Peer* component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Peer Desc **keepAliveConfigured (kac)**

Access	Read and write
Description	This attribute specifies the configured interval between BGP KEEPALIVE message retransmissions. It is used to establish the ratio between keepalive interval and hold time. If this attribute is zero, then the *holdTimeConfigured* attribute must be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0..21845)
Units	seconds
Default	30

ATTRIBUTE Rtr Vrf Bgp Peer Desc **holdTimeConfigured (htc)**

Access	Read and write
Description	This attribute specifies the maximum time that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. The hold time must be either zero or at least three seconds. If this attribute is zero, then the *keepAliveConfigured* attribute should also be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0; 3..65535)
Units	seconds
Default	90

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ATTRIBUTE Rtr Vrf Bgp Peer Desc **connectRetryTime (connectRetry)**

Access	Read and write
Description	This attribute specifies the time interval for the ConnectRetry timer. It is the minimum amount of time that must elapse between successive TCP connection retries for establishing BGP peer connection.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	120

ATTRIBUTE Rtr Vrf Bgp Peer Desc **minAsOrigTime (minAsOrig)**

Access	Read and write
Description	This attribute specifies the time interval for the MinAsOriginationInterval timer. It is the minimum amount of time that must elapse between updates that advertise a change to a route within the local autonomous system to neighboring autonomous systems.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	15

ATTRIBUTE Rtr Vrf Bgp Peer Desc **minRouteAdvTime (minRouteAdv)**

Access	Read and write
Description	This attribute specifies the time interval for the MinRouteAdvertisementInterval timer. Feasible routes received from peers in other autonomous systems may only be re-advertised to peers in other autonomous systems at a rate no greater than MinRouteAdvertisementInterval.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	30

ATTRIBUTE Rtr Vrf Bgp Peer Desc **defaultInAggMed (diaMed)**

Access	Read and write
Description	This attribute specifies this *Bgp Peer* component instance's metric for generating a dynamic default route whenever this external BGP peer got established. It is used to prioritize between the dynamic default routes generated by BGP speakers. If this attribute is not set, BGP does not generate a dynamic default route. When this attribute is set, BGP

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automatically generates a dynamic default route when the connection established.

Mib no_mib

Values Decimal (0..4294967295)

Default 4294967295

ATTRIBUTE Rtr Vrf Bgp Peer Desc **isRouteReflectorClient (isRrClient)**

Access Read and write

Description This attribute specifies whether the peer is a client peer or non-client peer of this *Bgp* instance. The attribute is ignored unless the value of the '*routeReflector'* attribute of the '*Bgp'* component is set to ***true***.

Mib no_mib

Values true
false

Default false

ATTRIBUTE Rtr Vrf Bgp Peer Desc **removePrivateAs (remPrivate)**

Access Read and write

Description This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is enabled, then BGP will remove private AS numbers from the AS_PATH. This attribute is meaningful only for external peers.

Mib no_mib

Values enabled
disabled

Default disabled

ATTRIBUTE Rtr Vrf Bgp Peer Desc **nextHopSelf (nhs)**

Access Read and write

Description This attribute controls the setting of the NEXT_HOP path attribute in routes advertised to the peer. If this attribute is enabled, BGP will advertise itself as the NEXT_HOP. This is useful when routes are propagated from an EBGP peer to an IBGP peer: the IBGP peer does not need to have a route to the EBGP peer.

Mib no_mib

Values enabled
disabled

Default disabled

ATTRIBUTE Rtr Vrf Bgp Peer Desc **md5Key**

Access Write only

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Description	This attribute specifies this *Bgp Peer* component instance's MD5 key value that is used by the MD5 authentication on this BGP Peer session's underlying TCP connection. A null string indicates that the MD5 authentication is not to be used on the TCP connection to this Bgp Peer session.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Desc **keyTransitionDelay (keyDelay)**

Access	Read and write
Description	This attribute specifies a delay period associated with a change of *md5Key* value event of the *Peer* component. This is the time that can elapse before the local router transitions to using the new key for transmission for this Bgp Peer session.This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception. This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service. If ***sameAsBgp*** is specified, the value of *keyTransitionDelay* set under the parent *Bgp* component is used. Otherwise the value of this attribute will be used**.** The default is to use ***sameAsBgp***.
Mib	no_mib
Values	Decimal (1..20160) sameAsBgp
Units	minutes
Default	sameAsBgp

ATTRIBUTE Rtr Vrf Bgp Peer Desc **multiHopEbgp (mhEbgp)**

Access	Read and write
Description	This attribute specifies whether MultiHop EBGP (External BGP) route distribution is supported on this EBGP peer. MultiHop EBGP allows routes to be distributed between EBGP peers that are not directly connected and can span multiple hops
Mib	no_mib
Values	enabled disabled
Default	disabled

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ATTRIBUTE Rtr Vrf Bgp Peer Desc **asPathCheck**

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH loop detection mechanism in routes received from the peer. If this attribute is set to ***disabled***, AS_PATH loop is not detected. If this attribute is set to ***enabled***, AS_PATH loop is detected.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf Bgp Peer Desc **attachSiteOfOrigin (attachSoo)**

Access	Read and write
Description	This attribute specifies the site of origin identifier to attach for this BGP Peer connection. If this attribute is set, a site of origin extended community path attribute is attached to the routes received from this peer unless the site of origin extended community path attribute is already included in the routes.
Mib	no_mib
Values	String (0..21, RFC2547RdRtSyntax)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Desc **checkSiteOfOrigin (checkSoo)**

Access	Read and write
Description	This attribute specifies the site of origin identifiers to check for this BGP Peer connection. If this attribute is set, a check is done when routes are received from this peer or advertised to this peer. If the site of origin extended community path attribute presents in received routes and matches any Site Of Origin in this attribute, the routes are not accepted. If the site of origin extended community path attribute presents in the advertised routes and matches any SOO in this attribute, the routes are not advertised to this peer. If this attribute is not set, no check and filtering is done.
Mib	no_mib
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Desc **bgpPeerRouteLimit (bprl)**

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Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer Desc **bgpPeerRouteDiscard (bprd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer Desc **asOverride (asOr)**

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is ***enabled,*** then BGP will override all the AS numbers in the AS_PATH list, that match the AS number of the peer that we are sending to, with the local AS number. This attribute is meaningful only for external peers. This attribute is available for the *Bgp Peer Desc* component under the *Vr Ip*, *Vrf* and *Rtr* components. However, if it is set to ***enabled*** under the *Rtr Bgp Peer Desc* component, it has no impact. The behaviour is ***disabled*** regardless of the provisioned value in this case.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Bgp Peer Desc **addressFamily**

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Access	Read and write
Description	The attribute specifies the supported network layer protocols being carried in any BGP-4 UPDATE messages over this Peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be added to this attribute on all VCGs' peer instances. To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamily* list of all the VCGs' Peer instances. To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamily* list of all the VCGs' peer instances. To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamily* list of the peer instance. ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***ipv4Vpn*** represents AFI = 1 and SAFI = 140 (not for RFC 2547) ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (not for RFC 2547) ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***ipv4Label*** represents AFI=1 and SAFI=4
Mib	no_mib
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	(ipv4Unicast)

COMPONENT Rtr Vrf Bgp Peer Vpn

Instance	String (7, Dashed Hex)
Scope	Application

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Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> This component contains all VPN information that is learned by this BGP peer instance.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Vrf Bgp Peer Vpn Ipv4
Common Verbs	Help List Display

COMPONENT Rtr Vrf Bgp Peer Vpn Ipv4

Instance	IP address
Groups	GROUP Rtr Vrf Bgp Peer Vpn Ipv4 Operational (Oper)
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP peer for the specified VPN.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp Peer Vpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 asPath

Access	Read only

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Description	This attribute indicates the sequence of AS path segments through which the IP VPN information arrives. The AS Path lists the ASs in reverse traversal order from the point of origin. This attribute is not applicable and is not displayed for locally -learned IP VPN information.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 **vpnPeeringTopology**

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.
Mib	no_mib
Values	none hub spoke
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 **asOriginatorId**

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of this IP VPN information in the local AS. When the Route Reflector in the backbone distributes a discovered VPN information to other IBGP speakers, the value of this attribute in the discovered VPN information is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib

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Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 **redundant**

Access	Read only
Description	This attribute indicates that the IP VPN information entry learned from more than one BGP peers in the carrier backbone. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
Values	no yes
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 **rrClusterList**

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the sequence of cluster-ids that this discovered IP VPN information has traversed. When the Route Reflector in the backbone reflects a discovered VPN information to other non-client IBGP peers, the cluster ID of the Route Reflector is added to the cluster list of the received VPN information. A blank list indicates this attribute is not present in the received VPN information or if this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp **ImportPolicy (Import)**

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Bgp Import Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n* *Rtr/<string> Bgp Import/n* *Rtr/<string> Vrf/<string> Bgp Import/n* Each instance of this component describes a BGP import policy. A BGP import policy is used to decide if certain routing information learned from its peer is to be ignored or used.

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If no import policy is provisioned, BGP will accept all routes received from its IBGP peers, but will not use any routing information received from its EBGP peers.
If multiple import policies are provisioned, the one with the most specific match will apply.
The keys are matched in the following order from the least specified to the most specified:
Network,
peerAs,
peerIpAddress,
originAs,
originProtocol,
matchAsPath,
matchCommunity.

Example1:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, originAs = ***20***, usageFlag = ***use***
vr/0 ip bgp import/2, originProtocol = ***igp***, usageFlag = ***ignore***
If a BGP NLRI contains a route originally learned from an igp with origin AS 20, it will be used.
Example2:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, matchAsPath = ***"1 2 3"***, usageFlag = ***ignore***
vr/0 ip bgp import/2, originProtocol = ***any***, usageFlag = use
If a BGP NLRI contains a route originally learned from an igp with the AsPath "1 2 3 4", it will be ignored.

For Router and Vrf, the example is similar with 'Vr/0 Ip' replaced with 'Router/0' and 'Router/0 Vrf/1' respectively.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf Bgp Import Network (Net)
Common Verbs	Help List Display Add DELete

GROUP **Rtr Vrf Bgp Import** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains all the provisionable attributes for the *Import* component.
Mib	no_mib

ATTRIBUTE **Rtr Vrf Bgp Import** **peerAs**

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Access	Read and write
Description	This key attribute specifies the autonomous system number of the peer from which the routes are learned. A value of 0 for this attribute means that peer AS number will match any AS number.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Import **peerIpAddress**

Access	Read and write
Description	This key attribute specifies the IP address of the peer from which the routes are learned. A value of 0.0.0.0 for this attribute means that peer IP address will match any IP address.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Import **originAs**

Access	Read and write
Description	This key attribute specifies the autonomous system number where the routes were originated. A value of 0 for this attribute means origin AS number will match any AS number.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Import **originProtocol**

Access	Read and write
Description	This key attribute specifies the protocols that originated the routes. A value of ***incomplete*** for this attribute means this information is not available.
Mib	no_mib
Values	any igp egp incomplete
Default	any

ATTRIBUTE Rtr Vrf Bgp Import **usageFlag (usage)**

Access	Read and write

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Description	This attribute specifies whether BGP will use or ignore information in received update if it meets criteria specified by the key attributes of this component.
Mib	no_mib
Values	use ignore
Default	use

ATTRIBUTE Rtr Vrf Bgp Import localPreference (locPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's degree of preference for those routes that match the criteria of this import policy. A higher value indicates a more preferred route. A value of 0 for this attribute means that the default local preference value provisioned under the *Bgp* component should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Import asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the received update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters has the special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. 'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. '[n1... n2]' - Matches any AS number that appeared in the set n1... n2. 'n1 - n2' - Matches any AS number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a AS

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set, range or number.
The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib — no_mib

Values — String (0..255, ASCII)

Default — No default

ATTRIBUTE Rtr Vrf Bgp Import **communityExpression (comExpr)**

Access — Read and write

Description — This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280.

The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute.

The following characters have a special meaning:
'[n1... n2]' - Matches any Community number that appeared in the set n1...n2.
'n1 - n2' - Matches any Community number between the range of n1 and n2.
'()' - is supported to change the order of evaluation.
'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number.
'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the Community attribute that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y

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matches the intersection of the Community attribute that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y.
For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Import expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity*. This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two import policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	no_mib
Values	Decimal (0..255)
Default	128

ATTRIBUTE Rtr Vrf Bgp Import appendCommunity (appCom)

Access	Read and write
Description	This attribute indicates which community number this import policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is appended to the Community attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Import ibgpRtePreference (ibgpPref)

Access	Read and write

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Description	This attribute specifies the routing preference of IBGP routes matching this import policy. A lower value means the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultIbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	no_mib
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Rtr Vrf Bgp Import **ebgpRtePreference (ebgpPref)**

Access	Read and write
Description	This attribute specifies the routing preference of EBGP routes matching this import policy. A lower value specifies the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultEbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	no_mib
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Rtr Vrf Bgp Import **addressFamily (af)**

Access	Read and write
Description	This attribute specifies the Address Family of the routes this import policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (Not for RFC 2547) ***all***
Mib	no_mib
Values	all ipv4Unicast mbgpVpn ipv4Label
Default	all

ATTRIBUTE Rtr Vrf Bgp Import **description (desc)**

Access	Read and write

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Description	This attribute specifies the policy. For example, 'to import BGP routes from AS 1'.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Bgp Import **Network (Net)**

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Bgp Import Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n Network/n* *Rtr/<string> Bgp Import/n Network/n* *Rtr/<string> Vrf/<string> Bgp Import/n Network/n* This is an optional subcomponent of *Import* component and identifies destination networks that this BGP import policy applies to. This component is used as a key for the import policy. If no network list is provisioned, the import policy applies to all networks.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Bgp Import Net **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Import Net **prefix**

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Import Net **length**

Access	Read and write

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Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Rtr Vrf Bgp ExportPolicy (Export)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Bgp Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n* *Rtr/<string> Bgp Export/n* *Rtr/<string> Vrf/<string> Bgp Export/n* Each instance of this component describes a BGP export policy. A BGP export policy is used to decide if certain routing information should be blocked or advertised to its peers. If no export policy is provisioned, BGP will advertise all external BGP learned routes to its internal peers, but not advertise any routing information to its external peers. If multiple export policies are provisioned, the one with the most specific match will apply. The keys are matched in the following order from the least specified to the most specified: *peerAs*, *peerIpAddress*, *protocol,* *ripInterface* (if applicable), *egpAs, bgpAs, ripNeighbour*, or *ospfTag* (whichever is applicable), *Network,* *matchAsPath,* *matchCommunity.* Example1: (for Router and Vrf, the examples are similar by replacing 'vr/0 ip' with 'Router/a' and 'Router/a Vrf/b' respectively) There are 2 export policies defined: vr/0 ip bgp export/1, protocol = ***all***, advertiseStatus = ***send*** vr/0 ip bgp export/2, protocol = ***rip***, advertiseStatus = ***block*** BGP will generate BGP updates for all routes except the routes learned from RIP. Example2: There are 2 export policies defined: vr/0 ip bgp export/1, protocol = all, matchCommunity = ***303***, advertiseStatus = ***send*** vr/0 ip bgp export/2, protocol = ***all***, advertiseStatus = ***block***

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BGP will generate BGP updates for all routes that belongs to Community 303.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Vrf Bgp Export Network (Net)

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf Bgp Export Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisioned attributes for the *Export* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Bgp Export peerAs

Access: Read and write

Description: This key attribute specifies the autonomous system number of the peer where the routes are advertised to. A value of 0 for this attribute means this export policy applies to all peer ASes.

Mib: no_mib

Values: Decimal (0..65535)

Default: 0

ATTRIBUTE Rtr Vrf Bgp Export peerIpAddress

Access: Read and write

Description: This key attribute specifies the IP address of the peer where the routes are advertised to. A value of 0.0.0.0 for this attribute means this export policy applies to all peers. This key attribute is used in export policies for AFI/SAFI = 1/128 only if the *addressFamily* attribute is set to ***ipv4MplsVpn***.

Mib: no_mib

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Export protocol

Access: Read and write

Description: This key attribute specifies which protocol the export policy applies to. If it is set to ***all***, that means this export policy will apply all routes in the IP routing table.

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	Example: vr/1 ip ospf export/1 with advertise Status = block protocol = bgpExternal bgpAsId = 3 peerAs = 5 This policy specifies that all routes learned from EBGP Peers that are originated from AS 3 should not be advertised to AS 5.
Mib	no_mib
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal bgpAggregate mbgp bgpMplsInternal
Default	all

ATTRIBUTE Rtr Vrf Bgp Export **egpAsId (egpAs)**

Access	Read and write
Description	This key attribute specifies the EGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to ***egp***.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export **bgpAsId (bgpAs)**

Access	Read and write
Description	This key attribute specifies the BGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to either ***bgpInternal*** or ***bgpExternal***.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export **ospfTag**

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Access	Read and write
Description	This key attribute specifies the OSPF tag when the *protocol* attribute is set to either ***ospfInternal*** or ***ospfExternal***. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag not specified.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Rtr Vrf Bgp Export ripInterface (ripIf)

Access	Read and write
Description	This key attribute specifies the local RIP interface where the routes are learned from. The *ripInterface* attribute when non-zero should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or the IP address of an *Interface* component. Otherwise, this policy will be ignored. The value of the *protocol* attribute must be set to ***rip*** if a value for the *ripInterface* attribute is non-zero.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This key attribute specifies the RIP neighbor where the routes were learned from. The value of the *protocol* attribute must be set to ***rip*** if the *ripNeighbor* attribute is non-zero.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether data will be exported if it meets criteria specified by the other key attributes of this component.
Mib	no_mib
Values	send block
Default	send

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ATTRIBUTE Rtr Vrf Bgp Export **multiExitDisc (med)**

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's metric to discriminate between multiple exit points to an adjacent autonomous system if the route meets the criteria specified by the key attributes of this component. A lower value indicates a more preferred route. A value of 0 for this attribute means the default MED value provisioned under the *Bgp* component should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export **sendMultiExitDiscToEbgp (sendMed)**

Access	Read and write
Description	This attribute specifies whether the Multi Exit Discriminator (MED) attribute should be included in an update message sent to an EBGP peer.
Mib	no_mib
Values	false true
Default	false

ATTRIBUTE Rtr Vrf Bgp Export **asPathExpression (asExpr)**

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the export update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters have a special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. 'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. '[n1... n2]' - Matches any AS number that appeared in the set n1... n2. 'n1 - n2' - Matches any AS number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a

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set, range or AS number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib — no_mib

Values — String (0..255, ASCII)

Default — No default

ATTRIBUTE Rtr Vrf Bgp Export **communityExpression (comExpr)**

Access — Read and write

Description — This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280.
The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute.
The following characters have a special meaning:
'[n1... n2]' - Matches any Community number that appeared in the set n1...n2.
'n1 - n2' - Matches any Community number between the range of n1 and n2.
'()' - is supported to change the order of evaluation.
'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number.
'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the

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Community attribute that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y.
For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Export expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity*. This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two export policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	no_mib
Values	Decimal (0..255)
Default	128

ATTRIBUTE Rtr Vrf Bgp Export sendCommunity (sendCom)

Access	Read and write
Description	This attribute indicates which community number this export policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is added to the Community attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rtr Vrf Bgp Export **localPreference (locPrf)**

Access	Read and write
Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes sent to internal peers. A value of 0 means that the value specified in the import policy (if any) or the default local preference value should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export **virtualPrivateNetworkIdentifier (vpnId)**

Access	Read and write
Description	This attribute specifies the Virtual Private Network (VPN) identifier of the routes this export policy should apply to. This attribute is only used if *addressFamily* has included ***mbgpVpn***. The value “00-00-00-00-00-00-00” identifies an unspecified VPN ID, meaning the VPN ID will not be used as a matching criteria in this export policy.
Mib	no_mib
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Rtr Vrf Bgp Export **addressFamily (af)**

Access	Read and write
Description	This attribute specifies the Address Family of the routes this export policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). An export policy is applied for AFI/SAFI = 1/128 only when this attribute is set to ***ipv4MplsVpn***. In this case only *peerIpAddress*, *routeTarget*, and *advertiseStatus* attributes and *Network* component and its related attributes are used for export policies. It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***all***
Mib	no_mib
Values	all ipv4Unicast mbgpVpn ipv4MplsVpn

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Default	all

ATTRIBUTE Rtr Vrf Bgp Export **description (desc)**

Access	Read and write
Description	This attribute describes the policy. For example, 'to export BGP routes to MCI'.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Export **insertDummyAs (insertAs)**

Access	Read and write
Description	This attribute specifies the AS number(s) to be inserted into the AS Path Attribute. The value is a sequence of AS number separated by period(.). For example, if the value is ***20.20.30***, the AS numbers 20, 20 and 30 would be inserted at the end of the AS Path Attribute just before the local AS number.
Mib	no_mib
Values	Integer Sequence
Default	No default

ATTRIBUTE Rtr Vrf Bgp Export **routeTarget (rt)**

Access	Read and write
Description	This attribute specifies the Route Target of the routes this export policy should apply to.
Mib	no_mib
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp Export **Network (Net)**

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Bgp Export Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n Network/n* *Rtr/<string> Bgp Export/n Network/n* *Rtr/<string> Vrf/<string> Export/n Network/n* This is an optional subcomponent of the *Export* component and identifies a destination network that this BGP export policy will apply to. This

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component is used as a key for the export policy. If no network list is provisioned, the export policy applies to all networks. This component and its associated attributes are applied in an export policy for AFI/SAFI = 1/128 only if *addressFamily* attribute is set to ***ipv4MplsVpn***.

Mib: no_mib

Common Verbs: Help, List, Display, Add, DELete

GROUP Rtr Vrf Bgp Export Net Provisioned (Prov)

Properties: Provisioned

Description: This group contains the set of provisionable attributes for the *Network* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Bgp Export Net prefix

Access: Read and write

Description: This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.

Mib: no_mib

Values: IP address

Default: No default

ATTRIBUTE Rtr Vrf Bgp Export Net length

Access: Read and write

Description: This attribute specifies the length of the network prefix.

Mib: no_mib

Values: Decimal (1..32)

Units: bits

Default: No default

COMPONENT Rtr Vrf Bgp As

Instance: Decimal (0..65535)

Groups: GROUP Rtr Vrf Bgp As Provisioned (Prov)

Scope: Application

Description: *Vr/<string> Ip Bgp As/n*
Rtr/<string> Bgp As/n

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Rtr/<string> Vrf/<string> Bgp As/n
This component associates attributes to an autonomous system.

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Vrf Bgp As Provisioned (Prov)

Properties Provisioned

Description This group contains the attributes associated to each autonomous system for this *Bgp* component instance.

Mib no_mib

ATTRIBUTE Rtr Vrf Bgp As weight

Access Read and write

Description This attribute specifies the weight for an autonomous system. It allows users to prefer some ASes over others. It is used in route selection. Lowest weight is preferred. Setting the weight of an AS to 255 will make any route that traverses through that AS unpreferred.

Mib no_mib

Values Decimal (0..255)

Default 128

COMPONENT Rtr Vrf Bgp AggregatePolicy (Aggregate)

Instance prefix [IP address]
length [Decimal (0..32)]

Scope Application

Description *Vr/<string> Ip Bgp AggregatePolicy/<Ip Address>,<Decimal>*
Rtr/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>
Rtr/<string> Vrf/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>
This component is used to perform aggregation of BGP routes for exporting. Aggregation is the process of combining the characteristics of several different routes in such a way that a single route can be advertised. Aggregation reduces the amount of information that a BGP speaker must store and exchange with other BGP speakers. Refer to RFC1771 for the set of rules regarding which routes can be aggregated. A ***network*** subcomponent is automatically added with the same network range as the aggregation policy key and its action is set to ***aggregate***. So by default all subnets under the aggregation key range will be aggregated. Examples (For *Router* and *Vrf*, the examples are similar by replacing ‘vr/0

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ip' with 'Router/a' and 'Router/a Vrf/b' respectively):
Example #1: aggregate all the networks covered by A.0.0.0/8
add vr/0 ip bgp aggregate/A.0.0.0,8
(Note: the following subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate will be automatically added)

Example #2: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.B.0.0, length 16, action aggregate
(Note: this set command will overwrite the default network subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate)
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate

Example #3: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks; also advertise A.B.C.0/24
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 networkl/0 prefix A.B.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/2
set vr/0 ip bgp aggregate/A.0.0.0,8 network/2 prefix A.B.C.0, length 24, action advertise

Example #4: aggregate all networks under A.0.0.0/8, meanwhile advertise A.B.0.0/16
add vr/0 ip bgp aggregate/A.0.0.0,8
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.B.0.0, length 16, action advertise

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Vrf Bgp Aggregate Network (Net)

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT Rtr Vrf Bgp Aggregate Network (Net)

Instance: Decimal (0..65535)

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Groups	GROUP Rtr Vrf Bgp Aggregate Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Vrf/<string> Bgp Aggregate/<IP address>,<n> Network/n* This is an optional subcomponent of *Aggregate* component and identifies a set of more specific routes that this BGP will aggregate or advertise together with the aggregated route.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Bgp Aggregate Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Aggregate Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (0..32)
Units	bits
Default	0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net protocol

Access	Read and write

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Description	This attribute specifies the IP protocols to which this route should belong.
Mib	no_mib
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal
Default	all

ATTRIBUTE Rtr Vrf Bgp Aggregate Net **egpAsId (egpAs)**

Access	Read and write
Description	This attribute specifies an EGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***egp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through egp and this attribute matches the EGP autonomous system number where the network is learned from. The default value 0 indicates that the EGP autonomous system number is not specified.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net **bgpAsId (bgpAs)**

Access	Read and write
Description	This attribute specifies the BGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***bgp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through BGP and this attribute matches the BGP autonomous system number where the network is learned from. The default value 0 indicates that the BGP autonomous system number is not specified.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net **ospfTag**

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Access	Read and write
Description	This attribute specifies the OSPF tag. When this attribute is set to a value other than the default value FFFFFFFF in hex, the *protocol* attribute must be set to either ***ospf*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if its OSPF tag matches this value. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag is not specified.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Rtr Vrf Bgp Aggregate Net **ripInterface (ripIf)**

Access	Read and write
Description	This attribute specifies a local RIP interface which should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or one of the IP addresses provisioned as an *Interface* component. When this value is non-zero, the value of the *protocol* attribute must be either set to ***rip*** or to ***all.*** And this more specific route will be advertised together with the aggregated route only if it is learned through RIP and this RIP interface. The default value 0.0.0.0 indicates that the RIP interface is not specified.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net **action**

Access	Read and write
Description	This attribute specifies whether this network should be aggregated or advertised out.
Mib	no_mib
Values	aggregate advertise
Default	aggregate

COMPONENT Rtr Vrf Bgp **IndbEntry (Indb)**

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]

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Groups	GROUP Rtr Vrf Bgp Indb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string>Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string> Vrf/<string> Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes a BGP route received from one of its peers.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp Indb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *IndbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Indb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb inLocaldb

Access	Read only
Description	This attribute indicates whether or not this route was chosen as the best BGP4 route.
Mib	no_mib
Values	false true
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb nextHop

Access	Read only

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Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb calcLocalPref

Access	Read only
Description	This attribute indicates our degree of preference for this route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected

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Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb **asPath**

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb **unknownAttributes (unknown)**

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.

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Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb **asOriginatorId**

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb **rrClusterList**

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp **LocaldbEntry (Localdb)**

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Vrf Bgp Localdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP local database. This database contains the routing information that the BGP speaker has

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selected by applying its local import policies and decision process to the routing information stored in *IndbEntry*.

Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp Localdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *LocaldbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Localdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Rtr Vrf Bgp Localdb **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb **asPath**

Access	Read only

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Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.

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Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp OutdbEntry (Outdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Vrf Bgp Outdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP output database that BGP advertises to its peers. The database contents are selected by applying its local export policies to the routing information stored in the IP forwarding table.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp Outdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *OutdbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Outdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

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ATTRIBUTE Rtr Vrf Bgp Outdb **nextHop**

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **localPreference**

Access	Read only
Description	This attribute indicates this *Bgp* instance's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **aggregatorAs**

Access	Read only

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Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **asPath**

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **unknownAttributes (unknown)**

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)

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Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **asOriginatorId**

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of a route in the local AS. When the Route Reflector distributes a learned IBGP route to other IBGP speakers, the value of this attribute in the learned route is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb **rrClusterList**

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. When the Route Reflector redistributes a learned IBGP to other IBGP speakers, the cluster id of this Route Reflector is appended to the cluster list of the learned IBGP route. If this *Bgp* instance is not a Route Reflector, this attribute is blank.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp **LocalVpn**

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> This component contains all VPN information from the specified VPN that is learned from customer VR on the local node.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Vrf Bgp LocalVpn Ipv4
Common Verbs	Help List Display

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COMPONENT Rtr Vrf Bgp LocalVpn Ipv4

Instance	IP address
Groups	GROUP Rtr Vrf Bgp LocalVpn Ipv4 Operational (Oper)
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP locally for the specified VPN.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp LocalVpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp LocalVpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp LocalVpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no

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dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.

Mib: no_mib

Values:
none
hub
spoke

Default: No default

COMPONENT Rtr Vrf Bgp MBgpRibEntry (MBgpRib)

Instance:
vpnId [String (7, Dashed Hex)]
prefix [IP address]
length [Decimal (0..32)]
peer [IP address]

Groups: GROUP Rtr Vrf Bgp MBgpRib Operational (Oper)

Scope: Application

Description:
Vr/<string> Ip Bgp MBgpRibEntry/ <vpnid>,<prefix>,<length>,<peer_ip_address>
This component represents a single MBGP routing database entry received from one of the BGP peers of this virtual router.

The instance values of this component have the following meanings:
- *vpnId:* the virtual private network identifier associated with the MBGP route.
- *prefix*: the destination IP address prefix of the MBGP route.
- *length:* the length of the IP address prefix of the MBGP route.
- *peer_ip_address:* the IP address prefix of the BGP peer that the MBGP route has been learned from. A value of 0.0.0.0 indicates that the MBGP route is learned from a locally attaching customer VR.

This component only appears under a *VirtualRouter* component whose *vpnMode* attribute is set to ***carrier***.

Mib: no_mib

Common Verbs:
Help
List
Display

GROUP Rtr Vrf Bgp MBgpRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MBgpRibEntry* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Bgp MBgpRib origin

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Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **status**

Access	Read only
Description	This attribute indicates whether the MBGP route has been distributed into the routing table of the customer VR corresponding to the VPN identifier value.
Mib	no_mib
Values	localVpnRoute inCvrRdb importBlocked importLimitExceeded unreachableNh
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **nextHop**

Access	Read only
Description	This attribute indicates the IP address of the router that should be used as the next hop to reach the destination address prefix given by the instance value of this component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **localPreference**

Access	Read only
Description	This attribute indicates the local IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **multiExitDiscriminator (med)**

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Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this path attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this path attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **asPath**

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.

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Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib **unknownAttributes (unknown)**

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Bgp **MplsVpnRibEntry (MvRib)**

Instance	routeDistinguisher [String (3..21, RFC2547RdRtSyntax)] prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Vrf Bgp MvRib Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> *Rtr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> The *MplsVpnRibEntry* component represents a single entry in the MPLS VPN routing information database.This component is used to maintain the MPLS VPN routes learned both locally and from the BGP peers. The instance values of this component have the following meaning: - *routeDistinguisher:* a string associated with the MPLS VPN route. The string is in the form of (1) AS:nn or (2) IPAddr:mm. where AS represents an autonomous system number, nn represents an index value, IPAddr represents an IP address,

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mm represents an index value

- *prefix*: the destination IP address prefix of the MPLS VPN route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute.

- *length:* the length of the IP address prefix of the MPLS VPN route. This is the IP address prefix length as specified in the Network Layer Reachability Information field.

- peerIpAddr: the IP address prefix of the BGP peer that the MPLS VPN route has been learned from.

This component is only applicable to the *Router* component or a virtual router whose *vpnMode* attribute is set to ***carrier***.

Mib: Bgp

Common Verbs:
Help
List
Display
LOCK
Unlock

GROUP Rtr Vrf Bgp MvRib **Operational (Oper)**

Properties: Operational

Description: This group contains the operational attributes of the *BgpMplsRibEntry* component.

Mib: Bgp

ATTRIBUTE Rtr Vrf Bgp MvRib **serviceLabel (sl)**

Access: Read only

Description: This attribute indicates the service label (the inner label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node and distributed together with the routing information toward the remote end PE. The service label is then used by the remote PE node to encapsulate traffic of the same VPN to the local PE node. When the local PE node processes a received packet which has the service label at the top of the stack, the PE pops the stack, and sends the packet to the Customer Edge (CE) node from which the route leads. (See also transportLabel attribute description.)

Mib: Bgp

Values: Decimal (0..1048575)

Default: No default

ATTRIBUTE Rtr Vrf Bgp MvRib **transportLabel (tl)**

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Access	Read only
Description	This attribute indicates the transport label (the outer label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node. The transport label identifies the MPLS tunnel (Labeled Switched Path) used to transport the service label encapsulated VPN traffic, between two PE nodes, through the backbone. The transport label is applied on top of the service label at the source PE node, and used to direct the VPN traffic (travelling through the network core) to the destination PE. At the destination PE node the transport label is stripped, leaving the service label encapsulated packet to be processed and forwarded to a CE node based on the service label. A value of ***awaitingLabel*** indicates the MPLS tunnel is currently not available and waiting to be established. A value of ***notApplicable*** indicates this is a local route and hence doesn't have a transport label.
Mib	Bgp
Values	Decimal (0..1048575) awaitingLabel notApplicable
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **reachable (reach)**

Access	Read only
Description	This attribute indicates whether a route is currently reachable through an LSP tunnel.
Mib	Bgp
Values	true false
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **bgpNextHop (bgpNh)**

Access	Read only
Description	This attribute indicates the bgp next hop IP address that should be used to reach the destination address prefix.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **origin**

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.

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Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **localPreference (locPrf)**

Access	Read only
Description	This attribute indicates the LOCAL_PREFERENCE path attribute of the route. The LOCAL_PREFERENCE path attribute is used by a BGP speaker to inform other BGP speakers in its own autonomous system of the originating speaker's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **asPath**

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attributes lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.

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Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib **siteOfOrigin (soo)**

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

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ATTRIBUTE Rtr Vrf Bgp MvRib outgoingInterface (outIf)

Access	Read only
Description	This attribute indicates the local interface IP address for the *Rtr If LdpIf* on which the active outgoing LSP connection for the *bgpNextHop* is programmed. This attribute is filterable for the route entries learned from the *Rtr Vrf* on the same Provider Edge(PE) node.That is,local entries whose peer addresses are equal to ***0.0.0.0*** are filtered.
Mib	Bgp
Values	IP address
Default	No default

COMPONENT Rtr Vrf Bgp Ipv4LabelRibEntry (LRib)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Rtr Vrf Bgp LRib Operational (Oper)
Scope	Application
Description	*Rtr/<string> Bgp ipv4LabelRibEntry/<prefix>,<length>,<peer>* The *ipv4LabelRibEntry* component represents a single entry in the routing information database which maintains the ipv4 labelled BGP routes learned both locally and remotely from the BGP peers. - *prefix*: the destination IP address prefix of the ipv4 labelled BGP route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *length*: the length of the IP address prefix of the ipv4 labelled BGP route. This is the IP address prefix length as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *peer*: the IP address of the BGP peer from which the ipv4 labelled BGP route was learned. This component is only applicable to the *Bgp* component whose *Bgp Peer Descriptor addressFamily* attribute is set to ***ipv4Label***.
Mib	Bgp
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp LRib Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes of the *ipv4LabelRibEntry* component.
Mib	Bgp

ATTRIBUTE Rtr Vrf Bgp LRib **nextHop (nh)**

Access	Read only
Description	This attribute indicates the IP address of the next hop that should be used to reach the destination address.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **inLabel (il)**

Access	Read only
Description	This attribute indicates the label (if any) assigned by this Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **outLabel (ol)**

Access	Read only
Description	This attribute indicates the label (if any) assigned by the next hop Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **origin**

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

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ATTRIBUTE Rtr Vrf Bgp LRib **asPath**

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attribute lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **aggregatorAddr**

Access	Read only

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Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib **siteOfOrigin (soo)**

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

COMPONENT Rtr Vrf **RouteDistinguisher (Rd)**

Instance	String (3..21, RFC2547RdRtSyntax)
Scope	Application
Description	*Rtr/<string> Vrf/<string> RouteDistinguisher/<admin>:n* The route distinguisher is used to create distinct routes to a common IPv4 address prefix. An IPv4 MPLS VPN (RFC2547) address consists of a route distinguisher and a IPv4 prefix. The route distinguisher value consists of an administrative part and an assigned number part. A route distinguisher can have two different formats as follows: **Type 0 format**: administrative field contains a 2 byte autonomous system number assigned by the operator and the assigned number field contains a 4 byte number also assigned by the operator. The two fields are separated by a colon. (e.g. as:number) **Type 1 format**: administrative field contains a 4 byte IPv4 address assigned by the operator and the assigned number field contains a 2 byte number also assigned by the operator. The two fields are separated by a colon. (e.g. IPAddr:number)

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Refer to RFC 2547 for further details regarding the route distinguisher.

There must be one and only one route distinguisher defined for the Vrf.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT Rtr Vrf RouteTarget (Rt)

Instance: String (3..21, RFC2547RdRtSyntax)

Groups: GROUP Rtr Vrf Rt Provisioned (Prov)

Scope: Application

Description: *Rtr/<string> Vrf/<string> RouteTarget/<admin>:n*
A route target is a form of policy which identifies a set of sites within a Virtual Private Network. They are used to control the distribution of IPv4 MPLS VPN (RFC2547) routes. Each instance of this component defines a VRF route target. 'Export' route targets are attached to a route received from a locally attached CE and advertised to other Provider Edge routers. 'Import' route targets are used by the Provider Edge router to determine whether a route received from another Provider Edge router could be installed in the VRF's routing table associated with the locally attached CE.

The route target value consists of an administrative part and an assigned number part. A route distinguisher can have two different formats as follows:
Type 0 format: administrative field contains a 2 byte autonomous system number assigned by the operator and the assigned number field contains a 4 byte number also assigned by the operator. The two fields are separated by a colon. (e.g. as:number)
Type 1 format: administrative field contains a 4 byte IPv4 address assigned by the operator and the assigned number field contains a 2 byte number also assigned by the operator. The two fields are separated by a colon. (e.g. IPAddr:number)

Refer to RFC 2547 for further details regarding route targets.

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A Route Target can be defined as being either an import route target, and export route target, or both an import and an export route target.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf Rt Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *RouteTarget* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Rt mode

Access: Read and write

Description: This attribute specifies the mode of the route target. If the value is ***both***, the route target becomes both the import and export route targets.

Mib: no_mib

Values:
both
import
export

Default: both

COMPONENT Rtr Vrf ExportPolicy (Export)

Instance: Decimal (0..65535)

Groups: GROUP Rtr Vrf Export Provisioned (Prov)

Scope: Application

Description: *Rtr/<string> Vrf/<string> ExportPolicy/n*
Each instance of this component defines a VRF export policy. A VRF export policy is used to decide whether locally learned routing information is to be sent or blocked.

If no export policy is provisioned, *Vrf* exports all routes into the IBGP routing database of the associated *Rtr*, except those learned from IBGP. If multiple export policies are provisioned, the policy with the most specific match to the route is applied.

Example 1:
Two export policies are defined:

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Rtr/0 vrf/0 export/1, *protocol* = ***all,*** *advertiseStatus* = ***send***
Rtr/0 vrf/0 export/2, *protocol* = ***rip***, *advertiseStatus* = ***block***
This example specifies that *Vrf* should export all routes in this *Vrf*'s routing table, except routes learned from RIP.

Example 2:
Two export policies are defined:
Rtr/0 vrf/0 export/2, *protocol* = ***all***, *advertiseStatus* = ***send***
Rtr/0 vrf/0 export/3, protocol = ***rip***, *advertiseStatus* = ***block***
Rtr/0 vrf/0 export/3 network/1, *prefix* = ***47.0.0.0***, *length* = ***8***
Vrf willl export all routes in this *Vrf*'s routing table except routes learned from RIP which match the network address prefix 47.0.0.0/8.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Vrf Export Network (Net)

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf Export Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes for the *Export* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Export protocol

Access: Read and write

Description: This attribute specifies which protocol the export policy applies to. If the value is ***all***, the export policy is applied to routes from all protocols in the IP routing table.

Mib: no_mib

Values:
all
rip
ospfInternal
ospfExternal
staticLocal
staticRemote
bgpExternal

Default: all

ATTRIBUTE Rtr Vrf Export advertiseStatus (advertise)

Access: Read and write

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Description	This attribute specifies whether routing data which matches the criteria for this policy is exported.
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Vrf Export localPreference (locPrf)

Access	Read and write
Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes advertised to the remote Provider Edge (PE) node. A value of ***0*** means that the default local preference value, taken from the *Router Bgp defaultLocalPreference*, is used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Export asPathExpression (asExpr)

Access	Read and write
Description	This attribute specifies a pattern of autonomous system (AS) numbers, as one of the matching criteria, that is used by this *ExportPolicy* to match a route's AS Path Attribute before the route is exported. Note that AS numbers listed in AS Path Attribute are in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS numbers separated by a space which makes up an AS path. The following characters have a special meaning: '.' - Matches any AS number. '^n' - Matches the first AS number (n) in the AS path, or in other words, matches the last AS number (n) traversed in the AS path. 'n$' - Matches the last AS number (n) in the AS path, or in other words, matches the first AS number (n) traversed in the AS path. '[n1... n2]' - Matches any AS number that appears in the set of n1... n2. 'n1 - n2' - Matches any AS number that appears in the range of n1 to n2. '()' - Is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a

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set, range or AS number.
The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the AS paths that are not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS paths that are matched by x and matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS paths that are matched by x or matched by y.
For example: In the AS path "5 4 3 2 1", 1 is the origin AS number, and the AS path would be matched by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expressions imply a match to all AS paths.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Export communityExpression (comExpr)

Access	Read and write
Description	This attribute specifies a pattern of Community numbers, as one of the matching criteria, that is used by this *ExportPolicy* to match a route's Community Path Attribute before the route is exported. It uses a subset of regular expressions that are described in RFC 2280. The basic syntax of a regular expression is a list of Community numbers separated by a space which makes up a Community. The following characters have a special meaning: '[n1... n2]' - Matches any Community number that appears in the set of n1... n2. 'n1 - n2' - Matches any Community number that appears in the range of n1 to n2. '()' - Is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or Community number. The following logical operators are evaluated in descending order: 'NOT' - Given a regular expression x, NOT x matches the Communitys that are not matched by x. 'AND'- Given two regular expressions x and y, x AND y

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matches the intersection of the Communitys that are matched by x and matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the Communitys that are matched by x or matched by y.
For example: In the Community "1 2 3 4 5", it would be matched by any one of the following regular expressions:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expressions imply a match to all Communitys.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Export expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the *ExportPolicy* which uses the keys *asPathExpression* and *communityExpression*. This attribute is ignored if attributes *asPathExpression* and *communityExpression* are both empty. This attribute is used to break a tie when expression attributes of two *ExportPolicy* instances match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	no_mib
Values	Decimal (0..255)
Default	128

COMPONENT Rtr Vrf Export Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Export Net Provisioned (Prov)
Scope	Application
Description	*Rtr/<string> Vrf/<string> Export/n Network/n* Each *Network* component instance specifies a destination network address prefix that this VRF export policy applies to.

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If no *Network* component is provisioned under the *ExportPolicy* component, the policy applies to all destination network addresses.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Export Net prefix

Access	Read and write
Description	This attribute specifies the network address prefix. The prefix length is specified by the *length* attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Export Net length

Access	Read and write
Description	This attribute specifies the length of the network address prefix. The prefix is specified by the *prefix* attribute.
Mib	no_mib
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Rtr Vrf ServiceLabelUsage (Slu)

Instance	Decimal (0..15)
Groups	GROUP Rtr Vrf Slu Operational (Oper)
Scope	Application
Description	*Rtr/<string> Vrf/<string> slu/*<lpNum> The *VrfServiceLabelUsage* component represents a single entry of the

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Vro and SL resource usage information database.

The instance value of this component has the following meaning:
- *lpNumber:* a decimal number identifies the lp number of the card on which the resources are allocated.

This component is only applicable to the *Vrf component*.

Mib no_mib

Common Verbs
Help
List
Display

GROUP Rtr Vrf Slu Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *VrfServiceLabelUsage* component.

Mib no_mib

ATTRIBUTE Rtr Vrf Slu serviceLabelInstalled (sli)

Access Read only

Description This attribute indicates the number of the service label distributed from remote Provider Edges (PE) and installed on the access card with <lpNumber> of this VRF.

Mib no_mib

Values Decimal (0..8000)

Default No default

ATTRIBUTE Rtr Vrf Slu vroInstalled (vroi)

Access Read only

Description This attribute indicates the number of VROs installed to RFC2547 datapaths on the access card with <lpNumber> of this VRF.

Mib no_mib

Values Decimal (0..8000)

Default No default

ATTRIBUTE Rtr Vrf Slu vroInstalledPercentage (vroip)

Access Read only

Description This attribute indicates the percentage of the vro used by the datapaths on the access card with <lpNumber> of this VRF.

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Mib	no_mib
Values	Decimal (0..100)
Default	No default

ATTRIBUTE Rtr Vrf Slu forwardingMode (fwdm)

Access	Read: All Write: All
Description	This attribute indicates the forwarding mode of the datapaths on the access card with <lpNumber> of this VRF. The attribute can be set operationally. It should be set according to the VRO resource and the time requirement of the data flows. When it is set to 'sw' mode, user data will be forwarded in software datapath on the access LP of the VRF. When it is set to 'hw' mode, user data will be forwarded in hardware datapath, but if there is no enough VRO resource on the LP, the data may be forwarded in software datapath later on.
Mib	no_mib
Values	hw sw
Default	No default

COMPONENT Rtr Vrf ForwardTable (Fwd)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..31)] gateway (gateway) [IP address]
Groups	GROUP Rtr Vrf Fwd Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address>* *Rtr/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* *Rtr/<string> Vrf/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* This component contains the information to forward data.This table holds the best route information sent from Routing table.
Mib	no_mib
Common Verbs	Help List Display

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GROUP Rtr Vrf Fwd Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the Forward Table.
Mib	no_mib

ATTRIBUTE Rtr Vrf Fwd ifIndex

Access	Read only
Description	This attribute specifies the SNMP index associated with the protocol port or interface represented by the attribute *protocolPortName* or *interfaceName,* which identifies the local interface through which the next hop of this route should be reached.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rtr Vrf Fwd type

Access	Read only
Description	This attribute specifies the type of route. Note that ***localInterface*** refers to a route for which the next hop is the final destination; ***remoteDestination*** refers to a route for which the next hop is not the final destination.
Mib	no_mib
Values	notDefined invalid localInterface remoteDestination
Default	No default

ATTRIBUTE Rtr Vrf Fwd protocol

Access	Read only
Description	This Attribute identifies the routing mechanism by which this route was learned.
Mib	no_mib
Values	other local netmgmt icmp egp ggp hello

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rip
isIs
esIs
ciscoIgrp
bbnSpfIgp
ospf
bgp
idpr
mpls
mbgp
bgpMplsInternal
ebgpLabel

Default — No default

ATTRIBUTE Rtr Vrf Fwd age

Access — Read only

Description — This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.

Mib — no_mib

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Rtr Vrf Fwd protocolPortName (pPName)

Access — Read only

Description — For a *Vr*, this attribute indicates the name of the protocol port by which the next hop of this route should be reached.

Mib — no_mib

Values — The name of the component

Default — No default

ATTRIBUTE Rtr Vrf Fwd nextHopAs

Access — Read only

Description — This attribute specifies the Autonomous System number of the Next Hop. If unknown or not relevant to the protocol indicated by the attribute *protocol*, the value should be zero.

Mib — no_mib

Values — Decimal (0..429467295)

Default — No default

ATTRIBUTE Rtr Vrf Fwd metric

Access — Read only

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Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the attribute *protocol*. If this metric is not used, its value should be set to -1.
Mib	no_mib
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Rtr Vrf Fwd **interfaceName**

Access	Read only
Description	For a *Rtr* or *Rtr Vrf*, this attribute indicates the name of the interface by which the next hop of this route should be reached.
Mib	no_mib
Values	The name of the component
Default	No default

COMPONENT Rtr Vrf **Icmp**

Groups	GROUP Rtr Vrf Icmp Statistics (Stats)
Scope	Application
Description	Vr/<string> Ip Icmp Rtr/<string> Icmp Rtr/<string> Vrf/<string> Icmp The Icmp component controls all ICMP related attributes available to this router.
Mib	no_mib
Common Verbs	Help List Display

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VERB Ping **Rtr Vrf Icmp**

Impact: Passive

Description:

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-cos(0..3)][-dscp(0..63)][-tos(0..FF)][-stop] Vr/<string> Ip Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Vrf/<string> Icmp

The *Ping* verb is intended for testing network connections at the IP level. The verb invokes ICMP to issue an echo request to the host specified by the *ipAddr* option and waits for its echo response.

If the *Ping* is successful, it outputs the following information:
- number of bytes received
- IP address of the responding host
- ICMP sequence number of the received packet
- elaspsed time from sending of the *Ping* to receiving of the response

The following options are supported:

-srcAddr is used to define the source IP address of the IP ICMP echo request packet. When not specified or specified as 0.0.0.0, the outgoing IP *Interface* or *LogicalIf* address is used as the source address.

-netmask when specified is used to define a range of IP host addresses to which echo requests are sent to (ping sweep). The netmask given must be contiguous. The *-retry* option is ignored if used together with this option. By default, the value is set to 255.255.255.255.

-*size* is used to define the size of the IP packet to be echoed including the IP and ICMP header. The default is 64 bytes. The maximum size is 4096.

-*retry* is used to define the number of times an echo request is resent if no echo reply is received. Default is 0.

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-traceRoute is used to find the route the node would use to reach a particular destination IP address at the moment when the *Ping* command is executed with this option. The *-netmask*, *-size, -retry* and *-continuous* option are ignored if used together with this option. By default, the *traceRoute* option is not used.

-continuous causes ICMP to issue echo requests once per second to the host or hosts specified by the *-ipAddr* and the *-netmask* option. For every echo response ICMP receives, one line of output is printed. No output is produced if there is no response. The *-stop* option is used to stop ICMP from sending the echo requests. By default, the *-continuous* option is not used.

-dontFragment causes ICMP to set the Don't Fragment flag of the IP packet that carries the echo request. This is useful in determining path MTU. By default, the *dontFragment* option is not used.

-noOp causes a No Operation option to be inserted into the IP header of the packet that carries the echo request. By default, the *noOp* option is not used.

-recordRoute causes the route of the IP packet that carries the echo request to be recorded in the IP header. Up to 9 routes can be recorded. If the number of routes to record is not specified, 5 routes are recorded by default.

-timeStamp sets the Time Stamp option in the IP header of the packet that carries the echo request. The format used for the time stamps consists of both an IP Adress and a time field. The default number of time stamps is 3. A maximum of 4 time stamps can be recorded.

-looseSrcRoute is used to specify a loose set of routes for the packet carrying the echo request to go through along the path to the destination. Up to 9 routes can be specified.

-strictSrcRoute is used to specify a strict set of routes for the packet carrying the echo request to go through to get to the destination. Up to 9 routes can be specified.

-cos causes the echo request packet to be forwarded with the given Class Of Service. Default is 0. This option is not supported on a Router component, a VpnRouteForwarder component, nor on a VirtualRouter component that has a DifferentiatedServicesDomain subcomponent.

-dscp causes the six most significant bits of Type Of Service (TOS) byte of the echo request packet to be set to the given value. These six bits are know as the Differentiated Services Code Point (DSCP). Default is 0. This option cannot be used together with the *-tos* option.

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-tos causes the Type Of Service (TOS) byte of the echo request packet to be set to the given value. Default is 0. This option cannot be used together with the *-dscp* option.

-stop is used to stop ICMP from sending echo requests due to a previously issued *Ping* command with the *-continuous* and/or *-netmask* option. Under any other situation, the *Ping* command with the *-stop* option has no effect.

Note: Only one *Ping* command per *VirtualRouter* or *Router* or *Router Vrf* is allowed to be in progress at any one time. Any in progress *Ping* command must be stopped before a new *Ping* command can be issued.

GROUP Rtr Vrf Icmp Statistics (Stats)

Properties	Operational
Description	This group holds statistics for ICMP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Icmp inMsgs

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway. This number includes *inErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inErrors

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway but determined as having ICMP specific errors such as bad ICMP checksum or bad length. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inDestUnreachs

Access	Read only

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Description	This attribute counts the ICMP destination unreachable messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Icmp inRedirects

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Access	Read only
Description	This attribute counts the ICMP redirect messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Rtr Vrf Icmp **inTimestampReps**

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp **inAddrMasks**

Access	Read only
Description	This attribute counts the ICMP address mask request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp **inAddrMaskReps**

Access	Read only
Description	This attribute counts the ICMP address mask reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp **outMsgs**

Access	Read only
Description	This attribute counts the ICMP messages that this gateway attempted to send. This number includes *outErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Rtr Vrf Icmp outErrors

Access	Read only
Description	This attribute counts the ICMP messages that this gateway did not send due to problems discovered within ICMP such as a lack of buffers. *outErrors* does not include errors discovered outside the ICMP layer such as the inability of IP to route the resultant datagram. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply message sent by this gateway. The counter wraps to zero when it exceeds its maximum value.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages sent by this gateway.

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The counter wraps to zero when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

COMPONENT Rtr Vrf Ospf (Ospf)

Groups
GROUP Rtr Vrf Ospf Provisioned (Prov)
GROUP Rtr Vrf Ospf Operational (Oper)
GROUP Rtr Vrf Ospf OsiState (State)
GROUP Rtr Vrf Ospf OperationalStatus (OperStatus)

Scope Application

Description
Vr/<string> Ip Ospf
Rtr/<string> Ospf
Rtr/<string> Vrf/<string> Ospf
This component is configured to control the Open Shortest Path First IP routing protocol.

Mib no_mib

Opt. Subcomp.
COMPONENT Rtr Vrf Ospf AreaEntry (Area)
COMPONENT Rtr Vrf Ospf StubAreaEntry (Stub)
COMPONENT Rtr Vrf Ospf AreaAggregateEntry (Aggregate)
COMPONENT Rtr Vrf Ospf HostEntry (Host)
COMPONENT Rtr Vrf Ospf VirtIfEntry (VirtIf)
COMPONENT Rtr Vrf Ospf Export

Dyn. Subcomp.
COMPONENT Rtr Vrf Ospf VirtNbrEntry (VirtNbr)
COMPONENT Rtr Vrf Ospf NeighborEntry (Nbr)
COMPONENT Rtr Vrf Ospf LsdbEntry (Lsdb)
COMPONENT Rtr Vrf Ospf ExtLsdbEntry (ExtLsdb)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr Vrf Ospf Provisioned (Prov)

Properties Provisioned

Description This group of attributes are used to configure the OSPF component.

Mib no_mib

ATTRIBUTE Rtr Vrf Ospf routerId (id)

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Access	Read and write
Description	This attribute is an Ip Address that uniquely identifies the router in the autonomous system.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf snmpAdminStatus

Access	Read and write
Description	The administrative status of the OSPF Component in this routing component (*Vr*, *Rtr* or *Vrf*).
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf Ospf asBdrRtrStatus (asBr)

Access	Read and write
Description	This attribute is a flag to note whether this router is an autonomous system border router. If this router is configured to export any routes learned from other than OSPF-internal protocol, this attribute should be configured as autonomous system border router.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Ospf tosSupport

Access	Read and write
Description	The router's support for type-of-service routing. Only one value will be allowed. This is a deviation from supporting the MIB.
Mib	no_mib
Values	false
Default	false

ATTRIBUTE Rtr Vrf Ospf multicastForward

Access	Read and write

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Description	A bit mask indicating the limits on Network Layer Multicast (class D) forwarding. It is represented as a sum of the following: if intra-Area forwarding is permitted, 1; else 0 if inter-Area forwarding is permitted 2; else 0 if inter-AS forwarding is permitted, 4; else 0 Only the value of 0 is being supported and this is a MIB deviation.
Mib	no_mib
Values	Decimal (0..0)
Default	0

ATTRIBUTE Rtr Vrf Ospf migrateRip

Access	Read and write
Description	This Attribute sets the preference level of OSPF-internal routes to be less preferred than RIP. This attribute should only be used when starting a migration of a network from RIP to OSPF. When ready to cut over to OSPF, set this attribute to a value of ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with the *migrateRip* attribute set to a value of ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Ospf generateDefaultRouteMetric (genDefaultMetric)

Access	Read and write
Description	If this router is configured as an autonomous system border router, then this attribute causes the default route to be generated with a metric value equal to *generateDefaultRouteMetric* value. This route is put in the OSPF update along with the normal update routes when updates are sent to the neighbors. No default route will be generated if the value is 0.
Mib	no_mib
Values	Signed (-1..65535)
Default	0

ATTRIBUTE Rtr Vrf Ospf redistributeIbgp (ribgp)

Access	Read and write

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Description	This attribute specifies whether the export policies of this *Ospf* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all***. If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false***, routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Ospf estimatedNumberOfInternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes in the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	no_mib
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Rtr Vrf Ospf estimatedNumberOfExternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes external to the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	no_mib
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Rtr Vrf Ospf estimatedNumberOfAreas

Access	Read and write
Description	This attribute specifies the average estimated number of areas in the autonomous system that this OSPF instance will have to keep track of.
Mib	no_mib
Values	Decimal (0..65535)

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Default	2

ATTRIBUTE Rtr Vrf Ospf **estimatedNumberOfInterfacesPerArea**

Access	Read and write
Description	This attribute specifies the average estimated number of interfaces in a given area that this OSPF instance will have to keep track of.
Mib	no_mib
Values	Decimal (0..65535)
Default	10

ATTRIBUTE Rtr Vrf Ospf **estimatedNumberOfNeighborsPerInterface**

Access	Read and write
Description	This attribute specifies the average estimated number of neighbors that a given interface will have on it in this OSPF interface.
Mib	no_mib
Values	Decimal (0..65535)
Default	3

ATTRIBUTE Rtr Vrf Ospf **defaultOspfIntRtePreference (ospfIntPref)**

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF internal routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	30

ATTRIBUTE Rtr Vrf Ospf **defaultOspfExt1RtePreference (ospfExt1Pref)**

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 1 routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	80

ATTRIBUTE Rtr Vrf Ospf **defaultOspfExt2RtePreference (ospfExt2Pref)**

Access	Read and write

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Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 2 routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	120

ATTRIBUTE Rtr Vrf Ospf **opaqueCapability (opcap)**

Access	Read and write
Description	This attribute specifies whether the OSPF instance is allowed to participate in flooding Opaque LSAs. Such LSAs are also stored in the InwOspfLsdbEntry. Applications, such as MPLS Traffic Engineering, use this mechanism to flood their information throughout a network. Of the three Opaque LSA types (9,10,11), only type 10 LSAs (area scope) are supported.The OSPF instance remains fully inter-operable with non-opaque-capable neighbors. Opaque capability is not fully supported. When the ***mplsTeEmulation*** feature is provisioned, setting this attribute to ***true*** activates hooks to emulate TE capability by flooding hard-coded type 10 TE LSAs to opaque-capable neighbors. This emulated TE functionality is not standards compliant and is strictly provided for MPLS RSVP-TE inter-operability with vendors that are dependent on MPLS TE to establish LSPs.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Ospf **spareInstance (spInst)**

Access	Read and write
Description	This attribute specifies whether to maintain a copy of the link state database on the standby card. When this attribute is set to ***disable***, OSPF does not maintain a copy of the link state database. If the *virtualRouterProcessor* attribute of this *VirtualRouter* is set to ***Lp/0***, then the following conditions must both be true for a copy of the link-state database to be maintained on the standby CP: - This attribute must be set to ***enable***, and - The *Shelf cpEquipmentProtection* attribute must be set to ***hot***.
Mib	no_mib
Values	enable disable

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Default	disable

ATTRIBUTE Rtr Vrf Ospf spfHoldTime (spfTime)

Access	Read and write
Description	This attribute specifies the minimum time interval between SPF calculations. If a link state change in the autonomous system is detected and the time since the last SPF calculation is greater than *spfHoldTime*, then the SPF calculation starts immediately. Otherwise, the SPF calculation waits until a time of at least *spfHoldTime* has elapsed since the previous SPF calculation. Setting this attribute to a lower value decreases convergence time in the OSPF autonomous system, but uses more CPU resource more frequently. Setting this attribute to a higher value increases convergence time but provides for a more scalable node configuration, especially if there are many *Ospf* components configured on the node.
Mib	no_mib
Values	Decimal (1..60)
Units	seconds
Default	1

ATTRIBUTE Rtr Vrf Ospf alarmGeneration (alarms)

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Ospf* instance. A value of ***all*** specifies that all OSPF alarms are made visible. A value of ***normal*** specifies that all existing OSPF alarms are made visible, except *Ospf NeighborEntry* state change alarms. A value of ***none*** specifies that no OSPF alarms are made visible. It is recommended that *VirtualRouter* components with the *vpnMode* attribute set to ***carrier*** should have the *alarmGeneration* attribute set to ***all***. *VirtualRouter* components with the *vpnMode* attribute set to ***customer*** should have the *alarmGeneration* attribute set to either ***normal*** or ***none***, for scalability reasons. Similarly, the *alarmGeneration* attribute should be set to ***all*** for *Router*. The *alarmGeneration* attribute should be set to either ***normal*** or ***none*** for *Vrf* for scalability reasons.
Mib	no_mib
Values	none normal all
Default	all

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ATTRIBUTE Rtr Vrf Ospf **ecmpStatus**

Access	Read and write
Description	This attribute specifies whether the Equal Cost Multi-Path (ECMP) functionality is enabled or not in the network meaning that the number of next hops for one route learned through OSPF depend on the value of *ecmpStatus*. If *ecmpStatus* is ***enabled,*** a maximum of three next hops are kept for one route. If it is ***disabled***, one next hop is kept for that route.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf Ospf **attachAsTag (asTag)**

Access	Read and write
Description	This attribute specifies the treatment of the OSPF tag when routes are redistributed between BGP and OSPF. If this attribute is set to ***enabled***, an AS number is encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is checked against the AS number to avoid routing loops. If this attribute is set to ***disabled***, an AS number is not encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is not checked against the AS number.
Mib	no_mib
Values	disabled enabled
Default	enabled

GROUP Rtr Vrf Ospf **Operational (Oper)**

Properties	Operational
Description	These group of attributes identifies the operational attributes for this OSPF Component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf **versionNumber (ver)**

Access	Read only
Description	The Current Version number of the OSPF Protocol. (2).
Mib	no_mib

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Values	Decimal (2..2)
Default	2

ATTRIBUTE Rtr Vrf Ospf **areaBdrRtrStatus**

Access	Read only
Description	This attribute is used to specify whether this router is configured as an area border router.
Mib	no_mib
Values	true false
Default	No default

ATTRIBUTE Rtr Vrf Ospf **externLsaCount**

Access	Read only
Description	The number of external (LS type 5) link-state advertisements in the link-state database.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Ospf **externLsaChecksumSum**

Access	Read only
Description	The 32-bit unsigned sum of the LS checksums of the external link-state database. This sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf **originateNewLsas**

Access	Read only
Description	The number of new link-state advertisements that have been originated. This number is incremented each time the router originates a new LSA.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Rtr Vrf Ospf **rxNewLsas**

Access	Read only
Description	The number of link-state advertisements received determined to be new instantiations. This number does not include newer instantiations of self-originated link-state advertisements.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Vrf Ospf **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Ospf **operationalState (osiOper)**

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Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Ospf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Ospf OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates

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	the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Vrf Ospf AreaEntry (Area)

Instance	IP address
Groups	GROUP Rtr Vrf Ospf Area Provisioned (Prov) GROUP Rtr Vrf Ospf Area Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf AreaEntry/<Ip Address>* *Rtr/<string> Ospf AreaEntry/<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaEntry/<Ip Address>* This component contains the information about various areas that the router is connected to.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Area Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisionable attributes for the AreaEntry Component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Area authType

Access	Read and write
Description	The authentication type specified for this area.
Mib	no_mib
Values	none simplePassword md5
Default	none

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ATTRIBUTE Rtr Vrf Ospf Area **importAsExtern**

Access	Read and write
Description	The area's support for importing AS external link-state advertisements. For backbone area (that is, areaId 0.0.0.0), this attribute must be set to ***importExternal***.
Mib	no_mib
Values	importExternal (external) importNoExternal (noExternal) importNssa (nssa)
Default	importExternal

ATTRIBUTE Rtr Vrf Ospf Area **areaSummary**

Access	Read and write
Description	This variable controls the import of summary LSAs into stub areas. If it is ***noAreaSummary***, the router will neither originate nor propagate summary LSAs into the stub areas. It will rely entirely on its default route. If it is ***sendAreaSummary***, the router will both summarize and propagate summary LSAs.
Mib	no_mib
Values	noAreaSummary sendAreaSummary
Default	noAreaSummary

GROUP Rtr Vrf Ospf Area **Operational (Oper)**

Properties	Operational
Description	This group of attributes describes the Operational set of attributes for the AreaEntry component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Area **spfRuns**

Access	Read only
Description	The number of times that the intra-area route table has been calculated using this area's link-state database since the protocol became operational.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Area **areaBdrRtrCount**

Access	Read only

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Description	The total number of area border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Area **asBdrRtrCount**

Access	Read only
Description	The total number of Autonomous System border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Area **lsaCount**

Access	Read only
Description	The total number of link-state advertisements in this area's link-state database, excluding AS External LSAs.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Area **areaLsaCksumSum**

Access	Read only
Description	The 32-bit unsigned sum of the link-state advertisement's LS checksums contained in this area's link-state database. This sum excludes external (LS type 5) link-state advertisements. The sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Ospf **StubAreaEntry (Stub)**

Instance	areaId [IP address] tos [Decimal (0..0)]
Groups	GROUP Rtr Vrf Ospf Stub Provisioned (Prov)
Scope	Application

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Description	*Vr/<string> Ip Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* This component describes metrics that a default area border router will advertise into a stub area.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Stub Provisioned (Prov)

Properties	Provisioned
Description	These set of attributes explain the provisionable group for the *StubAreaEntry*.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Stub metric (metric)

Access	Read and write
Description	The metric value applied at the indicated type of service.
Mib	no_mib
Values	Decimal (1..4294967295)
Default	1

ATTRIBUTE Rtr Vrf Ospf Stub metricType

Access	Read and write
Description	This type of the metric advertised as a default route.
Mib	no_mib
Values	ospfMetric comparableCost nonComparable
Default	ospfMetric

ATTRIBUTE Rtr Vrf Ospf Stub advertiseDefault

Access	Read and write
Description	This attribute determines whether or not the default routing information will be advertised, depending on other criterion. Setting this value to ***no*** can prevent advertising default routing information.

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If the value of the attribute is set to ***yes***, then the value of the attribute *importAsExtern* for that particular *AreaEntry* should be set to ***importNssa***.

Mib no_mib

Values yes
no

Default yes

COMPONENT Rtr Vrf Ospf AreaAggregateEntry (Aggregate)

Instance areaId [IP address]
lsdbType [summaryLink
nssaExternalLink]
aggregateNet [IP address]
aggregateMask [IP address]

Groups GROUP Rtr Vrf Ospf Aggregate Provisioned (Prov)

Scope Application

Description *Vr/<string> Ip Ospf AreaAggregateEntry/<Ip Address>,<enum>, <Ip Address>,<Ip Address>*
Rtr/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>, <Ip Address>,<Ip Address>
Rtr/<string> Vrf/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,<Ip Address>,<Ip Address>
This table entry replaces the Area Summary table from RFC1253 and is used as an extension for CIDR support.

Mib no_mib

Common Verbs Help
List
Display
Add
DELete

GROUP Rtr Vrf Ospf Aggregate Provisioned (Prov)

Properties Provisioned

Description Identifies a group of provisionable attributes.

Mib no_mib

ATTRIBUTE Rtr Vrf Ospf Aggregate effect

Access Read and write

Description This attribute determines whether or not the routing information will be advertised, depending on other criterion. Setting this value to ***doNotAdvertiseMatching*** can prevent advertising routing information for the address and mask values specified as the indices for this entry.

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Mib	no_mib
Values	advertiseMatching doNotAdvertiseMatching invalid
Default	advertiseMatching

COMPONENT Rtr Vrf Ospf HostEntry (Host)

Instance	address [IP address] tos [Decimal (0..0)]
Groups	GROUP Rtr Vrf Ospf Host Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf HostEntry/<Ip Address>,<Decimal>* This component indicates what hosts are directly attached to the router, and what metrics and types of service should be advertised for them. This component is an optional subcomponent of Ospf.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Host Provisioned (Prov)

Properties	Provisioned
Description	Provisionable set of attributes for the Host entry.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Host areaId

Access	Read and write
Description	This is an Ip address for the Host Entry that indicates the area it belongs to.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf Host metric

Access	Read and write

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Description	The metric to be advertised.
Mib	no_mib
Values	Decimal (1..65535)
Default	1

COMPONENT Rtr Vrf Ospf **VirtIfEntry (VirtIf)**

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	GROUP Rtr Vrf Ospf VirtIf Provisioned (Prov) GROUP Rtr Vrf Ospf VirtIf Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* This component describes all the virtual links configured for this OSPF Router.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf Ospf VirtIf Md5KeyId (KeyId)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf VirtIf **Provisioned (Prov)**

Properties	Provisioned
Description	This group of attributes provide provisioning data for the *VirtIfEntry*.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtIf **transitDelay (transDelay)**

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Rtr Vrf Ospf VirtIf **retransInterval (retransInt)**

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Access	Read and write
Description	The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets. This value would be well over the expected round-trip time.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf Ospf VirtIf helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for the virtual neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Rtr Vrf Ospf VirtIf rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router's Hello packets have not been seen before its neighbors declare the router down. This should be some multiple of the Hello interval. This value must be the same for the virtual neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	60

ATTRIBUTE Rtr Vrf Ospf VirtIf authKey

Access	Write only
Description	If authentication type is simple password, the password for this virtual circuit. If the value of the attribute is not set, then this attribute is ignored by the application. If the value of this attribute is set, then the value of the attribute *authType* under this particular *Area* should be set to ***simplePassword***, otherwise the application will ignore this authentication key.

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Mib	no_mib
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Rtr Vrf Ospf VirtIf **authType**

Access	Read and write
Description	The authentication type specified for this *VirtIf*.
Mib	no_mib
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Rtr Vrf Ospf VirtIf **Operational (Oper)**

Properties	Operational
Description	Represents a group of operational attributes for the *VirtIfEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtIf **state (state)**

Access	Read only
Description	The state of the OSPF virtual interface.
Mib	no_mib
Values	down pointToPoint
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtIf **events (events)**

Access	Read only
Description	The number of state changes or error events on the virtual link.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Ospf VirtIf **Md5KeyId (KeyId)**

Instance	Decimal (1..255)
Groups	GROUP Rtr Vrf Ospf VirtIf KeyId Provisioned (Prov) GROUP Rtr Vrf Ospf VirtIf KeyId Operational (Oper)

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Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* This component contains the information about various MD5 Authentication keys.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf VirtIf KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtIf KeyId md5Key (Key)

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	no_mib
Values	String (0..16, ASCII)
Default	""

GROUP Rtr Vrf Ospf VirtIf KeyId Operational (Oper)

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtIf KeyId inUseForGeneration (inUse)

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	no_mib

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Values	true false
Default	false

COMPONENT Rtr Vrf Ospf **Export**

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Ospf Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf Export/n* *Rtr/<string> Ospf Export/n* *Rtr/<string> Vrf/<string> Ospf Export/n* Each instance of this component specifies an OSPF export policy. An OSPF export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as OSPF external routes onto attached OSPF areas of the routing component (*Vr*, *Rtr* or *Vrf*). The *Ospf* component by default advertises all OSPF external routes based on the metric and tag in the IP forwarding table.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf Ospf Export NetworkList (NetList)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Export **Provisioned (Prov)**

Properties	Provisioned
Description	This Group contains all the Provisioned attributes for the Export Component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Export **advertiseStatus (advertise)**

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Vrf Ospf Export **metric (metric)**

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Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *metric* is ignored. The *metric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of -1 indicates that the metric associated with the route in the forwarding table is used.
Mib	no_mib
Values	Signed (-1..16777215)
Default	-1

ATTRIBUTE Rtr Vrf Ospf Export **protocol**

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Ospf* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	no_mib
Values	all egp rip staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

ATTRIBUTE Rtr Vrf Ospf Export **ripInterface (ripIf)**

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of an *Interface* or a *LogicalIf* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address

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Default	0.0.0.0

ATTRIBUTE Rtr Vrf Ospf Export **ripNeighbor (ripNbr)**

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP neighbor of which the routes are learned from. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP neighbor.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Ospf Export **egpAsId (egpAs)**

Access	Read and write
Description	This attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Ospf Export **tag**

Access	Read and write
Description	This attribute specifies the OSPF tag to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *tag* is ignored. The *tag* value is not used to select which routes to block or send, but rather the tag value advertised for the routes. A value of 4294967295 indicates that the tag associated with the route in the forwarding table is used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Vrf Ospf Export **extLsaMetricType**

Access	Read and write

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Description	This attribute specifies the metric type in the OSPF external link state advertisement of the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *extLsaMetricType* is ignored. The *extLsaMetricType* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. The value ***useProtocolDefault*** indicates the metric type is automatically chosen based on the routing protocol which the route was learned from.
Mib	no_mib
Values	useProtocolDefault type1 type2
Default	useProtocolDefault

ATTRIBUTE Rtr Vrf Ospf Export **bgpAsId (bgpAs)**

Access	Read and write
Description	This attribute specifies the BGP AS from which a BGP route is learned from. This key is used only if the *protocol* is ***bgpExternal***. *bgpAsId* of value ***0*** matches all ASs.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Ospf Export **bgpPeerIp (peerIp)**

Access	Read and write
Description	This attribute specifies the BGP peer where the routes were learned from. *bgpPeerIp* of ***0*** matches all BGP peers. This attribute is used as a key when *protocol* is set to ***bgpInternal*** or ***bgpExternal***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Ospf Export **description (desc)**

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export OSPF routes to MCI’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

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COMPONENT Rtr Vrf Ospf Export NetworkList (NetList)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Ospf Export NetList Provisioned (Prov)
Scope	Application
Description	This component identifies a set of attributes when matched determines the export policy applied.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Export NetList Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of provisionable attributes for the *ExportNetworkList* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Export NetList ipAddress

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf Export NetList ipMask (mask)

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	no_mib
Values	IP address
Default	No default

COMPONENT Rtr Vrf Ospf VirtNbrEntry (VirtNbr)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	GROUP Rtr Vrf Ospf VirtNbr Operational (Oper)

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Scope	Application
Description	*Vr/<string> Ip Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* This component describes all of OSPF's Virtual Neighbors.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Ospf VirtNbr **Operational (Oper)**

Properties	Operational
Description	This group identifies a set of operational attributes.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtNbr **nbrIpAddress (addr)**

Access	Read only
Description	Indicates the Ip address this interface this virtual neighbor is using.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr **options**

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 1, if set indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr **state**

Access	Read only
Description	The state of the virtual neighbor relationship.
Mib	no_mib

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Values	down attempt init twoWay exchange exchangeStatrt loading full
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr **events**

Access	Read only
Description	The number of times this virtual link has changed its state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr **lsRetransQlen**

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr **exchangeStatus**

Access	Read only
Description	Indicates the exchange status of the entry in this table.
Mib	no_mib
Values	master slave
Default	No default

COMPONENT Rtr Vrf Ospf **NeighborEntry (Nbr)**

Instance	address [IP address] addressLessIndex [Decimal (0)]
Groups	GROUP Rtr Vrf Ospf Nbr Operational (Oper)
Scope	Application

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Description	*Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* This component is a dynamic subcomponent of OSPF that describes all the OSPF Neighbors.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Ospf Nbr Operational (Oper)

Properties	Operational
Description	This group identifies the operational set of attributes for the *NeighborEntry*.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Nbr rtrId

Access	Read only
Description	An Ip Address that uniquely identifies the neighboring router in the autonomous system.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr priority

Access	Read only

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Description	The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network.
Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	no_mib
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr nbmaNbrStatus

Access	Read only
Description	This attribute describes the status of the entry.

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Mib	no_mib
Values	valid invalid
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr **exchangeStatus**

Access	Read only
Description	Indicates the exchange status for a neighbor entry.
Mib	no_mib
Values	master slave
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr **permanence**

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	no_mib
Values	dynamic permanent
Default	dynamic

ATTRIBUTE Rtr Vrf Ospf Nbr **opaqueCapability (opcap)**

Access	Read only
Description	This attribute displays the Opaque capability of this neighbor.
Mib	no_mib
Values	true false
Default	No default

COMPONENT Rtr Vrf Ospf **LsdbEntry (Lsdb)**

Instance	areaId [IP address] lsdbType [Decimal (1..10)] lsId [IP address] routerId [IP address]
Groups	GROUP Rtr Vrf Ospf Lsdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>,*

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<Ip Address>, <Ip Address>
Rtr/<string> Vrf/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>,
<Ip Address>, <Ip Address>
This dynamic component contains the Link State Advertisements (LSA) from all areas the device is connected to. The supported types are: router-LSA (1), network-LSA (2), network-summary-LSA (3), ASBR-summary-LSA (4), AS-external-LSA (5) Group-membership-LSA (6) NSSA-LSA (7) and opaqueArea-LSA (10).

Mib no_mib

Common Verbs
Help
List
Display

GROUP Rtr Vrf Ospf Lsdb Operational (Oper)

Properties Operational

Description This group describes the Operational set of attributes for the *LsdbEntry*.

Mib no_mib

ATTRIBUTE Rtr Vrf Ospf Lsdb sequence

Access Read only

Description A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.

Mib no_mib

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Rtr Vrf Ospf Lsdb age

Access Read only

Description The age of the Link State Advertisement in seconds.

Mib no_mib

Values Decimal (0..3600)

Units seconds

Default No default

ATTRIBUTE Rtr Vrf Ospf Lsdb checksum

Access Read only

Description The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Lsdb **advertisement**

Access	Read only
Description	The entire LSA including its header.
Mib	no_mib
Values	String (1..65535, Hex)
Default	No default

COMPONENT Rtr Vrf Ospf **ExtLsdbEntry (ExtLsdb)**

Instance	lsdbType [Decimal (1..7)] lsId [IP address] routerId [IP address]
Groups	GROUP Rtr Vrf Ospf ExtLsdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Divertimentos (LSA) from other Autonomous systems. It is identical in format to the *Lsdb*. The purpose is to allow all external LSAs to be displayed together rather than distributed over the different non-stub areas. These types are: AS-external-LSA (5) and NSSA-LSA (7).
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Ospf ExtLsdb **Operational (Oper)**

Properties	Operational
Description	This group describes the operational set of attributes for the *ExtLsdbEntry*.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf ExtLsdb **sequence**

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Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf ExtLsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	no_mib
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Ospf ExtLsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf ExtLsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	no_mib
Values	String (1..36, Hex)
Default	No default

COMPONENT Rtr Vrf PolicerProfile (Policer)

Instance	String (1..20, ASCII)
Groups	GROUP Rtr Vrf Policer Provisioned (Prov)
Scope	Application

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Description

Vr/<string> Ip PolicerProfile/<string>
Rtr/<string> Vrf/<string> PolicerProfile/<string>

This component and its subcomponents represent traffic conditioning rules for metering and policing IP packets received or transmitted at an interface. The rules specify various conditioning actions to be applied to individual packets after they are determined to be in-profile or out-of-profile with respect to various traffic rates and burst sizes.

A *PolicerProfile* component is used to condition inbound or outbound IP traffiic at a *VirtualRouter IpPort* or *VpnRouteForwarder Interface* by setting the *linkToPolicerProfile* attribute of the *IngressServices* or *EgressServices* subcomponent, respectively.

At ingress interfaces the conditioning rules are applied to drop or re-mark the DSCP field of IP packets received at the interface after ingress classification and DSCP marking (if any), prior to VPN encapsulation (if any), and prior to selection of forwarding treatments.

At egress interfaces the conditioning rules are applied to drop or re-mark the DSCP field of IP packets transmitted at the interface, after VPN decapsulation (if any), and prior to the selection of forwarding treatments. Egress classification and DSCP marking with a *DiffServProfile* component is not allowed when a *PolicerProfile* component is used to condition outbound traffic.

See the description of the *DifferentiatedServicesDomain* component and its subcomponents for a explanation of how an IP packet is treated based on the value of the DSCP field in the IP packet header.

Each *PolicerProfile* component must have at least one *Meter* subcomponent.

The *Vr Ip* component cannot have a *PolicerProfile* subcomponent unless the *Vr* has a *DiffServDomain* subcomponent and the *Vr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipPolicing***.

The *Vrf* component cannot have *PolicerProfile* subcomponents unless the *Rtr* or *Vrf* has a *DiffServDomain* subcomponent and the *Rtr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the

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LogicalProcessorType linked to the *LogicalProcessor* includes ***ipPolicing***.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf Policer Meter
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Policer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PolicerProfile* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Policer linkToPolicerUsers (users)

Access	Read and write
Description	This attribute specifies the components that are linked to the *PolicerProfile*. Only *IngressServices* or *EgressServices* subcomponents of the same *VirtualRouter* or *VirtualRouteForwarder* can be linked to the *PolicerProfile*.
Mib	no_mib
List of	Link (Service, linkToPolicerProfile)
List Size	256
Default	No default

COMPONENT Rtr Vrf Policer Meter

Instance	String (1..20, ASCII)
Groups	GROUP Rtr Vrf Policer Meter Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Policer/<string> Meter<string>* *Rtr/<string> Vrf<string> Policer/<string> Meter<string>* This component represents properties of a traffic which will be enforced for the selected traffic stream on an Ip interface. The traffic stream is selected

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by the packet Per Hop Behavior (PHB) and is specified by the *PolicedPhb* subcomponents of the *Meter*.

Mib no_mib

Opt. Subcomp. COMPONENT Rtr Vrf Policer Meter PolicedPhb (Phb)

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Vrf Policer Meter Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes of the *Meter* component.

Mib no_mib

ATTRIBUTE Rtr Vrf Policer Meter committedInformationRate (cir)

Access Read and write

Description This attribute specifies the committed information rate (cir) in bits per second (bits/s). This is the maximum rate at which the network agrees to transfer information under normal conditions. The rate is measured over a time interval that is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*).

The *commitedInformationRate(cir)* attribute must be zero if the *commitedBurstSize(bc)* attribute is zero.

Mib no_mib

Values Decimal (0..600000000)

Units bit/s

Default 64000

ATTRIBUTE Rtr Vrf Policer Meter committedBurstSize (bc)

Access Read and write

Description This attribute specifies the committed burst size in bits. This is the maximum burst size that the network agrees to transfer under normal conditions. The burst size is measured over a time interval that is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*).

The *commitedBurstSize(bc)* attribute must be zero if the *commitedInformationRate(cir)* attribute is zero.

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Mib	no_mib
Values	Decimal (0..600000000)
Units	bits
Default	64000

ATTRIBUTE Rtr Vrf Policer Meter **excessBurstSize (be)**

Access	Read and write
Description	This attribute specifies the excess burst size in bits. This is the amount of uncommitted data that the network will attempt to deliver over a specified time interval. The time interval is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*); however, if the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values are zero, then the time interval is specified by the *measurementInterval* (*t*) attribute. If the *be* attribute is set to ***0***, then packets that exceed the committed information rate are discarded.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE Rtr Vrf Policer Meter **measurementInterval (t)**

Access	Read and write
Description	This attribute specifies the time interval (in milliseconds) over which traffic rates and burst sizes are measured. This attribute value must be non-zero if *cir* and *bc* attribute values are zero. If the *cir* and *bc* attributes are non-zero then the *measurmentInterval* attribute is ignored.
Mib	no_mib
Values	Decimal (0..25500)
Units	msec
Default	0

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COMPONENT Rtr Vrf Policer Meter **PolicedPhb (Phb)**

Instance	0
	1
	2
	3
	4
	5
	6
	7
	8
	9
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	11
	12
	13
	14
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62
63
df
ef
af11
af12
af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups	GROUP Rtr Vrf Policer Meter Phb Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Policer/<string> Meter<string> PolicedPhb/<phb> Rtr/<string> Vrf<string> Policer/<string> Meter<string> PolicedPhb/<phb>* This component is used to identify the traffic that is conditioned by the *Meter*. An IP packet is assigned a PHB according to the value of DSCP field in the IP packet header and the set of existing *DiffServDomain PerHopBehavior* components. If the PHB assigned to the IP packet matches the *PolicedPhb* subcomponent instance, then the packet is conditioned by a policing mechanism that is established at the ingress or

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egress interface according to the *Meter* component provisioning.

The instance of this component must match a *PerHopBehavior* subcomponent of the *DiffServDomain* component used by the *Vr* or *Vrf*.

Each *Meter* component must have at least one *PolicedPhb* subcomponent.

Two *Meter* subcomponents of one *PolicerProfile* component cannot have *PolicedPhb* subcomponents with equal component instance values.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf Policer Meter Phb Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *PolicedPhb* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Policer Meter Phb initialBucket

Access: Read and write

Description: This attribute specifies whether or not traffic entering the *Meter* with this PHB contributes to the committed information rate.

If this attribute is set to ***committed*** then IP traffic entering the meter with this PHB is directed to the bucket tracking the committed information rate. The traffic is policed in a dual rate mode where both committed and excess information rates are enforced.

If this attribute is set to ***excess*** then IP traffic entering the meter with this PHB is directed to bucket the tracking the excess information rate. The traffic is policed in a single rate mode where only the excess information rate is enforced.

Mib: no_mib

Values:
committed
excess

Default: excess

ATTRIBUTE Rtr Vrf Policer Meter Phb outOfProfilePhb

Access: Read and write

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Description	This attribute specifies a new PHB that is assigned to any packet that has exceeded the committed information rate. This attribute will have effect only if the *initialBucket* attribute is set to ***committed***. The DSCP field of an IP packet that exceeds the committed information rate will be modifed to match this attribute value. The value of this attribute must match a *PerHopBehavior* subcomponent of the *DiffServDomain* component used by the *Vr* or *Vrf*. The default value of this attribute is equal to the *PolicedPhb* component instance for all PHBs except ***AF41***, ***AF42***, ***AF31***, ***AF32***, ***AF21***, ***AF22***, ***AF11***, ***AF12*** where the default value is ***AF42***, ***AF43***, ***AF32***, ***AF33***, ***AF22***, ***AF23***, ***AF12***, ***AF13***, respectively. The traffic class associated with the new PHB assigned to the packet must be equal to the traffic class associated with the original PHB assigned to the packet prior to policing. The traffic class associated with a PHB is identified by the *DiffServDomain PerHopBehavior trafficClass* attribute. Normally the drop precedence associated with the new PHB assigned to the packet is greater than the drop precedence associated with the original PHB assigned to the packet prior to policing. The drop precedence associated with a PHB is identified by the *DiffServDomain PerHopBehaviour dropPrecedence* attribute.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5

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cs6
cs7

Default — No default

ATTRIBUTE Rtr Vrf Policer Meter Phb **outOfProfileEgressDropPrecedenceOverride (dpOv)**

Access — Read and write

Description — This attribute specifies the drop precedence assigned to an IP packet if the *outOfProfilePhb* attribute value is equal to the *PolicedPhb* component instance value and the packet has exceeded the committed information rate at an egress interface that uses a *PolicerProfile* component.

Possible attribute values are: ***low***, ***medium***, & ***high***.

This attribute is for egress IP policing only.

Mib — no_mib

Values — low
medium
high

Default — high

COMPONENT Rtr Vrf **DiffServProfile (DiffServProf)**

Instance — String (1..20, ASCII)

Groups — GROUP Rtr Vrf DiffServProf Provisioned (Prov)

Scope — Application

Description — *Vr/<string> Ip DiffServProfile/<string>*
Rtr/<string> Vrf/<string> DiffServProfile/<string>

This component and its subcomponents represent mapping rules for classifying and marking IP packets received or transmitted at an interface.

At ingress interfaces the mapping rules are applied to mark the DSCP field of IP packets received at the interface, prior to policing (if any), prior to VPN encapsulation (if any), and prior to selection of forwarding treatments.

At egress interfaces the mapping rules are applied to mark the DSCP field of IP packets transmitted at the interface, after VPN decapsulation (if any) and after selection of forwarding treatments. Egress traffic conditioning with a *PolicerProfile* component is not allowed when a *DiffServProfile* component is used to classify and mark outbound traffic.

See the description of the *DifferentiatedServicesDomain* component and its subcomponents for a explanation of how an IP packet is treated based on the value of the DSCP field in the IP packet header.

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A *DiffServProfile* component is used to mark the DSCP field of inbound or outbound IP traffiic at a *VirtualRouter IpPort* or *VpnRouteForwarder Interface* by setting the *linkToDiffServProfile* attribute of the *IngressServices* or *EgressServices* subcomponent, respectively.

Each *DiffServProfile* component used at an ingress interface must have a *DscpMap* subcomponent, or a *LinkMap* subcomponent, or at least one *MfMap* subcomponent. The *LinkMap* subcomponent and *DscpMap* subcomponent are not allowed to co-exist. The *LinkMap* subcomponent and *MfMap* subcomponents are not allowed to co-exist.

Multifield classification at an ingress interface using *MfMap* subcomponents overrides DSCP classification using the *DscpMap* subcomponent. This means that DSCP classification, which is controlled by *the DscpMap* component, is performed only if the packet does not match any *MfMap IpAddrLayer4Flow* component. If *MfMap* subcomponents are used without the *DscpMap* subcomponent and the packet does not match any *MfMap IpAddrLayer4Flow* component, then the packet is marked with DSCP 0.

Each *DiffServProfile* component used at an egress interface must have a *DscpMap* subcomponent. It cannot have a *LinkMap* subcomponent nor a *MfMap* subcomponent.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents if the *Vr vpnMode* attribute is set to ***carrier***.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents if the *Vr* has does not have a *DiffServDomain* subcomponent.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents unless the *Vr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipDiffServ***.

The *Vrf* component cannot have *PolicerProfile* subcomponents if neither the *Rtr* nor *Vrf* has a *DiffServDomain* subcomponent.

The *Vrf* component cannot have *PolicerProfile* subcomponents if the *Rtr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the

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LogicalProcessorType linked to the *LogicalProcessor* includes ***ipDiffServ***.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf DiffServProf MfMap (Mf) COMPONENT Rtr Vrf DiffServProf LinkMap (LinkMap) COMPONENT Rtr Vrf DiffServProf DscpMap (DscpMap)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf DiffServProf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *DiffServProfile* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf linkToDiffServUsers (users)

Access	Read and write
Description	This attribute specifies the components that are linked to the *DiffServProfile* component. Only *IngressServices* or *EgressServices* subcomponents of the same *VirtualRouter* or *VpnRouteForwarder* can be linked to the *DiffServProfile* component.
Mib	no_mib
List of	Link (Service, linkToDiffServProfile)
List Size	256
Default	No default

COMPONENT Rtr Vrf DiffServProf MfMap (Mf)

Instance	String (1..20, ASCII)
Groups	GROUP Rtr Vrf DiffServProf Mf Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> MultiFieldMap/<string>* *Rtr/<string> Vrf/<string> DiffServProfile/<string> MultiFieldMap/<string>* This component provides a mapping of multi-field (MF) Layer 3 and Layer 4 criteria to a DSCP value for classifying and marking IP packets received at an interface.

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This classification and marking method is used at an ingress interface when the DSCP value of some or all incomming IP packets cannot be trusted and must be marked with various DSCP values according to Layer 3 and Layer 4 header information.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *MfMap* component must have at least one *IpAddrLayer4Flow* subcomponent.

See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf DiffServProf Mf IpAddrLayer4Flow
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf DiffServProf Mf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *MfMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf Mf assignedPhb (phb)

Access	Read and write
Description	This attribute indicates the Per Hop Behavior (PHB) assigned to a packet when the *MultiFieldMap* applies. The DSCP field of the IP packet is marked accordingly. Each *MfMap* subcomponent of the *DiffServProfile* must have an *assignedPhb* attribute value that corresponds to a unique DSCP value according to *DifferentiatedServicesDomain PerHopBehavior* component provisioning.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12

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af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default df

COMPONENT Rtr Vrf DiffServProf Mf **IpAddrLayer4Flow**

Instance Decimal (0..1023)

Groups GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow Provisioned (Prov)
GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow ProtoProvisioned
GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow Operational (Oper)

Scope Application

Description *Vr/<string> Ip DiffServProfile/<string> MultiFieldMap/<string> IpAddrLayer4Flow/<string>*

Rtr/<string> Vrf/<string> DiffServProfile/<string> MultiFieldMap/<string> IpAddrLayer4Flow/<string>

The *IpAddrLayer4Flow* component is used to specify multi-field (MF) Layer 3 and Layer 4 criteria.

The IP packet is checked to see if it matches the criteria specified by each *IpAddrLayer4Flow* component, if any, under the *DiffServProfile* component. The PHB assigned to the packet is the value of the *assignedPhb* attribute on the parent *MultiFieldMap* component of the *IpAddrLayer4Flow* whose criteria best match the packet. The DSCP field of the IP packet is marked accordingly.

For example, to assign PHB value ***AF41*** to FTP packets destined to subnet 123.123.123.0, an *IpAddrLayer4Flow* subcomponent is added to the *MultiFieldMap* component where the *assignedPhb* attribute is set to ***AF41***. The *prefix, prefixLength, protocol,* and *portNumberRange* attributes of the *IpAddrLayer4Flow* component are set to ***123.123.123.0***, ***24***, ***tcp***, and ***20***, ***21***, respectively. This criteria also applies to each FTP packet

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that originates from subnet 123.123.123.0, but only if the source address and port number of the packet do not match any *IpAddrLayer4Flow* subcomponents of the *DiffServProfile.*

The packet matching algorithm for MF classification is explained in more detail as follows.

A match can be found only if the IP header protocol field is one of ICMP, TCP, or UDP. The *prefix*, *prefixLength*, and *portNumberRange* attributes are checked only if the protocol field in the header is TCP or UDP.

The destination IP address and destination port number information from the packet is first compared against the *prefix* attribute in conjunction with the *prefixLength* and *portNumberRange* attributes. If the *prefixLength* is ***0*** and the *prefix* is ***0.0.0.0***, then any value in the packet's IP destination address fields is a match. If *portNumberRange* is ***0***, then any value in the packet's destination port number fields is a match.

If more than one *IpAddrLayer4Flow* component matches a packet (for instance one component specifies a range of IP addresses and a second specifies a single IP address in the range), then the component with the more precise match is used (the one which specifies the single address in this case). Precedence is always given to the IP address over the port number. For example, if one *IpAddrLayer4Flow* component specifies an range of IP addresses that includes the IP address from the packet and any port number, while a second *IpAddrLayer4Flow* component specifies an exact port number but a wider range of addresses, the first *IpAddrLayer4Flow* component is used.

If no match is found using the packet's destination IP address and destination port number information, then a second search is performed using the packet's source IP address and source port number information. This means that an *IpAddrLayer4Flow* component where the *protocol* is ***udp*** or ***tcp***, the *prefixLength* is ***0*** and the *portNumberRange* is ***0***, always matches some destination address and port number. This prevents the source address and port number check from being performed.

An ICMP packet matches any *IpAddrLayer4Flow* component whose *protocol* attribute is set to ***icmp***.

No attempt is made to match any packets where the options or fragment bits are set.

The *DiffServProfile* is not allowed to have more than 100 *IpAddressLayer4Flow* subcomponents.

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See the description of the *DiffServProfile* component for more information.

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow Provisioned (Prov)

Properties Provisioned

Description This group contains the prefix and the prefix length procisioned attributes of the IpAddrLayer4Flow component.

Mib no_mib

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow prefix

Access Read and write

Description This attribute specifies the IP address prefix for selecting IP packets.Matching an IP address to the prefix is does in conjuction with the *prefixLength* attribute.If the values is ***0.0.0.0*** then the *prefixLength* attribute must be ***0***.
See the description of the *IpAddrLayer4Flow* component for more information.

Mib no_mib

Values IP address

Default 0.0.0.0

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow prefixLength

Access Read and write

Description This attribute specifies the number of most significant bits of an IP address to be matched with the prefix for selecting IP packets.
The *prefixLength* value ***0*** indicates any IP address.
See the description of the *IpAddrLayer4Flow* component for more information.

Mib no_mib

Values Decimal (0..32)

Default 0

GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow ProtoProvisioned

Properties Provisioned

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Description	This group contains the protocol and portNumberRange provisioned attributes of the IpAddrLayer4FLow component.
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow **protocol (proto)**

Access	Read and write
Description	This attribute specifies the layer 2 (transport) protocol for selecting IP packets. If the value is icmp, then the prefixLength attribute must be 0, and the portNumberRange attribute must not be set. See the description of the IpAddrLayer4Flow component for more information.
Mib	no_mib
Values	icmp tcp udp
Default	tcp

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow **portNumberRange**

Access	Read and write
Description	This attribute specifies the TCP or UDP port number for selecting IP packets. A single value specifies a single port number.Two values specifies a range of port numbers.The order of the two values is irrelevant. See the description of the IpAddrLayer4Flow component for more information.
Mib	no_mib
List of	Decimal (0..65535)
List Size	2
Default	No default

GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *IpAddrLayer4Flow* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow **phb**

Access	Read only
Description	This attribute indicates the per hop behaviour (PHB) assigned to a packet when *MultiFieldMap* applies.The DSCP field of the ip packet is marked

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accordingly.The value of this attribute is equal to the ***assignedPhb*** attribute of the M*ultiFieldMap* component.

Mib: no_mib

Values:
Decimal (0..63)
df
ef
af11
af12
af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default: No default

COMPONENT Rtr Vrf DiffServProf LinkMap (LinkMap)

Groups: GROUP Rtr Vrf DiffServProf LinkMap Provisioned (Prov)

Scope: Application

Description:

Vr/<string> Ip DiffServProfile/<string> LinkMap
Rtr/<string> Vrf/<string> DiffServProfile/<string> LinkMap

This component provides a mapping of Layer 2 connection class values to PHB values for classifying IP packets received at an interface. The DSCP field of the IP packet is marked accordingly.

This classification and marking method is used at an ingress interface when the DSCP value of some or all incomming IP packets cannot be trusted and the DSCP field of all IP packets arriving at each Layer 2 connection is to be marked with exactly one of four different values.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte*, the connection class is specified by the *ipCoS* attribute of the *StaticDlci* or *DynamicDlciDef* subcomponent. For *IpDlciGroup*, the connection class is specified by the

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ipCos attribute of the *FrConnection* subcomponent. For all other media, the connection class is specified by the *ipCoS* attribute of the *IpPort.*

See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Vrf DiffServProf LinkMap Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes of the *LinkMap* component

Mib no_mib

ATTRIBUTE Rtr Vrf DiffServProf LinkMap assignedPhb (phb)

Access Read and write

Description This attribute specifies a mapping of Layer 2 connection class values to PHB values for classifying IP packets received at an interface. The DSCP field of the IP packet is marked accordingly.

The value on the right hand side of each element contained by this vector attribute should be a DSCP value that matches an existing *PerHopBehavior* subcomponent instance under the *DifferentiatedServicesDomain* component; otherwise, the packet will be treated according the *PerHopBehavior* subcomponent whose instance is associated with DSCP 0.

See the description of the *LinkMap* component for more information.

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Mib	no_mib
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..3)
Default	([1] 0, [3] 0)

COMPONENT Rtr Vrf DiffServProf DscpMap (DscpMap)

Groups	GROUP Rtr Vrf DiffServProf DscpMap Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> DscpMap* *Rtr/<string> Vrf/<string> DiffServProfile/<string> DscpMap* This component provides a mapping of DSCP values to PHB values for classifying IP packets received and transmitted at an interface. The DSCP field of the IP packet is marked accordingly. This classification an marking method is used at an ingress interface when the DSCP value of all incomming IP packets can be trusted, but require full or partial translation to new values for correct forwarding treatment. This classification an marking method can be used at an egress interface when the DSCP value of all outgoing IP packets require full or partial translation to new values for correct forwarding treatment at the next hop. See the description of the *DifferentiatedServicesDomain* and

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DiffServProfile components for more information.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP **Rtr Vrf DiffServProf DscpMap** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *DscpMap* component
Mib	no_mib

ATTRIBUTE **Rtr Vrf DiffServProf DscpMap** **assignedPhb (phb)**

Access	Read and write
Description	This attribute specifies a mapping of DSCP values to PHB values for classifying IP packets received and transmitted at an interface. The DSCP field of the IP packet is marked accordingly. If the *DscpMap* component is used at an ingress interface, the value on the right hand side of each element contained by this vector attribute should be a DSCP value that matches an existing *PerHopBehavior* subcomponent instance under the *DifferentiatedServicesDomain* component; otherwise, the packet will be treated according the *PerHopBehavior* subcomponent whose instance is associated with DSCP 0. See the description of the *DscpMap* component for more information.

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Mib	no_mib
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Rtr Vrf RelayBC

Groups	GROUP Rtr Vrf RelayBC Provisioned (Prov) GROUP Rtr Vrf RelayBC Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip RelayBC* *Rtr/<string> RelayBC* *Rtr/<string> Vrf/<string> RelayBC* The *InwRelayBroadcast* component controls the dissemination of IP broadcast packets received as Link-Layer broadcast.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf RelayBC PortEntry (Port)
Common Verbs	Help List Display

GROUP Rtr Vrf RelayBC Provisioned (Prov)

Properties	Provisioned

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Description	This group contains global configuration attributes for the Relay Broadcast component.
Mib	no_mib

ATTRIBUTE Rtr Vrf RelayBC relayStatus

Access	Read and write
Description	Specifies whether or not IP will forward IP broadcast packets that were received as Link-Layer broadcasts.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf RelayBC relayNdStatus

Access	Read and write
Description	Specifies whether or not IP will forward broadcast packets whose protocol is Sun ND.
Mib	no_mib
Values	enabled disabled
Default	disabled

GROUP Rtr Vrf RelayBC Operational (Oper)

Properties	Operational
Description	This group contains RelayBroadcast component statistics.
Mib	no_mib

ATTRIBUTE Rtr Vrf RelayBC relayNdCount

Access	Read only
Description	Indicates the number of Sun ND packets received by this router which were forwarded. *relayNdCount* wraps to zero if reached its maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf RelayBC PortEntry (Port)

Instance	Decimal (0..4294967295)
Groups	GROUP Rtr Vrf RelayBC Port Operational (Oper)

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Scope	Application
Description	*Vr/<string> Ip RelayBC PortEntry/<Decimal>* *Rtr/<string> RelayBC PortEntry/<Decimal>* This component is a table of destination UDP port numbers. In order for a packet to be forwarded by Relay Broadcast, the packet's destination UDP port number must be listed in this table.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf RelayBC Port Operational (Oper)

Properties	Operational
Description	This group contains statistics related to *InwPortEntry*.
Mib	no_mib

ATTRIBUTE Rtr Vrf RelayBC Port relayBcUdpCount

Access	Read only
Description	Indicates the number of forwarded packets with this destination UDP port number. *relayBcUdpCount* wraps to zero if reached its maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf RoutingInformationProtocol (Rip)

Groups	GROUP Rtr Vrf Rip Provisioned (Prov) GROUP Rtr Vrf Rip OsiState (State) GROUP Rtr Vrf Rip AdministrativeControl (AdminControl) GROUP Rtr Vrf Rip OperationalStatus (OperStatus) GROUP Rtr Vrf Rip Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Rip* *Rtr/<string> Rip* *Rtr/<string> Vrf/<string> Rip* This component represents the Routing Information Protocol for the IP.

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There should be at least one *RipInterface* provisioned below an *Interface* or below a *LogicalIf* under an *IpPort*.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Vrf Rip Import (Import)
COMPONENT Rtr Vrf Rip Export

Common Verbs: Help, List, Display, Add, DELete, LOCK, Unlock

GROUP Rtr Vrf Rip Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the RIP component

Mib: no_mib

ATTRIBUTE Rtr Vrf Rip migrateRip

Access: Read and write

Description: This attribute sets the preference level of OSPF-internal routes to be less preferred than RIP.
Note:
This parameter should only be used when starting migration of network from RIP to OSPF. When ready to cut over to OSPF, set this attribute value to ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with *migrateRip* ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.

Mib: no_mib

Values: enabled
disabled

Default: disabled

ATTRIBUTE Rtr Vrf Rip rfc1058MetricUsage (rfc1058)

Access: Read and write

Description: This attribute determines the metric usage for this RIP instance.

This flag is used to determine the way metrics are incremented.

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RFC 1058 way:
Sending Update: This is to use the metric for the route from the routing table as the advertised metric to be sent for that route. Nothing is ever added to this value from the sending side. The only special case handling is that if the route being advertised is the network route of a directly connected network, the metric in the routing table will be zero. Then the RipIf interface metric for the interface being advertised is used as the advertise metric. If the interface being advertised is not a Rip interface, then metric value of 1 is used.
Receiving Update: Add receiving interface's RIP metric to the metric for the route in the received advertisement and install the result in the receiver's routing table as the metric for that route.
Older way:
Sending Updates: Add the out going interfaces rip metric to the metric for a route in the routing table to form the metric to be advertised for that route.
Receiving Updates: The metric received in the advertisement for a route is put directly in the routing table as the metric for that route.

Note: It is recommended that, all the routers in this autonomous system should be following the rfc1058 metric system.
Setting this flag to ***disabled*** will have the effect of running the RIP with old metric incrementing system.

Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf Rip **generateDiscardRoute (discard)**

Access	Read and write
Description	This attribute specifies whether network discard routes should be added to the routing and forwarding table for the subnetted interfaces that are running RIP.
Mib	no_mib
Values	yes no
Default	yes

ATTRIBUTE Rtr Vrf Rip **redistributeIbgp (ribgp)**

Access	Read and write
Description	This attribute specifies whether the export policies of this *Rip* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all.*** If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false,*** routes learned from IBGP peers are

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	excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Rip defaultRipRtePreference (ripPref)

Access	Read and write
Description	This attribute specifies this RIP component instance's default routing preference assigned to the RIP routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	82

GROUP Rtr Vrf Rip OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Rip operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Rip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Rip AdministrativeControl (AdminControl)

Properties	Provisioned

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Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf Rip OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf Rip Operational (Oper)

Properties	Operational
Description	This group defines a set of operational attributes belonging to the *RIP* component. It corresponds to the rip2Globals table in the RIP-2 standard MIB.
Mib	no_mib

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ATTRIBUTE Rtr Vrf Rip routeChangesMade

Access	Read only
Description	This attribute counts the route changes made to the IP Route Database by Rip. This does not include the refresh of the route's age.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Rip queryResponses

Access	Read only
Description	This attribute counts the responses sent to RIP queries from other systems.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf Rip Import (Import)

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Rip Import Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal>* *Rtr/<string> Rip Import/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal>* This component controls the functionality of Route Leaking. In other words, this component will determine what routes are used by RIP.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf Rip Import Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Rip Import Provisioned (Prov)

Properties	Provisioned
Description	This is the group of provisionable attributes for the *Import* Subcomponent.
Mib	no_mib

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ATTRIBUTE Rtr Vrf Rip Import **usageFlag (usage)**

Access	Read and write
Description	This flag when set to ***ignore*** indicates the routes that are not used and if set to ***use***, indicates the routes which are used.
Mib	no_mib
Values	use ignore
Default	use

ATTRIBUTE Rtr Vrf Rip Import **importMetric (metric)**

Access	Read and write
Description	This attribute is used to override the default import metric for the RIP protocol. This value is not used to select which routes to use or ignore, rather it is the metric to be used in the routing table for the routes imported for this import policy. A value of zero indicates that the metric received in the update will be used.
Mib	no_mib
Values	Decimal (0..16)
Default	0

ATTRIBUTE Rtr Vrf Rip Import **neighbor (nbr)**

Access	Read and write
Description	This attribute indicates the IP Address of the neighbor this policy will apply to.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Rip Import **interface (if)**

Access	Read and write
Description	This attribute specifies the RIP interface to which this import policy applies. The value of 0.0.0.0 implies any RIP interface on the routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

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ATTRIBUTE Rtr Vrf Rip Import **description (desc)**

Access	Read and write
Description	This attribute describes the policy. For example, 'to import RIP routes from MCI'.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Rip Import **Network (Net)**

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Rip Import Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Rip Import/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal> NetworkList/<Decimal>* This component identifies a set of networks that this Import policy will apply to.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Rip Import Net **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains attributes for the *Import NetworkList* component for the Import Policy to be applied to.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip Import Net **ipAddress (addr)**

Access	Read and write
Description	This attribute specifies the IP address that needs to be matched against in this network list for the Import Policy to be applied to.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Rip Import Net **ipMask (mask)**

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Access	Read and write
Description	This attribute specifies the IP mask for the attribute *ipAddress*.
Mib	no_mib
Values	IP address
Default	No default

COMPONENT Rtr Vrf Rip Export

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Rip Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal>* *Rtr/<string> Rip Export/<Decimal>* *Rtr/<string> Vrf/<string> Rip Export/<Decimal>* Each instance of this component specifies a RIP export policy. A RIP export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as a RIP route on one or all RIP interfaces of the routing component (*Vr*, *Rtr* or *Vrf*). The *Rip* component by default advertises all local routes and all RIP learned routes to all RIP interfaces based on the metric in the IP forwarding table.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf Rip Export Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Rip Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	no_mib

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Values	send block
Default	send

ATTRIBUTE Rtr Vrf Rip Export exportMetric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *exportMetric* is ignored. The *exportMetric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of 0 indicates that the exported routes will be advertised with their original metric. When exporting routes from other protocols into RIP, an *exportMetric* value of 0 will distribute these routes with the metric of the original protocol. If the metric of the original protocol exceeds 15, the exported routes will be considered as unreachable by RIP. If an *exportMetric* value of 16 is specified, the exported routes will be advertised into RIP as unreachable.
Mib	no_mib
Values	Decimal (0..16)
Default	0

ATTRIBUTE Rtr Vrf Rip Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Rip* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	no_mib
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

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ATTRIBUTE Rtr Vrf Rip Export **ripInterface (ripIf)**

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Rip Export **egpAsId (egpAs)**

Access	Read and write
Description	Under the *Rtr* and *Rtr Vrf*, this attribute has no effect. Under the *Vr*, this attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	no_mib
Values	Decimal (0..65536)
Default	0

ATTRIBUTE Rtr Vrf Rip Export **ospfTag (tag)**

Access	Read and write
Description	This attribute specifies the OSPF learned external routes to which this export policy applies, based on the learned OSPF tag of the routes. This attribute can only be set to a non default value when *protocol* is set to ***ospfExternal***. The default value of 4294967295 implies any tag.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Vrf Rip Export **outInterface (outIf)**

Access	Read and write

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Description	This attribute specifies the RIP interface on the virtual router which routes are exported onto as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *outInterface* is ignored. The *outInterface* value is not used to select which routes to block or send, but rather where to export the routes. A value of 0.0.0.0 indicates that the routes are exported to all RIP interfaces on the routing component (*Vr*, *Rtr* or *Vrf*). Otherwise, the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Rip Export **bgpAsId (bgpAs)**

Access	Read and write
Description	This key attribute specifies the BGP AS from which the routes are learned. This key will be used only when the *protocol* is set to ***bgpExternal***. *bgpAsId* of ***0*** matches all BGP ASs.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Rip Export **description (desc)**

Access	Read and write
Description	The attribute describes the policy. For example, 'to export RIP routes to AS 1'.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Rip Export **Network (Net)**

Instance	Decimal (0..65535)
Groups	GROUP Rtr Vrf Rip Export Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Rip Export/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Vrf/<string> Rip Export/<Decimal> NetworkList/<Decimal>*

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This component identifies a set of attributes when matched determines the export policy applied.

Mib: no_mib

Common Verbs: Help, List, Display, Add, DELete

GROUP Rtr Vrf Rip Export Net Provisioned (Prov)

Properties: Provisioned

Description: This group identifies the set of Provisionable attributes for the *ExportNetworkList* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Rip Export Net ipAddress (addr)

Access: Read and write

Description: This attribute identifies the 32 bit IP address to match against.

Mib: no_mib

Values: IP address

Default: No default

ATTRIBUTE Rtr Vrf Rip Export Net ipMask (mask)

Access: Read and write

Description: This attribute is the IP Mask to be used with the IP Address to match against.

Mib: no_mib

Values: IP address

Default: No default

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COMPONENT Rtr Vrf RouteDataBaseEntry (Rdb)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] protocol (proto) [bogus local remote special ospf ospfExternal ospfType3Discard ospfType7Discard rip ripDiscard egp bgpExternal bgpInternal bgpAggrDiscard redistrib mpls mbgp bgpMplsInternal ebgpLabel] gateway [IP address]
Groups	GROUP Rtr Vrf Rdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip RouteDataBaseEntry/ <destAddress>,<destMask>,<protocol>* *Rtr/<string> RouteDatabaseEntry/<destAddress>,<destMask>,<protocol>* *Rtr/<string> Vrf/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* This component is used to display the information in the Ip routing database. *destAddress* and *destMask* indicates the address and mask of the route in the RoutingDatabase. *protocol* indicates the protocol this entry is learned from. *gateway* indicates the nextHop address for remote routes. The value of *gateway* for the localInterface routes will be the same value as the *destAddress*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Rdb Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the routing database.

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Mib	no_mib

ATTRIBUTE Rtr Vrf Rdb metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the index to this entry *protocol*. If this metric is not used, its value should be set to -1.
Mib	no_mib
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Rtr Vrf Rdb preference (pref)

Access	Read only
Description	This attribute specifies the the preference value of this particular entry. The value of this attribute affects the way the routeEntries in this database are selected for installing it in the *ForwardTable*. The lower the preference value of this entry, the higher are the chances that this entry will be selected to install in the *ForwardTable*.
Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Vrf Rdb age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Static

Groups	GROUP Rtr Vrf Static OsiState (State) GROUP Rtr Vrf Static Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Static* *Rtr/<string> Static* *Rtr/<string> Vrf/<string> Static*

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The *Static* component is used to configure addition, deletion and modification of static routing information.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Vrf Static RouteEntry (Route)
COMPONENT Rtr Vrf Static DiscardRouteEntry (Discard)

Common Verbs: Help, List, Display, Add, DELete, LOCK, Unlock

GROUP Rtr Vrf Static OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr Vrf Static adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

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Default	unlocked

ATTRIBUTE Rtr Vrf Static **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Static **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Static **Provisioned (Prov)**

Properties	Provisioned
Description	This group of attributes are used to configure the Static component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Static **defaultStaticRemoteRtePreference (pref)**

Access	Read and write

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Description	This attribute specifies this *Static* component instance's default routing preference assigned to the remote routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticRemoteRtePreference* attribute in *RouteEntry* will override this default.
Mib	no_mib
Values	Decimal (1..253)
Default	72

ATTRIBUTE Rtr Vrf Static **defaultStaticDiscardRtePreference (discpref)**

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the discard routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticDiscardRtePreference* attribute in *DiscardRouteEntry* will override this default.
Mib	no_mib
Values	Decimal (0..253)
Default	0

ATTRIBUTE Rtr Vrf Static **maxEcmpNextHops**

Access	Read and write
Description	This attribute specifies the maximum number of Equal Cost Multi-Path (ECMP) *NextHop*s that are supported for *Static RouteEntry*s. If *maxEcmpNextHops* is ***1*** then only a single available *NextHop* is used, even if multiple *NextHops* are provisioned with the same *metric* value under a given *Static RouteEntry*. In other words ECMP is disabled for static routes. If *maxEcmpNextHops* is ***3*** the traffic will be loadshared over the available *NextHops* that have the same value set for the *metric* attribute under a given *Static RouteEntry*. When *protected Static RouteEntry*s are provisioned, *maxEcmpNextHops* must be ***1***.
Mib	no_mib
Values	1 3
Default	3

ATTRIBUTE Rtr Vrf Static **heartbeatDeadInterval (hbDeadInt)**

Access	Read and write
Description	This attribute specifies the L3 *Static* heartbeat dead router interval for the *NextHop* Routers of *Static Route*s which have *heartbeat* ***enabled***. If no

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heartbeat polling responses have been received in the last *heartbeatDeadInterval* seconds, then the *heartbeatState* of this *NextHop* is ***down***.
If *heartbeatDeadInterval* is ***disabled***, L3 heartbeat monitoring will not occur for any *Static Route NextHop*s and the *heartbeatState* of all *NextHop*s will be ***disabled***.

Mib: no_mib

Values: Decimal (4..60)
disabled

Default: disabled

COMPONENT Rtr Vrf Static RouteEntry (Route)

Instance: destAddress (addr) [IP address]
destMask (mask) [IP address]
typeOfService (tos) [Decimal (0..0)]

Groups: GROUP Rtr Vrf Static Route Provisioned (Prov)
GROUP Rtr Vrf Static Route Operational (Oper)
GROUP Rtr Vrf Static Route OsiState (State)

Scope: Application

Description: *Vr/<string> Ip Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal>
Rtr/<string> Static RouteEntry/<Ip Address>, <Ip Address>, <Decimal>
Rtr/<string> Vrf/<string> Static RouteEntry/<Ip Address>, <Ip Address>, <Decimal>
This component describes the IP static routes.

For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry*.

The value of index *destMask* should be contiguous.

Only the value zero is supported. Zero will be substituted for any value that is entered.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Vrf Static Route NextHop (Nh)

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Static Route Provisioned (Prov)

Properties: Provisioned

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Description	This group contains a provisionable set of attributes for the static route entry component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Static Route **staticRemoteRtePreference (pref)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the route preference of the static remote route. A lower preference value means the route is more preferred. If ***sameAsStatic*** is specified, the value of *defaultStaticRemoteRtePreference* in the *Static* component is used.
Mib	no_mib
Values	Decimal (1..253) sameAsStatic
Default	sameAsStatic

ATTRIBUTE Rtr Vrf Static Route **protected**

Access	Read and write
Description	This attribute specifies whether this route is protected or not. Note that *Vr Ip Static maxEcmpNextHops* must be ***1*** and *Vr Ip Ospf ecmpStatus* must be ***disabled*** when there is a *protected* static route under the *Vr*.
Mib	no_mib
Values	yes no
Default	no

ATTRIBUTE Rtr Vrf Static Route **protectedFailureBehavior (protFlrB)**

Access	Read and write
Description	This attribute specifies the behavior when all *NextHops* of a *protected* static route fail. If ***discard*** is specified, the static route will not be removed, it will continue to be used to discard traffic.
Mib	no_mib
Values	discard
Default	discard

ATTRIBUTE Rtr Vrf Static Route **heartbeat**

Access	Read and write
Description	This attribute specifies whether or not *heartbeat* is ***enabled*** for this route. In order for this attribute to have any effect, heartbeat must first be

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permitted at the *Static* component level by configuring the *heartbeatDeadInterval* to a value different than ***disabled***.
If ***enabled*** is specified for *heartbeat*, an IP heartbeat is maintained for each of the *NextHops*. ICMP echo requests are sent every 1second and if an ICMP echo resply is received, the *heartbeatState* of the *NextHop* is declared ***up***. If at any point no ICMP response has been received for *heartbeatDeadInterval* seconds, the *heartbeatState* of the *NextHop* will be ***down***.
If ***disabled*** is specified, the *heartbeatState* of each *NextHop* under this *Static Route* will be ***disabled***.

Mib: no_mib

Values:
enabled
disabled

Default: disabled

GROUP Rtr Vrf Static Route **Operational (Oper)**

Properties: Operational

Description: This group contains a set of operational attributes for the static route entry component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Static Route **protectionLevel (protL)**

Access: Read only

Description: This attribute indicates the current protection level for a *Static RouteEntry*. A value of ***portProtected*** indicates that the only alternative enabled *NextHop*(s) for this protected route are on the same card as the active *NextHop*. When the value is ***cardProtected***, one or more alternative enabled ***NextHop***s exist on a different card than the active ***NextHop***. If the value is ***unprotected***, no alternative enabled *NextHop*s exist or this is an unprotected static route (that is, *protected* = ***no*** for this *Static RouteEntry*).

Mib: no_mib

Values:
portProtected
cardProtected
unprotected
notApplicable

Default: No default

GROUP Rtr Vrf Static Route **OsiState (State)**

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Vrf Static Route **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib no_mib

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Rtr Vrf Static Route **operationalState (osiOper)**

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib no_mib

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Rtr Vrf Static Route **usageState (osiUsage)**

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

COMPONENT **Rtr Vrf Static Route** **NextHop (Nh)**

Instance	IP address
Groups	GROUP Rtr Vrf Static Route Nh Provisioned (Prov) GROUP Rtr Vrf Static Route Nh OsiState (State) GROUP Rtr Vrf Static Route Nh Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* *Rtr/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* *Rtr/<string> Vrf/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* This component provides the destination Ip address of the *NextHop* (some times referred to as the Gateway). For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry*. Each provisioned *NextHop* address should belong to a valid subnet.

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A valid subnet for this IP entity can be provisioned as a *logicalIf* Entry under an *IpPort.*

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Vrf Static Route Nh Provisioned (Prov)

Properties Provisioned

Description This group contains a provisionable set of attributes for the *Static RouteEntry NextHop* component.

Mib no_mib

ATTRIBUTE Rtr Vrf Static Route Nh metric (metric)

Access Read and write

Description This attribute specifies the primary routing metric for this *NextHop*.

Mib no_mib

Values Signed (-1..65535)

Default 1

GROUP Rtr Vrf Static Route Nh OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Vrf Static Route Nh adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf Static Route Nh **operationalState (osiOper)**

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf Static Route Nh **usageState (osiUsage)**

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

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Default	idle

GROUP Rtr Vrf Static Route Nh **Operational (Oper)**

Properties	Operational
Description	
Mib	no_mib

ATTRIBUTE Rtr Vrf Static Route Nh **heartbeatState (hbS)**

Access	Read only
Description	This attribute indicates the state of the heartbeat mechanism with this *NextHop*'s next hop Router. The value will be ***disabled*** if the *heartbeatDeadInterval* is disabled for all *Static Route*s that share this *NextHop*. The value may be ***undetermined*** briefly upon initialization, before the heartbeat mechanism has completed an assessment. The value will be ***down*** if the *NextHop* Router has not responded to ICMP heartbeat requests nor ARP heartbeat requests. The value will be ***up*** if the *NextHop* Router has responded to ICMP heartbeat requests.
Mib	no_mib
Values	undetermined disabled down up
Default	No default

COMPONENT Rtr Vrf Static **DiscardRouteEntry (Discard)**

Instance	destAddress (addr) [IP address] destMask [IP address]
Scope	Application
Description	*Vr/<string> Ip Static DiscardRouteEntry/<Ip Address>,<Ip Address> Router/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address> Router/<string> Vrf/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>* This table identifies invalid martian networks. Forwarding of packets to the network address indicated by this entry will be discarded.
Mib	no_mib
Common Verbs	Help List Display Add DELete

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COMPONENT Rtr Vrf Udp

Groups	GROUP Rtr Vrf Udp Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip Udp* *Rtr/<string> Udp* *Rtr/<string> Vrf/<string> Udp* *Udp* component controls all UDP related attributes supported by this router.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Vrf Udp ListenEntry
Common Verbs	Help List Display

GROUP Rtr Vrf Udp Statistics (Stats)

Properties	Operational
Description	This group holds statictics for UDP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Udp inDatagrams

Access	Read only
Description	The number of UDP datagrams delivered to UDP users. *inDatagrams* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Udp noPorts

Access	Read only
Description	The number of UDP datagrams received for which there was no application at the destination port. *noPorts* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Udp inErrors

Access	Read only

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Description	The number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. *inErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Udp outDatagrams

Access	Read only
Description	The number of UDP datagrams sent from this gateway. *outDatagrams* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Udp ListenEntry

Instance	localAddress [IP address] localPort [Decimal (0..65535)]
Scope	Application
Description	The table contains UDP listener information.
Mib	no_mib
Common Verbs	Help List Display LOCK Unlock

COMPONENT Rtr Vrf Tcp

Groups	GROUP Rtr Vrf Tcp Statistics (Stats)
Scope	Application
Description	The *Tcp* component contains all attributes related to TCP.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Vrf Tcp TcpEntry (TcpEntry)
Common Verbs	Help List Display

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GROUP Rtr Vrf Tcp Statistics (Stats)

Properties	Operational
Description	This group contains statistics for TCP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Tcp rToAlgorithm

Access	Read only
Description	Indicate which algorithm was used to calculate the timeout value used for retransmitting unackowledged octet.
Mib	no_mib
Values	other constant rsre vanJacobson
Default	No default

ATTRIBUTE Rtr Vrf Tcp rToMin

Access	Read only
Description	Indicate the minimum value, measured in milliseconds, allowed for retransmission timeout.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE Rtr Vrf Tcp rToMax

Access	Read only
Description	Indicates the maximun value, measured in milliseconds, allowed for retransmission timeout.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Rtr Vrf Tcp maxConn

Access	Read only

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Description	Limit on number of connections the TCP can support. The value is always -1 which indicates that the number of connections supported is dynamic (limited by memory in the system).
Mib	no_mib
Values	Signed (-1)
Default	-1

ATTRIBUTE Rtr Vrf Tcp activeOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synSent*** state from the ***closed*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp passiveOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synRcvd*** state from the ***listen*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp attemptFails

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***synSent*** state or the ***synRcvd*** state, plus the number of times TCP connections have made a direct transition to the ***listen*** state from the ***synRcvd*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp estabResets

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***established*** state or the ***closedWait*** state.
Mib	no_mib

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp currEstab

Access	Read only
Description	The number of TCP connections for which the current state is either ***established*** or ***closedWait***.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp inSegs

Access	Read only
Description	The number of segments received, including those received in error. This count includes segments received on currently established connections.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp outSegs

Access	Read only
Description	The number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp retransSegs

Access	Read only
Description	The number of segments retransmitted that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp inErrs

Access	Read only

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Description	Total number of segments received in error, for example bad TCP checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp outRsts

Access	Read only
Description	Number of TCP segments sent containing the RST flag.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Tcp TcpEntry (TcpEntry)

Instance	localAddress [IP address] localPort [Decimal (0..65535)] remoteAddress [IP address] remotePort [Decimal (0..65535)]
Groups	GROUP Rtr Vrf Tcp TcpEntry Operational (Oper)
Scope	Application
Description	The component defines an entry in the TCP connection table. Each entry corresponds to TCP end-point identified by 4-tuples, *LocalAddress*, *LocalPort*, *RemoteAddress*, and *RemotePort*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Tcp TcpEntry Operational (Oper)

Properties	Operational
Description	This group contains columnar entries for each end-point on the TCP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Tcp TcpEntry state

Access	Read and write
Description	This attribute reflects the current state of this Tcp connection.
Mib	no_mib

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Values	closed listen synSent synReceived established closeWait finWait1 closing lastAck finWait2 timeWait delete
Default	No default

COMPONENT Rtr Vrf Interface (If)

Instance	IP address
Groups	GROUP Rtr Vrf If AdministrativeControl (AdminControl) GROUP Rtr Vrf If Provisioned (Prov) GROUP Rtr Vrf If NetMaskProv GROUP Rtr Vrf If OperationalStatus (OperStatus) GROUP Rtr Vrf If OsiState (State) GROUP Rtr Vrf If Operational (Oper) GROUP Rtr Vrf If RelayBcOperational (RelayBcOper) GROUP Rtr Vrf If IfTable (Ift) GROUP Rtr Vrf If AdditionalInfo
Scope	Application
Description	*Rtr<string> Interface/<string>* *Rtr/<string> Vrf/<string> Interface/<string>* The *Interface* component represents a logical interface to the Ip network. When the *Interface* component is configured under *Vrf*, ***rfc2547bis*** must

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be present in the *featureList* of the *SW Lpt/<string>* component associated with this *Interface*.

Mib: no_mib

Opt. Subcomp.:
COMPONENT Rtr Vrf If AtmMultiprotocolEncapsulation (AtmMpe)
COMPONENT Rtr Vrf If BootpPort (BootpP)
COMPONENT Rtr Vrf If OspfInterface (OspfIf)
COMPONENT Rtr Vrf If IsisInterface (IsisIf)
COMPONENT Rtr Vrf If IngressServices (IS)
COMPONENT Rtr Vrf If EgressServices (ES)
COMPONENT Rtr Vrf If RipInterface (RipIf)
COMPONENT Rtr Vrf If VrrpPort
COMPONENT Rtr Vrf If Loopback (Lb)
COMPONENT Rtr Vrf If RsvpTeIf
COMPONENT Rtr Vrf If LabelDistributionProtocolIf (LdpIf)
COMPONENT Rtr Vrf If IpoDlci
COMPONENT Rtr Vrf If EnetApplication (Enet)
COMPONENT Rtr Vrf If PppApplication (Ppp)

Dyn. Subcomp.: COMPONENT Rtr Vrf If MplsBgpInterface (MplsBgpIf)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr Vrf If AdministrativeControl (AdminControl)

Properties: Provisioned

Description: This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.

Mib: no_mib

ATTRIBUTE Rtr Vrf If snmpAdminStatus

Access: Read and write

Description: The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

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Default	up

GROUP Rtr Vrf If Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for an Interface to the IP network.
Mib	no_mib

ATTRIBUTE Rtr Vrf If arpStatus

Access	Read and write
Description	This attribute specifies whether ARP is enabled or disabled on this *Interface*. If ***auto*** is specified, an appropriate value will be selected based on the *Interface* media type.
Mib	no_mib
Values	enabled disabled auto
Default	auto

ATTRIBUTE Rtr Vrf If proxyArpStatus

Access	Read and write
Description	This attribute specifies whether Proxy ARP is enabled or disabled for this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf If arpNoLearn

Access	Read and write
Description	This attribute specifies whether or not dynamic host entries will be installed in the ARP table when ARP packets are received on this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf If sendRedirect

Access	Read and write

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Description	This attribute specifies whether or not ICMP host redirects will be sent out this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf If multicastStatus

Access	Read and write
Description	This attribute specifies whether or not IP multicast packets can be sent out this *Interface*. If ***auto*** is specified, an appropriate value will be selected based on the *Interface* media.
Mib	no_mib
Values	enabled disabled auto
Default	auto

ATTRIBUTE Rtr Vrf If relayAddress

Access	Read and write
Description	This attribute specifies a relay broadcast address for this *Interface*. Each packet, received on this *Interface*, meeting the relay broadcast criteria will be forwarded to the specified relay broadcast address. An relay address of all zero's indicates no relay broadcast address.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf If relayBroadcast

Access	Read and write
Description	This attribute specifies how packets, received on other *Interface*, meeting the relay broadcast criteria, will be forwarded out this *Interface*. The three options are described as follows: ***enabled***: packets will be forwarded out this *Interface*. ***disabled***: packets will not be forwarded out this *Interface*. ***auto***: packets will be forwarded out this *Interface* only when the bridge state is forwarding.
Mib	no_mib

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Values	enabled disabled auto
Default	disabled

ATTRIBUTE Rtr Vrf If linkDestinationAddress

Access	Read and write
Description	This attribute specifies the address for the link destination for this *Interface*. This attribute is required for PPP media when the netmask of the *Interface* is 32 bit.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf If lanModel

Access	Read and write
Criticality	Component
Description	This attribute specifies the lan model to use for this *Interface*.
Mib	no_mib
Values	localAreaNetwork (lan) nonBroadcastMultipleAccess (nbma)
Default	localAreaNetwork

ATTRIBUTE Rtr Vrf If interfaceType

Access	Read and write
Description	This attribute specifies whether the interface is an access or a core interface. For Router Interfaces, the default value is ***core***. For Vrf Interfaces, the default value is ***access***.
Mib	no_mib
Values	unspecified access core
Default	unspecified

ATTRIBUTE Rtr Vrf If icmpMaskReply

Access	Read and write
Description	This attribute specifies whether or not replies will be generated in response to ICMP Address Mask Requests received on this *Interface.*
Mib	no_mib

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Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf If **directedBroadcast**

Access	Read and write
Description	This attribute specifies whether or not directed broadcast to physical broadcast translation is enabled for incoming traffic on this *Interface.* The IP router requirement (RFC1812) says this translation should be ***enabled***; however, in some network environments, setting this attribute to ***disabled*** may prevent operational problem such as broadcast storms. Note that in some configuration, setting this attribute to ***disabled*** may cause Bootp to fail.
Mib	no_mib
Values	enabled disabled
Default	enabled

GROUP Rtr Vrf If **NetMaskProv**

Properties	Provisioned
Description	This group contains attributes required to define a *netMask*.
Mib	no_mib

ATTRIBUTE Rtr Vrf If **netMask**

Access	Read and write
Description	This attribute specifies the subnet mask for this *Interface*. This attribute must be specified because the IP application will not automatically provide a default value. If the media is: 1) *Loopback* with *mode* ***primayLoopback***, then the value of the *netMask* attribute must be ***255.255.255.255***; 2) *Loopback* with *mode* ***alwaysUpInterface***, then the value of the *netMask* attribute can be any non-zero value; 3) *Ppp*, then the value of the *netMask* attribute can be any non-zero value; 3) another other media, then the value of the *netMask* attribute can be any non-zero value other than ***255.255.255.255***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

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GROUP Rtr Vrf If OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

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GROUP Rtr Vrf If Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*.
Mib	no_mib

ATTRIBUTE Rtr Vrf If operArpStatus

Access	Read only
Description	This attribute indicates the current operational ARP status. If the provisioned *arpStatus* is set to ***auto***, then the IP application automatically determines the *operArpStatus* based on the *Interface* media type.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf If operMulticastStatus

Access	Read only
Description	This attribute indicates the current operational Multicast status. If the provisioned *multicastStatus* is set to ***auto***, then the IP application automatically determines the *operMulticastStatus* based on the *Interface* media.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf If broadcastAddress

Access	Read only
Description	This attribute indicates the destination IP address to be used by any application which needs to broadcast on this *Interface*.
Mib	no_mib
Values	IP address
Default	No default

GROUP Rtr Vrf If RelayBcOperational (RelayBcOper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*'s or *IpPort*'s RelayBc counters.

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Mib	no_mib

ATTRIBUTE Rtr Vrf If relayAddressCount

Access	Read only
Description	This attribute indicates the number of frames received on this *Interface* or *IpPort* which were forwarded to the provisioned *relayAddress* for this port. This counter wraps to zero when it reaches it's maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If relayBcCount

Access	Read only
Description	This attribute indicates the number of frames received on this port which were forwarded to the *broadcastAddress* on other *IpPorts* or *Interfaces*. This counter is incremented once for every frame received on this port regardless of how many other ports it was sent on. This counter wraps to zero when it reaches it's maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr Vrf If IfTable (Ift)

Properties	Operational
Description	This group represents the SNMP interface table entry.
Mib	no_mib

ATTRIBUTE Rtr Vrf If ifAdminStatus (admStatus)

Access	Read only
Description	This attribute provides the current administration status of the interface. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf If ifOperStatus (opStatus)

Access	Read only

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Description	This attribute provides the current operational status of the interface. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	down

ATTRIBUTE Rtr Vrf If ifLastChange (lastChange)

Access	Read only
Description	This attribute provides the value of sysUpTime at the time the interface entered its current operational state. If the current state was entered prior to the last re- initialization of the local network management subsystem, then this object contains a zero value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInOctets (inOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. The 64-bit version may be available in the *ifHCInOctets* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutOctets (outOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. The 64-bit version may be available in the *ifHCOutOctets* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInDiscards (inDiscard)

Access	Read only

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Description	This attribute reports the number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher layer protocol. One possible reason for discarding such a packet could be to free up buffer space.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutDiscards (outDiscard)

Access	Read only
Description	This attribute reports the number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInErrors (inErr)

Access	Read only
Description	This attribute reports the number of inbound packets that contained errors preventing them from being deliverable to a higher layer protocol.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutErrors (outErr)

Access	Read only
Description	This attribute reports the number of outbound packets that could not be transmitted because of errors.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInUcastPkts (inUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast

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	address at this sub-layer. The 64-bit version may be available in the *ifHCInUcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutUcastPkts (outUcast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. The 64-bit version may be available in the *ifHCOutUcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInNuCastPkts (inNucast)

Access	Read only
Description	This attribute reports the number of non-unicast (i.e., subnetwork-broadcast or subnetwork-multicast) packets delivered to a higher-layer protocol. The corresponding 64-bit versions may be available in the *ifInMulticastPkts* attribute and the *ifInBroadcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutNuCastPkts (outNuCast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols request be transmitted to a non-unicast address, including those that were discarded or not sent. The corresponding 64-bit versions may be available in the *ifOutMulticastPkts* and *ifOutBroadcastPkts* attributes.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInUnknownProtos (inUknownProt)

Access	Read only

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Description	This attribute reports the number of packets received via the interface which were discarded because of an unknown or unsupported protocol.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutQlength (outQlen)

Access	Read only
Description	This attribute represents the length of the output packet queue (in packets).
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifDescription (desc)

Access	Read only
Description	This attribute provides a textual string containing information about the interface. This string includes the name of the manufacturer, the product name and the version of the hardware interface.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf If ifType (type)

Access	Read only
Description	This attribute describes the type of interface, distinguished according to the physical/link protocol(s) immediately below the network layer in the protocol stack
Mib	no_mib
Values	other ddnX25 rfc877x25 ethernetCsmacd ethernet8023 tokenBus8024 tokenring8025 man802 starLan hyperChannel fddi

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lapb
sdlc
ds1
e1
basicIsdn
primaryIsdn
propPointToPointSerial
ppp
bnx
ds3
smds
frameRelay
sonetSdh
frameRelayService
v35
hssi
sonetPath
aflane8023
aflane8025
v11
channel
pppIwf
atmMpeVcEncap
atmMpeLlcEncap
ilsForwarder
ipTunnel
virtualMedia
localMedia

Default — No default

ATTRIBUTE Rtr Vrf If ifMtu (mtu)

Access — Read only

Description — This attribute represents the size of the largest datagram which can be sent/received on the interface, specified in octets. For interfaces that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the interface.

Mib — no_mib

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Rtr Vrf If ifSpeed (speed)

Access — Read only

Description — This attribute provides an estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifPhysicalAddress (phys)

Access	Read only
Description	This attribute represents the interface's address at the protocol layer immediately `below' the network layer in the protocol stack. For interfaces which do not have such an address (e.g., a serial line), this object should be an octet string of zero length.
Mib	no_mib
Values	String (0..17, ASCII)
Default	No default

GROUP Rtr Vrf If AdditionalInfo

Properties	Operational
Description	This group contains additional information associated with this ifEntry, including SNMP ifXTable entry information.
Mib	no_mib

ATTRIBUTE Rtr Vrf If ifHCInOctets (inHCOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifInOctets* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ifHCInUcastPkts (inHCUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. This High Capacity counter is a 64-bit version of the *ifInUcastPkts* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

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ATTRIBUTE Rtr Vrf If ifHCOutOctets (outHCOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifOutOctets* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ifHCOutUcastPkts (outHCUcast)

Access	Read only
Description	This attibutes reports the total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. This High Capacity counter is a 64-bit version of the *ifOutUcastPkts* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr Vrf If AtmMultiprotocolEncapsulation (AtmMpe)

Groups	GROUP Rtr Vrf If AtmMpe CustomerIdentifierData (CidData) GROUP Rtr Vrf If AtmMpe IfEntryProv (IfEntry) GROUP Rtr Vrf If AtmMpe Provisioned (Prov) GROUP Rtr Vrf If AtmMpe OsiState (State) GROUP Rtr Vrf If AtmMpe OperationalStatus (OperStatus)
Scope	Application
Description	*Rtr/<string> If/<IP addr> AtmMpe* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe* This subcomponent represents a logical interface between the Router and an ATM media (*AtmIf*). Multiprotocol Encapsulation as specified in RFC1483 is used to transfer higher-layer protocol data across virtual channels in an ATM network. *AtmMpe* provides a means to associate multiple ATM virtual channel connections with a single *Router Interface*.

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The *AtmMpe* component is associated with virtual channel connections via a linkage attribute in each *AtmConnection* subcomponent.

Mib	no_mib
Subcomponents	COMPONENT Rtr Vrf If AtmMpe AtmConnection (Ac)
Opt. Subcomp.	COMPONENT Rtr Vrf If AtmMpe SpvcTerminationPoint (Stp)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If AtmMpe CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr Vrf If AtmMpe IfEntryProv (IfEntry)

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Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf If AtmMpe ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr Vrf If AtmMpe Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmMpe* component under the Router Interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe maxTransmissionUnit (mtu)

Access	Read and write
Description	This attribute sets the size of the largest datagram which can be sent on the interface. This includes the size of the Logical Link Control header (if applicable) as well as the protocol data unit.
Mib	no_mib
Values	Decimal (256..9188)
Units	octets

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Default	9188

ATTRIBUTE Rtr Vrf If AtmMpe **encapType (etype)**

Access	Read and write
Criticality	Component
Description	This attribute specifies the RFC-1483 encapsulation type to be used for the *AtmConnections* under this *AtmMpe*. Specifying ***llcEncap*** allows multiplexing of multiple protocols over the *VCCs*. The protocol of the carried PDU will be identified by an IEEE 802.2 Logical Link Control header. If Inverse ARP is to be carried over a VCC, ***llcEncap*** must be used. If the *Stp* component exists under the *AtmMpe*, ***llcEncap*** must be used. Specifying ***ipVcEncap*** indicates that all the VCCs (that is, *AtmConnection*s) under an *AtmMpe* component will use VC-based multiplexing and will carry IP PDUs only. Specifying ***llcBridgeEncap*** indicates that the VCC (that is, the *AtmConnection*) under an *AtmMpe* component will use the bridged Ethernet encapsulation format specified in RFC-1483. Note that when setting the *encapType* attribute to ***llcBridgeEncap***, the *maxTransmissionUnit* must be set within the ***[256 .. 1524]*** range.
Mib	no_mib
Values	llcEncap ipVcEncap llcBridgeEncap
Default	llcEncap

GROUP Rtr Vrf If AtmMpe **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock*

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command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf If AtmMpe operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf If AtmMpe usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If AtmMpe OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Vrf If AtmMpe SpvcTerminationPoint (Stp)

Groups	GROUP Rtr Vrf If AtmMpe Stp Provisioned (Prov) GROUP Rtr Vrf If AtmMpe Stp Operational (Oper)
Scope	Application
Description	*AtmMpe/n Stp* *Rtr/<string> If/<IP addr> AtmMpe Stp* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Stp* This component specifies the SPVC related provisioning for the *AtmMpe* component. Its presence identifies an *AtmMpe* component that contains one or more SPVC connections.
Mib	no_mib
Common Verbs	Help List Display Add DELete

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GROUP Rtr Vrf If AtmMpe Stp **Provisioned (Prov)**

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SpvcTerminationPoint* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Stp **localAddress (laddr)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of this *AtmMpe* component. The default is an empty string. If no NSAP address is provisioned, a default NSAP address is provided. To view the generated default address refer to the *opLocalAddress* attribute under this component after the *act prov* command is executed.
Mib	no_mib
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Stp **softPvcRetryPeriod (retry)**

Access	Read: All Write: All
Description	This attribute specifies the interval at which an SPVC connection attempts establishment after a failed setup attempt occurs. The *softPvcRetryPeriod* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	no_mib
Values	Decimal (10..3600)
Units	seconds
Default	20

ATTRIBUTE Rtr Vrf If AtmMpe Stp **softPvcHoldOffTime (sHoldOffTime)**

Access	Read: All Write: All
Description	This attribute specifies how long to hold off before attempting to reestablish a connection after an established SPVC connection is cleared/released. The *softPvcHoldOffTime* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	no_mib
Values	Decimal (0; 50..3600000)

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Units	msec
Default	20000

GROUP Rtr Vrf If AtmMpe Stp **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SpvcTerminationPoint* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Stp **opLocalAddress (addr)**

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of this *AtmMpe* component. The value is the same as the provisioned *laddr*. If the *laddr* is not provisioned, the value of *addr* is automatically generated by the software.
Mib	no_mib
Values	String (0..20, Hex)
Default	""

COMPONENT Rtr Vrf If AtmMpe **AtmConnection (Ac)**

Instance	Decimal (1..255)
Groups	GROUP Rtr Vrf If AtmMpe Ac Provisioned (Prov) GROUP Rtr Vrf If AtmMpe Ac OsiState (State) GROUP Rtr Vrf If AtmMpe Ac Operational (Oper) GROUP Rtr Vrf If AtmMpe Ac Statistics (Stats) GROUP Rtr Vrf If AtmMpe Ac IpIfLink
Scope	Application
Description	*AtmMpe/n AtmConnection/n* *Rtr/<string> If/<IP addr> AtmMpe AtmConnection/n* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe AtmConnection/n* This component represents a virtual channel through which inter-networking frames are transported using RFC 1483 encapsulation. The *AtmConnection* component contains OSI state information, frame based statistics, and the linkage to an ATM virtual channel connection.

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This component's instance value is used by higher-layer protocols when referring to a specific ATM connection.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf If AtmMpe Ac SourcePvc (SrcPvc) COMPONENT Rtr Vrf If AtmMpe Ac DestinationPvc (DstPvc)
Dyn. Subcomp.	COMPONENT Rtr Vrf If AtmMpe Ac AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If AtmMpe Ac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmConnection* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac atmConnection (link)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint, *AtmIf/n Vcc/vpi.vci Nep,* that this connection is associated with. It must not be provisioned for an SPVC connection.
Mib	no_mib
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the *AtmConnection.* This value is used to distinguish the connection from others for the purpose of IP and MPLS forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If a packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one *AtmConnection*, then one of the connections is selected for

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transmitting the packet.

For IP packets the selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. For MPLS packets the selection is based on either the DSCP field of the IP packet or the EXP field of the MPLS packet.

DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component.
EXP based selection of the the outgoing connection is explained in the description of the *MplsServiceMap* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *AtmConnection*.

If the *AtmConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the *AtmConnection*. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	no_mib
Values	Decimal (0..3)
Default	0

ATTRIBUTE Rtr Vrf If AtmMpe Ac **mplsSignaling (mplsSig)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this AtmMpe Ac is dedicated for MPLS signaling (LDP or CR-LDP), or shared between MPLS and IP. If the value is ***dedicated***, the *Ac* is dedicated for MPLS signaling; the route is not found in IP ARP. If the value is ***shared***, the *Ac* is accessible by IP. The checking of this provisionable attribute is done through semantic checking. The attribute takes on the value ***shared*** by default, and can only be ***dedicated*** if there are more than one *Ac* under the *AtmMpe*.
Mib	no_mib
Values	shared dedicated
Default	shared

GROUP Rtr Vrf If AtmMpe Ac **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the

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component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib no_mib

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Rtr Vrf If AtmMpe Ac **operationalState (osiOper)**

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib no_mib

Values enabled (ena)
disabled (dis)

Default disabled

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ATTRIBUTE Rtr Vrf If AtmMpe Ac **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If AtmMpe Ac **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the *AtmConnection* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac **speed**

Access	Read only
Description	This attribute indicates the approximate bit rate for the connection. The bit rate is determined from the cell rate provisioned for the *Vcc* linked to this connection. The cell rate is multiplied by 53 bytes per cell and 8 bits per byte to obtain the bit rate. The *ifSpeed* of the entry in the ifTable corresponding to the *AtmMpe* component is the lowest speed of all the connections associated with the *AtmMpe* component. This attribute is always equal to 0 for an SPVC.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

GROUP Rtr Vrf If AtmMpe Ac **Statistics (Stats)**

Properties	Operational

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Description	This group contains the frame based statistics maintained for the *AtmConnection* component. For cell based statistics, see the *Vcc* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac **outPackets**

Access	Read only
Description	This attribute counts the total number of packets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac **outOctets**

Access	Read only
Description	This attribute counts the total number of octets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac **outDiscards**

Access	Read only
Description	This attribute counts the total number of packets which were supposed to be sent on this connection but were discarded due to congestion or the connection being down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac **inPackets**

Access	Read only
Description	This attribute counts the total number of packets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Rtr Vrf If AtmMpe Ac **inOctets**

Access	Read only
Description	The attribute counts the total number of octets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac **inUnknownProtos**

Access	Read only
Description	This attribute counts the total number of packets received on this connection which were discarded because they contained an unknown or unsupported protocol (includes packets received for protocols not currently bound to the associated *ProtocolPort* component). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac **inErrors**

Access	Read only
Description	This attribute counts the total number of packets received on the connection which contained errors preventing them from being delivered to a higher-layer protocol (includes short frames). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Vrf If AtmMpe Ac **IpIfLink**

Properties	Provisioned
Description	This group contains the link between this component and an *IpLogicalInterface*.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac **linkToIpLogicalInterface (ipIf)**

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with.

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This attribute is not applicable and cannot be set when the *AtmConection* component is added under an *Rtr If AtmMpe* or an *Rtr Vrf If AtmMpe* component.

When set, the value of this attribute must be consistent with the *linkToPrototocolPort* attribute value of the parent *AtmMpe* component. That is, they must both point to the same *PrototocolPort* component.

Mib: no_mib

Values: Link (Service, linkToMediaConnection)

Default: No default

COMPONENT Rtr Vrf If AtmMpe Ac SourcePvc (SrcPvc)

Groups: GROUP Rtr Vrf If AtmMpe Ac SrcPvc Provisioned (Prov)
GROUP Rtr Vrf If AtmMpe Ac SrcPvc Operational (Oper)

Scope: Application

Description:
AtmMpe/n Ac/m SrcPvc
Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
This component contains addressing and control information used by the calling SPVC endpoint to set up an SPVC connection to a remote called SPVC endpoint. An *Stp* component must exist under the *Ac* component if a *SrcPvc* component exists.

Mib: AtmMpeSpvc

Subcomponents: COMPONENT Rtr Vrf If AtmMpe Ac SrcPvc TrafficManagement (Tm)

Common Verbs:
Help
List
Display
Add
DELete

VERB Clear (Clr) Rtr Vrf If AtmMpe Ac SrcPvc

Impact: Service

Description:
Clear AtmMpe/n Ac/m SrcPvc
Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it.

If there is no active SPVC, the clear command has no effect.

GROUP Rtr Vrf If AtmMpe Ac SrcPvc Provisioned (Prov)

Properties: Provisioned

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Description	This attribute group contains the provisionable attributes of the *SourcePvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc **remoteAddress (raddr)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of the called SPVC endpoint (this must be a remote *AtmMpe* component).
Mib	AtmMpeSpvc
Values	String (20, Hex)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc **remoteConnectionIdentifier (rci)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the remote connection identifier of the SPVC. It is provisioned with the *Ac* instance of the *AtmMpe Ac* component at the called SPVC endpoint.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	1

GROUP Rtr Vrf If AtmMpe Ac SrcPvc **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

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ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc retryCount (retry)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed connection attempts.
Mib	AtmMpeSpvc
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT Rtr Vrf If AtmMpe Ac SrcPvc TrafficManagement (Tm)

Groups	GROUP Rtr Vrf If AtmMpe Ac SrcPvc Tm Provisioned (Prov)
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc Tm* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* This component contains ATM QoS information used by the calling endpoint of an SPVC connection to request a particular QoS from ATM.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP Rtr Vrf If AtmMpe Ac SrcPvc Tm Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *TrafficManagement* component.
Mib	AtmMpeSpvc

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ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc Tm **atmServiceCategory (service)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the desired ATM service category for this connection.
Mib	AtmMpeSpvc
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr)
Default	unspecifiedBitRate

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc Tm **peakCellRate (pcr)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the desired peak cell rate (PCR) in both directions for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	AtmMpeSpvc
Values	Decimal (0..2147483647)
Default	0

COMPONENT Rtr Vrf If AtmMpe Ac **DestinationPvc (DstPvc)**

Groups	GROUP Rtr Vrf If AtmMpe Ac DstPvc Operational (Oper)
Scope	Application
Description	*AtmMpe/n Ac/m DstPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* The *DestinationPvc* component represents the called endpoint of an SPVC connection.
Mib	AtmMpeSpvc
Common Verbs	Help List Display Add DELete

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VERB Clear (Clr) Rtr Vrf If AtmMpe Ac DstPvc

Impact	Service
Description	*Clear AtmMpe/n Ac/m DstPvc* *Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it. If there is no active SPVC, the clear command has no effect.

GROUP Rtr Vrf If AtmMpe Ac DstPvc **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes for the *DstPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac DstPvc **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac DstPvc **remoteAddress (raddr)**

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of the remote (calling) endpoint. If a connection is not established, *remoteAddress* is an ***empty string***.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	""

ATTRIBUTE Rtr Vrf If AtmMpe Ac DstPvc **remoteConnectionIdentifier (rci)**

Access	Read: All Write: Illegal
Description	This attribute indicates the remote connection identifier of the remote (calling) SPVC endpoint (that is, the *Ac* instance of the remote *AtmMpe Ac* component). If the connection is not established, the *remoteConnectionIdentifier* is an ***empty string***.

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Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac DstPvc **lastClearCause (cause)**

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT Rtr Vrf If AtmMpe Ac **AtmConnection (AtmCon)**

Groups	GROUP Rtr Vrf If AtmMpe Ac AtmCon Operational (Oper)
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP Rtr Vrf If AtmMpe Ac AtmCon **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac AtmCon **nextHop**

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmMpeSpvc

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Values	The name of the component
Default	No default

COMPONENT Rtr Vrf If BootpPort (BootpP)

Groups	GROUP Rtr Vrf If BootpP Provisioned (Prov) GROUP Rtr Vrf If BootpP AdministrativeControl (AdminControl) GROUP Rtr Vrf If BootpP OperationalStatus (OperStatus) GROUP Rtr Vrf If BootpP OsiState (State) GROUP Rtr Vrf If BootpP Statistics (Stats)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort BootpPort* *Rtr/<string> Interface/<string> BootpPort* *Rtr/<string> Vrf/<string> Interface/<string> BootpPort* An *BootpPort* component must be provisioned for each *IpPort* or *Interface* where BOOTP request messages will be received. Each *BootpPort* component can be provisioned with a set of relay addresses. Each BOOTP request message received on this port will be sent to the provisioned set of relay addresses.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If BootpP Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *BootpPort* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP relayForwardStatus (status)

Access	Read and write
Description	This attribute controls how BOOTP request packets, received on another port, will be flooded out this port. If *relayForwardStatus* is ***enabled***, BOOTP requests received on another port will be broadcast out this port. When *relayForwardStatus* is ***disabled***, BOOTP requests will not be broadcast out this port. If ***auto*** is used, the bridge spanning tree database is used to determine if BOOTP requests should be broadcast out this port. Note that when using ***enabled***, it is possible to create misconfigurations which will result in broadcast storms. When using this feature with multiple routers, make sure there are no broadcast forwarding loops. Using ***auto***

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with bridge spanning tree is safer to use if the network is running bridge spanning tree.

Note that for ***auto*** to have effect, bridge spanning tree must be running on the corresponding *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface*.

Mib	no_mib
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Rtr Vrf If BootpP **bootpLogicalInterface (portIf)**

Access	Read and write
Description	This attribute identifies the logical interface whose address is to be the GIADDR of this BOOTP port. If not set, the address of the first logical port or Interface is chosen.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf If BootpP **relayAddress (addr)**

Access	Read and write
Description	This attribute identifies a list of relay addresses. When a BOOTP request message is received on this port, the request will be forwarded to the IP addresses provisioned in *relayAddress*. Note that BOOTP requests are also broadcast out all other *BootpPort*'s according to the *relayForwardStatus* of the outgoing port.
Mib	no_mib
List of	IP address
List Size	3
Default	No default

GROUP Rtr Vrf If BootpP **AdministrativeControl (AdminControl)**

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP **snmpAdminStatus**

Access	Read and write

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Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If BootpP OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If BootpP OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf If BootpP operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf If BootpP usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If BootpP **Statistics (Stats)**

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP **inRequests**

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP **inReplies**

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP **outRequests**

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP **outReplies**

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Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf If OspfInterface (OspfIf)

Groups	GROUP Rtr Vrf If OspfIf Provisioned (Prov) GROUP Rtr Vrf If OspfIf Operational (Oper) GROUP Rtr Vrf If OspfIf Metric
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf* *Rtr/<string> Interface/<Ip Address> OspfIf* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf*

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An OspfIf component can be created under each *logicalIf* or *Interface* to run OSPF protocol.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf If OspfIf Md5KeyId (KeyId) COMPONENT Rtr Vrf If OspfIf TypeOfService (TOS) COMPONENT Rtr Vrf If OspfIf Neighbor (Nbr)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If OspfIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes identifies a provisionable set of attributes.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf areaId

Access	Read and write
Description	The area Id this Ospf interface belongs to.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf If OspfIf ifType

Access	Read and write
Description	This attribute specifies the type of this *OspfInterface*. Neighbors are dynamically discovered using the Hello protocol for an *ifType* of ***broadcast***, ***pointToPoint***, or ***pointToMultipoint*** when *pointToMultiPointMode* is set to ***broadcast***. A *Neighbor* component must be configured for an *ifType of* ***nbma*** or ***pointToMultiPoint***, when *pointToMultiPointMode* is set to ***nonBroadcast***. When *ifType* is set to ***passive***, neighbors are not required.
Mib	no_mib
Values	broadcast nbma pointToPoint passive pointToMultiPoint (ptmp)
Default	No default

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ATTRIBUTE Rtr Vrf If OspfIf **snmpAdminStatus**

Access	Read and write
Description	The administrative status of this Ospf interface.
Mib	no_mib
Values	up down
Default	up

ATTRIBUTE Rtr Vrf If OspfIf **rtrPriority (rtrPri)**

Access	Read and write
Description	The priority of this interface. Used in multi-access networks, this field is used in the designated router election algorithm. The value 0 signifies that the router is not eligible to become the designated router on this particular protocol port. In the event of a tie in this value, routers will use their *routerId* as a tie breaker.
Mib	no_mib
Values	Decimal (0..255)
Default	1

ATTRIBUTE Rtr Vrf If OspfIf **transitDelay**

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Rtr Vrf If OspfIf **retransInterval (retransInt)**

Access	Read and write
Description	The number of seconds between link-state advertisements retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	5

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ATTRIBUTE Rtr Vrf If Ospflf **helloInterval (helloInt)**

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Rtr Vrf If Ospflf **rtrDeadInterval (rtrDeadInt)**

Access	Read and write
Description	The number of seconds that a router's hello packets have not been seen before it's neighbors declare the router down. This should be some multiple of the *helloIntereval*. This value must be the same for all routers attached to a common network.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	40

ATTRIBUTE Rtr Vrf If Ospflf **pollInterval (pollInt)**

Access	Read and write
Description	The largest time interval, in seconds, between the hello packets sent to an inactive non-broadcast multi-access neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	120

ATTRIBUTE Rtr Vrf If Ospflf **authKey**

Access	Write only
Description	The Authentication Key. If the value of the attribute *authType* of an *AreaEntry* is ***simplePassword***, and the *authKey* length is shorter than 8 octets, then the value of *authKey* will be left adjusted zero-filled to 8 octets.
Mib	no_mib
Values	String (1..8, Hex)

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Default	0000000000000000

ATTRIBUTE Rtr Vrf If OspfIf **multicastForwarding (multicastFwd)**

Access	Read and write
Description	The way multicasts should be forwarded on this interface; non forwarded, forwarded as data-link multicasts, or forwarded as data-link unicasts. Data-link multicasting is not meaningful on point-to-point and NBMA(No Broadcast Multi Access) interfaces, and setting this attribute to blocked effectively disables all multicast forwarding.
Mib	no_mib
Values	blocked
Default	blocked

ATTRIBUTE Rtr Vrf If OspfIf **pointToMultiPointMode (ptmpmode)**

Access	Read and write
Description	This attribute specifies the Point-to-Multipoint mode to use when the *ifType* of this *OspfInterface* is ***pointToMultipoint***. A value of ***nonBroadcast*** restricts this interface to only send unicast packets, Hence, a *Neighbor* component must be configured. A value of ***broadcast*** enables sending multicast OSPF Hello packets to dynamically discover neighbors.
Mib	no_mib
Values	nonBroadcast (nbc) broadcast (bc)
Default	nonBroadcast

ATTRIBUTE Rtr Vrf If OspfIf **authType**

Access	Read and write
Description	The authentication type specified for this *Ospf* interface.
Mib	no_mib
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Rtr Vrf If OspfIf **Operational (Oper)**

Properties	Operational
Description	This group of attributes identifies operational state that this interface is performing.
Mib	no_mib

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ATTRIBUTE Rtr Vrf If Ospfif **state**

Access	Read only
Description	The state of the OSPF interface.
Mib	no_mib
Values	down loopback waiting pointToPoint designatedRouter backupDesignatedRouter otherDesignatedRouter
Default	designatedRouter

ATTRIBUTE Rtr Vrf If Ospfif **designatedRouter**

Access	Read only
Description	The Ip address of the designated router.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf If Ospfif **backupDesignatedRouter**

Access	Read only
Description	The Ip address of the backup designated router
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf If Ospfif **events**

Access	Read only
Description	The number of times this OSPF interface has changed its state or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Vrf If Ospfif **Metric**

Properties	Operational
Description	This group contains the operational metric attribute of this interface.

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Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf **metric**

Access	Read only
Description	This attribute indicates the metric being used by this *OspfIf*. The metric is derived in one of two ways: 1. If there is a *TypeOfService* component provisioned under this *OspfIf* component, then the value of the *metric* attribute is copied from the provisionable attribute *tosMetric*. 2. Otherwise, the metric is computed based on the interface speed. If the interface speed is greater than 100 Mbit/s, then the *metric* is 1. If the interface speed is less than 100 Mbit/s, then the metric is 100 Mbit/s divided by the interface speed. If the interface speed is unknown, then it is treated as 1.54 Mbit/s during the calculation. The value of interface speed is available by displaying the *ifSpeed* attribute of the corresponding *IfTableEntry* component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf If OspfIf **Md5KeyId (KeyId)**

Instance	Decimal (1..255)
Groups	GROUP Rtr Vrf If OspfIf KeyId Provisioned (Prov) GROUP Rtr Vrf If OspfIf KeyId Operational (Oper)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* This component contains the information about various MD5 Authentication keys.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If OspfIf KeyId **Provisioned (Prov)**

Properties	Provisioned

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Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf KeyId **md5Key (Key)**

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	no_mib
Values	String (0..16, ASCII)
Default	""

GROUP Rtr Vrf If OspfIf KeyId **Operational (Oper)**

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf KeyId **inUseForGeneration (inUse)**

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	no_mib
Values	true false
Default	false

COMPONENT Rtr Vrf If OspfIf **TypeOfService (TOS)**

Instance	Decimal (0..0)
Groups	GROUP Rtr Vrf If OspfIf TOS Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>*

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This component describes the metrics to be advertised for a specified interface at various types-of-service.

Mib: no_mib

Common Verbs: Help, List, Display, Add, DELete

GROUP Rtr Vrf If OspfIf TOS Provisioned (Prov)

Properties: Provisioned

Description: Identifies a provisionable set of attributes.

Mib: no_mib

ATTRIBUTE Rtr Vrf If OspfIf TOS tosMetric

Access: Read and write

Description: The metric using this typeOfService on this interface.

Mib: no_mib

Values: Decimal (0..65535)

Default: 1

COMPONENT Rtr Vrf If OspfIf Neighbor (Nbr)

Instance: IP address

Groups: GROUP Rtr Vrf If OspfIf Nbr Provisioned (Prov)
GROUP Rtr Vrf If OspfIf Nbr Operational (Oper)

Scope: Application

Description: *Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>*
Rtr/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>
Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>
This component represents a neighbor on a multi-access non-broadcast *OspfInterface* configured with its *ifType* attribute set to one of the following:
- ***nbma*** and the *rtrPriority* attribute is set to non-zero or
- ***pointToMultiPoint*** and *pointToMultiPointMode* is set to ***nonBroadcast***.

The operational attributes for this component can also be viewed from: *Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* or

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Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal> or
Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Vrf If Ospflf Nbr Provisioned (Prov)

Properties Provisioned

Description Identifies a group of Provisionable attributes.

Mib no_mib

ATTRIBUTE Rtr Vrf If Ospflf Nbr priority

Access Read and write

Description The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network. The higher the number, the better are the chances of being a designated router.

Mib no_mib

Values Decimal (0..255)

Default 1

GROUP Rtr Vrf If Ospflf Nbr Operational (Oper)

Properties Operational

Description Contains the Operational set of attributes for the Neighbor.

Mib no_mib

ATTRIBUTE Rtr Vrf If Ospflf Nbr rtrId

Access Read only

Description An Ip Address uniquely identifying the neighboring router in the Autonomous System.

Mib no_mib

Values IP address

Default No default

ATTRIBUTE Rtr Vrf If Ospflf Nbr options

Access Read only

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Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr **state**

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	no_mib
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr **events**

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr **lsRetransQlen**

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr **exchangeStatus**

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Access	Read only
Description	Indicates the exchange status for a neighbor Entry.
Mib	no_mib
Values	master slave
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr permanance

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	no_mib
Values	permanent dynamic
Default	permanent

COMPONENT Rtr Vrf If IsisInterface (IsisIf)

Groups	GROUP Rtr Vrf If IsisIf Provisioned (Prov) GROUP Rtr Vrf If IsisIf Operational (Oper) GROUP Rtr Vrf If IsisIf Statistics (Stats) GROUP Rtr Vrf If IsisIf ErrorStatistics (Errors)
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisInterface* An *IsisIf* component can be created under each *Interface* component to run the ISIS protocol. This component requires an associated *Isis* component to be provisioned. This component requires at least one *Level* subcomponent to be provisioned. If the underlying media is ATM based, this component requires an *AtmConn* subcomponent to be provisioned.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf If IsisIf IsisIfLevel (Level)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If IsisIf Provisioned (Prov)

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Properties	Provisioned
Description	This group contains the set of attributes used to configure an ISIS Interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf **snmpAdminStatus**

Access	Read: All Write: All
Description	This attribute specifies the administrative status of this *IsisInterface* component on this *Router*.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf If IsisIf **passive**

Access	Read: All Write: All
Description	This attribute specifies whether the *IsisInterface* should be passive. A passive interface is one whose IP address is advertised in the LSP, but is not involved in ISIS protocol activities (for example, transmitting LSPs and establishing adjacencies).
Mib	no_mib
Values	no yes
Default	no

ATTRIBUTE Rtr Vrf If IsisIf **lspInterval**

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the minimum time between transmission of successive LSPs on this interface. This minimum time applies to any LSP, whether it is the LSP of this *Router*, or another router's LSP that is being retransmitted.
Mib	no_mib
Values	Decimal (33..65535)
Units	msec
Default	100

ATTRIBUTE Rtr Vrf If IsisIf **lspRetransmitInterval**

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Access	Read: All Write: All
Description	This attribute specifies, in seconds, the minimum time to wait before retransmitting this *Router's* LSP on this interface. An LSP retransmission occurs if a previously transmitted LSP is not acknowledged. Retransmissions only occur on point-to-point links.
Mib	no_mib
Values	Decimal (1..300)
Units	seconds
Default	5

GROUP Rtr Vrf If IsisIf **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes associated with the ISIS protocol running on this interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf **upTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, that the ISIS protocol has been operational on this interface.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **adjacencyChanges (adjChanges)**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an adjacency on this interface has changed state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **operState (state)**

Access	Read: All Write: Illegal

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Description	This attribute indicates the operational state of the ISIS Interface.
Mib	no_mib
Values	adminDown down up
Default	No default

GROUP Rtr Vrf If IsisIf **Statistics (Stats)**

Properties	Operational
Description	The attributes in this group are statistics associated with the normal operation of this *IsisInterface* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf **txLsps**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **rxLsps**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **txPtpHellos**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Rtr Vrf If IsisIf **rxPtpHellos**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **txBroadcastHellos**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **rxBroadcastHellos**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **txCsnps**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **rxCsnps**

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Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) received on this interface since the last time this *Isis*If component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf txPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf rxPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf totalPacketsTxd

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf totalPacketsRxd

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Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Vrf If IsisIf **ErrorStatistics (Errors)**

Properties	Operational
Description	The attributes in this group are statistics associated with the operation of this *IsisInterface* component. Each attribute counts a specific abnormal event that has occurred since this component was last enabled.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf **initFails**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that initialization of this ISIS interface has failed.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **adjRejects**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an attempt to form an adjacency on this interface has failed.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf **rxUnknownPacketTypes**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of packets of unknown type that were received on this interface since the last time this *IsisIf* component became enabled.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf If IsisIf **IsisIfLevel (Level)**

Instance	Decimal (1..1)
Groups	GROUP Rtr Vrf If IsisIf Level Provisioned (Prov) GROUP Rtr Vrf If IsisIf Level Operational (Oper)
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisIf Level/<1..2>* The ISIS routing protocol supports a two-level routing hierarchy. This component represents ISIS routing aspects that are specific to each routing level for this ISIS interface. In the current release, only *Level/1* is supported.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If IsisIf Level **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the attributes used to independently configure each ISIS interface routing level.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf Level **metric**

Access	Read: All Write: All
Description	This attribute specifies the cost of this interface, which is used by the SPF algorithm in this and other routers. This value is advertised in the LSP.
Mib	no_mib
Values	Decimal (0..63)
Default	10

ATTRIBUTE Rtr Vrf If IsisIf Level **helloInterval**

Access	Read: All Write: All

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Description	This attribute specifies the time, in seconds, between transmission of successive hello messages (IIH PDU).
Mib	no_mib
Values	Decimal (1..20000)
Units	seconds
Default	10

ATTRIBUTE Rtr Vrf If IsisIf Level helloMultiplier

Access	Read: All Write: All
Description	This attribute specifies the factor by which the *helloInterval* attribute is multiplied in order to create the hold time value transmitted in the hello packets (IIH PDU). The hold time value is used by the receiving router to determine how long it should maintain the adjacency if a subsequent hello packet is not received.
Mib	no_mib
Values	Decimal (2..100)
Default	3

ATTRIBUTE Rtr Vrf If IsisIf Level csnpInterval

Access	Read: All Write: All
Description	This attribute specifies the time interval, in seconds, between successive transmissions of the CSNP PDUs.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	10

ATTRIBUTE Rtr Vrf If IsisIf Level priority

Access	Read: All Write: All
Description	This attribute specifies the DIS priority for this router. On a multi-access LAN, the router with the highest DIS priority is elected to represent the LAN. The elected router transmits an LSP for the pseudonode representing the LAN.
Mib	no_mib
Values	Decimal (0..127)
Default	64

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GROUP Rtr Vrf If IsisIf Level **Operational (Oper)**

Properties	Operational
Description	This group contains attributes representing the operational state of this *IsisIf Level* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf Level **disId**

Access	Read: All Write: Illegal
Description	This attribute indicates the system ID of the ISIS router acting as DIS for the LAN to which this interface is attached. For non-LAN interfaces, the value of this attribute is ***N/A***.
Mib	no_mib
Values	String (1..14, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf Level **disChanges**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DIS changes that have occurred on this interface for this level.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf Level **adjacencies**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active adjacencies that exist on this interface for this level.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf Level **timeToNextTxHello**

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, until the next Hello message is to be transmitted on this interface for this level.
Mib	no_mib

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Values	Decimal (0..600)
Units	seconds
Default	No default

COMPONENT Rtr Vrf If IngressServices (IS)

Groups	GROUP Rtr Vrf If IS IngressServicesLinks (IsLinks) GROUP Rtr Vrf If IS ServiceSpecification (Sp) GROUP Rtr Vrf If IS InterfaceServices (IntServ)
Scope	Application
Description	*Vr/<string> Pp/<string> Ip IngressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> IngressServices* This component and its subcomponents represent various traffic management services applied to IP traffic entering an interface.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Vrf If IS MeterStatistics (Meter)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If IS IngressServicesLinks (IsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic entering an interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IS linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic entering an interface.
Mib	no_mib
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Rtr Vrf If IS linkToPolicerProfile (policerLink)

Access	Read and write

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Description	This attribute specifies the *PolicerProfile* component applied to IP traffic entering an interface.
Mib	no_mib
Values	Link (Service, linkToPolicerUsers)
Default	No default

GROUP Rtr Vrf If IS ServiceSpecification (Sp)

Properties	Provisioned
Description	This group contains provisionable attributes of the *IngressServices* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IS discardPriorityMode (dpMode)

Access	Read and write
Description	This attribute specifies how drop precedence is assigned to IP traffic entering an interface. If this attribute is set to ***mapPhbToDp*** then drop precedence is assigned to IP traffic entering the interface as explained in the description of the *DifferentiatedServicesDomain* component. If this attribute is set to ***mapLayer2ToDp*** then the drop precedence assigned to IP traffic entering the interface is determined by the ingress Layer 2 media. For an IP packet arriving on *AtmMpe* the cell loss priority (CLP) bit in the ingress cell header is mapped to drop precedence value according to ATM traffic management provisioning. For an IP packet arriving on *FrDte or IpDlciGroup* the discard eligible (DE) bit in the ingress frame header is mapped to drop precedence value according to Frame Relay traffic management provisioning. For IP traffic arriving on other media ***high*** drop precedence is assigned. The *Rtr Interface IngressServices dpMode* and *Rtr Vrf Interface IngressServices dpMode* attributes must be set to ***mapPhbToDp***. The *IpPort IngressServices dpMode* attribute must be set to ***mapPhbToDp*** if the *linkToPolicerProfile* attribute is set or if the *IpPort* is associated with IP tunnel media. The *IpPort IngressServices dpMode* attribute has no effect if either of the following two conditions is true: 1) the *VirtualRouter* component does not have *DifferentiatedServicesDomain* subcomponent (see the description of the *CosPolicyGroup* component for more information about drop precedence in this case); 2) the IP packet leaves an interface where the *IpPort EgressServices linkToPolicerProfile* attribute is set (see the description of the

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PolicerProfile Meter PolicedPhb outOfProfile attribute for more information about drop precedence in this case).

Mib no_mib

Values mapPhbToDp
mapLayer2ToDp

Default mapPhbToDp

GROUP Rtr Vrf If IS InterfaceServices (IntServ)

Properties Provisioned

Description This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..

Mib no_mib

ATTRIBUTE Rtr Vrf If IS policerStatsSpooling (spool)

Access Read and write

Description This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled.

This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set.

This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.

Mib no_mib

Values off
on

Default off

COMPONENT Rtr Vrf If IS MeterStatistics (Meter)

Instance String (1..20, ASCII)

Groups GROUP Rtr Vrf If IS Meter Operational (Oper)
GROUP Rtr Vrf If IS Meter Statistics (Stats)

COLLECTED STATS Router VpnRouteForwarder Interface IngressServices MeterStatistics

Scope Application

Description *Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>*
Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>
Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/<string>
Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/<string>

This component represents operational data for a *Meter* component that

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has been activated at an interface.

One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr Vrf If IS Meter Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MeterStatistics* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf If IS Meter committedInformationRate (cir)

Access: Read only

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.

The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib: no_mib

Values: Decimal (0..600000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr Vrf If IS Meter excessInformationRate (eir)

Access: Read only

Description: This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Mib: no_mib

Values: Decimal (0..50000000)

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Units	bit/s
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **committedBurstSize (bc)**

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..600000000)
Units	bits
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **excessBurstSize (be)**

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **measurmentInterval (t)**

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **status**

Access	Read only

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Description	This attribute indicates whether the meter is enabled or disabled at the interface where the policer is configured. The meter may be disabled if engineering limits for IP Policing on the FP are exceeded. Each policer assignment that involves a disabled meter should be removed.
Mib	no_mib
Values	disabled enabled
Default	No default

GROUP Rtr Vrf If IS Meter **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IS Meter **packetsReceived**

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **octetsReceived**

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **eirPacketsReceived (excessPackets)**

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer

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Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **eirOctetsReceived (excessOctets)**

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **packetsRemarked**

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **octetsRemarked**

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **packetsDiscarded**

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter **octetsDiscarded**

Access	Read only

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Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default
Default	COLLECTED STATS Router VpnRouteForwarder Interface IngressServices MeterStatistics
Description	The statistics record generated by the Router VpnRouteForwarder Interface IngressServices MeterStatistics component.

ATTRIBUTE Rtr Vrf If IS Meter **committedInformationRate (cir)**

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr Vrf If IS Meter **excessInformationRate (eir)**

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter **committedBurstSize (bc)**

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr Vrf If IS Meter **excessBurstSize (be)**

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter **measurmentInterval (t)**

Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*);

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otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values — Decimal (0..4294967295)

ATTRIBUTE Rtr Vrf If IS Meter packetsReceived

Description — This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values — Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsReceived

Description — This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values — Long Integer

ATTRIBUTE Rtr Vrf If IS Meter eirPacketsReceived (excessPackets)

Description — This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr Vrf If IS Meter eirOctetsReceived (excessOctets)

Description — This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr Vrf If IS Meter packetsRemarked

Description — This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsRemarked

Description — This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr Vrf If IS Meter packetsDiscarded

Description — This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsDiscarded

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Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

COMPONENT Rtr Vrf If EgressServices (ES)

Groups	GROUP Rtr Vrf If ES EgressServicesLinks (EsLinks) GROUP Rtr Vrf If ES InterfaceServices (IntServ)
Scope	Application
Description	*Vr/<string> Pp/<string> Ip EgressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> EgressServices* This component and its subcomponents represent various traffic management services applied to IP traffic leaving an interface.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Vrf If ES MeterStatistics (Meter)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If ES EgressServicesLinks (EsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic leaving an interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If ES linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic leaving an interface.
Mib	no_mib
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Rtr Vrf If ES linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic leaving an interface.

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Mib	no_mib
Values	Link (Service, linkToPolicerUsers)
Default	No default

GROUP Rtr Vrf If ES InterfaceServices (IntServ)

Properties	Provisioned
Description	This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..
Mib	no_mib

ATTRIBUTE Rtr Vrf If ES policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	no_mib
Values	off on
Default	off

COMPONENT Rtr Vrf If ES MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	GROUP Rtr Vrf If ES Meter Operational (Oper) GROUP Rtr Vrf If ES Meter Statistics (Stats)

COLLECTED STATS Router VpnRouteForwarder Interface EgressServices MeterStatistics

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/<string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is

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assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr Vrf If ES Meter Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MeterStatistics* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf If ES Meter committedInformationRate (cir)

Access: Read only

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.

The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib: no_mib

Values: Decimal (0..600000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr Vrf If ES Meter excessInformationRate (eir)

Access: Read only

Description: This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Mib: no_mib

Values: Decimal (0..50000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr Vrf If ES Meter committedBurstSize (bc)

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Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..600000000)
Units	bits
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **excessBurstSize (be)**

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **measurmentInterval (t)**

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **status**

Access	Read only
Description	This attribute indicates whether the meter is enabled or disabled at the interface where the policer is configured. The meter may be disabled if engineering limits for IP Policing on the FP are exceeded. Each policer assignment that involves a disabled meter should be removed.
Mib	no_mib

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Values	disabled enabled
Default	No default

GROUP Rtr Vrf If ES Meter **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If ES Meter **packetsReceived**

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **octetsReceived**

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **eirPacketsReceived (excessPackets)**

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **eirOctetsReceived (excessOctets)**

Access	Read only

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Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **packetsRemarked**

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **octetsRemarked**

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **packetsDiscarded**

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter **octetsDiscarded**

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer

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Default	No default
Default	COLLECTED STATS Router VpnRouteForwarder Interface EgressServices MeterStatistics
Description	The statistics record generated by the Router VpnRouteForwarder Interface EgressServices MeterStatistics component.

ATTRIBUTE Rtr Vrf If ES Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr Vrf If ES Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr Vrf If ES Meter excessBurstSize (be)

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter measurmentInterval (t)

Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Values	Decimal (0..4294967295)

ATTRIBUTE Rtr Vrf If ES Meter packetsReceived

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Description	This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **octetsReceived**

Description	This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **eirPacketsReceived (excessPackets)**

Description	This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **eirOctetsReceived (excessOctets)**

Description	This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **packetsRemarked**

Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **octetsRemarked**

Description	This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **packetsDiscarded**

Description	This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter **octetsDiscarded**

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

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COMPONENT Rtr Vrf If RipInterface (RipIf)

Groups	GROUP Rtr Vrf If RipIf Provisioned (Prov) GROUP Rtr Vrf If RipIf Operational (Stat)
Scope	Application
Description	*Vr/<X> Pp/<X> IpPort LogicalIf/<Ip Address> RipInterface* *Rtr/<X> Interface/<X> RipInterface* *Rtr/<X> Vrf/<X> Interface/<X> RipInterface* This component is used to configure a *LogicalIf* or an *Interface* to run RIP protocol.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Vrf If RipIf Neighbor (Nbr)
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If RipIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *RipIf* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RipIf snmpAdminStatus

Access	Read and write
Description	Identifies the administrative status of this *RipInterface*. Setting this value to ***disabled*** will have the effect of rendering it inactive.
Mib	no_mib
Values	up down
Default	up

ATTRIBUTE Rtr Vrf If RipIf metric

Access	Read and write
Description	This attribute is the RIP metric for this logical interface.
Mib	no_mib
Values	Decimal (1..16)
Default	1

ATTRIBUTE Rtr Vrf If RipIf poisonReverseFlag (poison)

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Access	Read and write
Description	If the value of this attribute is set to ***true***, then poison reverse algorithm is used when sending out the updates otherwise use split horizon only.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf If RipIf **flashUpdateFlag**

Access	Read and write
Description	This attribute when set to ***true*** will send updates when updates are received; otherwise RIP will wait till the next update period.
Mib	no_mib
Values	true false
Default	true

ATTRIBUTE Rtr Vrf If RipIf **networkRouteStatus**

Access	Read and write
Description	This attribute determines what type of network routes will be sent and whether a default route will be generated for this *RipInterface*. Generated default routes will not go into the routing table, but are sent in the updates going out on the interface. The possible values for this attribute are: ***naturalNetWithOutDefaultRoute*** - This value will cause normal RIP network routes to be put in the update. This means that the address of *logicalIf* or *Interface* pertaining to this *RipInterface* knowledge is taken into account in determining if the subnetted network or the natural network is sent for any route going into this update. ***naturalNetWithDefaultRoute*** - Selecting this value will cause a default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*. ***defaultRouteOnly*** - Selection of this value causes the default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*. NOTE: No other routes will go in the update. ***subnetsOnly*** - selection of this value will cause only subnet information to be put in the update. No default routes will be generated or passed on. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be put in the update.

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NOTE: this also effects receiving of updates on this interface. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be accepted on a received RIP update on this *RipInterface*.

Mib: no_mib

Values:
naturalNetWithOutDefaultRoute (noDefault)
naturalNetWithDefaultRoute (withDefault)
defaultRouteOnly (defaultOnly)
subnetsOnly (subnets)

Default: naturalNetWithOutDefaultRoute

ATTRIBUTE Rtr Vrf If RipIf **defaultRouteMetric**

Access: Read and write

Description: This attribute identifies the metric value for the default route. This value is only used if the attribute *networkRouteStatus* is configured with a value of either ***naturalNetWithDefaultRoute*** or ***defaultRouteOnly***

Mib: no_mib

Values: Decimal (1..16)

Default: 1

ATTRIBUTE Rtr Vrf If RipIf **acceptDefault**

Access: Read and write

Description: If this attribute is set to true, then accept the default route from this interface.

Mib: no_mib

Values:
true
false

Default: true

ATTRIBUTE Rtr Vrf If RipIf **ifConfSend**

Access: Read and write

Description: This attribute identifies what the router sends on this *RipIf*. ***ripVersion1*** implies sending RIP updates compliant with RFC 1058. ***rip1Compatible*** implies broadcasting RIP-2 updates according to RFC 1058. ***ripVersion2*** implies multicasting RIP-2 updates.

Mib: no_mib

Values:
doNotSend (silent)
ripVersion1 (v1)
rip1Compatible (v2b)
ripVersion2 (v2)

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Default	rip1Compatible

ATTRIBUTE Rtr Vrf If RipIf **ifConfReceive**

Access	Read and write
Description	This attribute identifies which version of RIP updates are to be accepted on this *RipIf*. Note that ***rip2*** and ***rip1OrRip2*** implies reception of multicast packets.
Mib	no_mib
Values	rip1 (v1) rip2 (v2) rip1OrRip2 (both) doNotReceive (reject)
Default	rip1OrRip2

GROUP Rtr Vrf If RipIf **Operational (Stat)**

Properties	Operational
Description	This group contains operational attributes of the *RipIf* component. These attributes are statistical data corresponding to the RIP-2 standard MIB (rfc 1724) rip2Status table.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RipIf **ifBadPacketRcv**

Access	Read only
Description	This attribute counts the number of RIP response packets recieved by the RIP process which were subsequently discarded for any reason.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If RipIf **ifBadRouteRcv**

Access	Read only
Description	This attribute counts how many routes, in valid RIP packets, were ignored for any reason.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If RipIf **ifTriggeredUpdates**

Access	Read only

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Description	This attribute counts the number of triggered updates actually sent on this interface. This explicitly does NOT include full updates sent containing new information.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf If RipIf Neighbor (Nbr)

Instance	IP address
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* This component is used to configure the Ip Address of the non broadcast multi access (NBMA) neighbor.
Mib	no_mib
Common Verbs	Help List Display Add DELete

COMPONENT Rtr Vrf If VrrpPort

Instance	Decimal (1..255)
Groups	GROUP Rtr Vrf If VrrpPort Provisioned (Prov) GROUP Rtr Vrf If VrrpPort Operational (Oper) GROUP Rtr Vrf If VrrpPort AdministrativeControl (AdminControl) GROUP Rtr Vrf If VrrpPort OperationalStatus (OperStatus) GROUP Rtr Vrf If VrrpPort OsiState (State)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort VrrpPort/<n>* *Rtr/<string> Vrf/<string> Interface VrrpPort/<n>* This component contains attributes that define a VRRP virtual router

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	instance associated with this *IpPort*. The component instance (n) is the VRRP virtual router VRID.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If VrrpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the VrrpPort component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort priority

Access	Read and write
Description	This attribute specifies the priority of *VrrpPort* during election of a master VRRP virtual router. A priority of 0 (zero) is reserved for the master to indicate it is releasing responsibility for the VRRP virtual router. A priority of 255 is reserved for the VRRP virtual router that owns (has as real interfaces) the IP addresses associated with this *VrrpPort*.
Mib	no_mib
Values	Decimal (1..255)
Default	100

ATTRIBUTE Rtr Vrf If VrrpPort advertisementInterval

Access	Read and write
Description	This attribute specifies the time interval between VRRP advertisements which will be sent by the master VRRP virtual router.
Mib	no_mib
Values	Decimal (1..255)
Units	seconds
Default	1

ATTRIBUTE Rtr Vrf If VrrpPort listLinkToCriticalIp (listLinkToCIp)

Access	Read and write

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Description	This attribute specifies the *CriticalIp* instance to which the *VrrpPort* instance is linked. If the *IpPort* associated with this *CriticalIp* instance becomes disabled, the *VrrpPort* becomes disabled..
Mib	no_mib
Values	Link (Service, listLinkToVrrp)
Default	No default

ATTRIBUTE Rtr Vrf If VrrpPort **holdDownTime (hdt)**

Access	Read and write
Description	This attribute specifies the length of time that a VrrpPort instance is prevented from participating in a VRRP Master virtual router election, if it has given up Mastership due to a failure, once the failure has been corrected. This allows the network routing protocol to re-establish a route to this VrrpPort instance when it becomes available. When the length of the holdDownTime is reached, a VRRP Master virtual router election occurs and the highest priority VrrpPort instance will become the VRRP Master virtual router. A holdDownTime attribute value of notApplicable disables the holdDownTime functionality. Any other value should be calculated based on an estimate of the time requiredfor the network routing protocol to establish a route to a VrrpPort instance, that has been disabled by a failure, once it has recovered. If the new VRRP Master virtual router fails within the holdDownTime interval and no other VRRP Backup virtual router is available, the holdDownTime functionality is canceled and the highest priority VrrpPort instance will become the VRRP Master virtual router. In a situation where both the VRRP Master and Backup virtual routers are on the same MSS, and both are affected by the same failure, the holdDownTime functionality doesn't add any value since the network routes to both VrrpPort instances are affected.
Mib	no_mib
Values	Decimal (1..3600) notApplicable (na)
Units	seconds
Default	notApplicable

ATTRIBUTE Rtr Vrf If VrrpPort **ipAddresses**

Access	Read and write
Description	This attribute specifies one or more IP addresses associated with this *VrrpPort* instance (VRID). All VRRP virtual routers with this VRID must have the same set of IP addresses configured. Each of the IP addresses

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	in the list must be on the same subnet as an *IpLogicalInterface* for the *IpPort*. All the IP addresses in the list must be owned by this VRRP virtual router or by other VRRP virtual routers but not a combination.
Mib	no_mib
List of	IP address
Default	No default

GROUP Rtr Vrf If VrrpPort Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *VrrpPort* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort virtualRouterState

Access	Read only
Description	This attribute indicates the state of this *VrrpPort* instance. It will be one of three states: initialize, backup and master.
Mib	no_mib
Values	initialize backup master
Default	initialize

ATTRIBUTE Rtr Vrf If VrrpPort virtualRouterPhysicalAddress

Access	Read only
Description	This attributes indicates the physcial address of the *VrrpPort*. The address is a virtual physical address of the form “00-00-5e-00-01-VRID” where the VRID is the instance value of the *VrrpPort*.
Mib	no_mib
Values	String (6, Dashed Hex)
Default	No default

GROUP Rtr Vrf If VrrpPort AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort snmpAdminStatus

Access	Read and write

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Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If VrrpPort **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If VrrpPort **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf If VrrpPort operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf If VrrpPort usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

COMPONENT Rtr Vrf If Loopback (Lb)

Groups:
GROUP Rtr Vrf If Lb IfEntryProv (IfEntry)
GROUP Rtr Vrf If Lb Provisioned (Prov)
GROUP Rtr Vrf If Lb OsiState (State)
GROUP Rtr Vrf If Lb OperationalStatus (OperStatus)

Scope: Application

Description:
Rtr/<string> Interface/<string> Loopback
Rtr/<string> Vrf/<string> Interface/<string> Loopback
The *Loopback* component represents an instance of a logical media. *Loopback* provides IP connectivity between routers on the same module, and supports an 'always-up IP interface' concept; i.e interface stays up unless it is administratively disabled or the hardware goes down.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf If Lb IfEntryProv (IfEntry)

Properties: Provisioned

Description: This group contains the provisionable attributes for the ifEntry.

Mib: no_mib

ATTRIBUTE Rtr Vrf If Lb ifAdminStatus (ifState)

Access: Read and write

Description: The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

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Default	up

ATTRIBUTE Rtr Vrf If Lb **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr Vrf If Lb **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Loopback* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Lb **mode**

Access	Read and write
Criticality	Component
Description	This attribute specifies the mode of operation of the *Loopback*. The following modes are supported: ***alwaysUpInterface***, and ***primaryLoopback***. ***alwaysUpInterface***: This mode limits the *Loopback* to provide the functionality of an 'always up interface' only. Inter router communication is not possible when this mode is selected. Memory consumption by the *Loopback If* is significantly less on the FP when this mode is selected. Hence this mode should be used when the sole purpose of the *Loopback If* is to provide an always up interface for an application like BGP4. ***primaryLoopback***: Only supported under *Router*; a router can have only one Interface which has a *Loopback* component with mode primaryLoopback.
Mib	no_mib
Values	alwaysUpInterface primaryLoopback
Default	alwaysUpInterface

GROUP Rtr Vrf If Lb **OsiState (State)**

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Lb **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If Lb **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Rtr Vrf If Lb usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If Lb OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Lb snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Vrf If RsvpTeIf

Groups	GROUP Rtr Vrf If RsvpTeIf Provisioned (Prov) GROUP Rtr Vrf If RsvpTeIf OsiState (State) GROUP Rtr Vrf If RsvpTeIf Operational (Op) GROUP Rtr Vrf If RsvpTeIf InboundStatistics (InStats) GROUP Rtr Vrf If RsvpTeIf OutboundStatistics (OutStats)

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Scope	Application
Description	*Rtr/<s> Interface/<IP Address> RsvpTeIf* This component represents an instance of the RSVP-TE protocol running over the interface.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If RsvpTeIf **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains attributes for MPLS RSVP-TE configurable capability on a per interface basis.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RsvpTeIf **adminStatus (status)**

Access	Read: All Write: All
Description	This attribute specifies the administrative status of this RSVP-TE interface. It is used to maintain the admin state over FP and nodal restarts.
Mib	no_mib
Values	null enabled disabled testing
Default	enabled

ATTRIBUTE Rtr Vrf If RsvpTeIf **reservableFactor (resFactor)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the percentage of media bandwidth available for LSP Tunnel reservations over this interface. A value of 0 prevents any bandwidth allocation for LSPs. A value of 100 allows RSVP-TE exclusive use of available bandwidth. Intermediate values allow distribution of bandwidth amongst RSVP-TE and other applications.

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Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	50

ATTRIBUTE Rtr Vrf If RsvpTelf overbookingFactor (overBook)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the percentage of the total bandwidth pool that is not sharable between LSP connections. The percentage ranges from 0% to 1000%. This allows for both under and over subscription of the bandwidth. A value of 100 results in absolute allocations--signaled bandwidth is exactly that allocated. A value < 100 allows under subscription of the link. A value > 100 allows over subscription of the link.
Mib	no_mib
Values	Decimal (0..1000)
Units	%
Default	100

ATTRIBUTE Rtr Vrf If RsvpTelf mediaCapacity (mediaCap)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the capacity in kbits/sec of the underlying media link for the interface. For GigE links, the default can be retained. For ATM links, this attribute should be set to the sum of the bandwidth provisioned for the underlying VCC(s) linked to the associated *Rtr/<s> Interface/<IP Address> AtmMpe*.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	kbit/s
Default	860000

ATTRIBUTE Rtr Vrf If RsvpTelf refreshInterval (rInt)

Access	Read: All Write: All

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Description	This attribute specifies the interval between refresh messages sent by this LSR on this interface. This value is sent in the TIME_VALUES object of the PATH/RESV message to the next hop and is used in calculation of the lifetime of the PATH/RESV state block at the next hop. Setting this value will override the *refreshInterval* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..1800) sameAsRsvpTe
Units	seconds
Default	sameAsRsvpTe

ATTRIBUTE Rtr Vrf If RsvpTelf refreshKeepMultiplier (rKeep)

Access	Read: All Write: All
Description	This attribute specifies the default minimum number of refresh intervals that must pass before a PATH or a RESV state which is not being refreshed is aged out. This value is used in calculating the lifetime of the Path State Blocks (PSB) and Reservation State Blocks (RSB) for this interface; it prevents premature loss of these states. Setting this value will override the *refreshKeepMultiplier* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..50) sameAsRsvpTe
Default	sameAsRsvpTe

ATTRIBUTE Rtr Vrf If RsvpTelf slewMax (slew)

Access	Read: All Write: All
Description	This value specifies the rate at which an increase in the *refreshInterval* is introduced on the LSR. When a new *refreshInterval* value is provisioned to a higher value, the refresh interval is increased at *slewMax* percentage of the previous interval at each PATH/RESV cycle. In another words, the ratio of two successive refresh interval values do not exceed 1 + (Slew Max/100). Setting this value will override the *slewMax* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib

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Values	Decimal (1..200) sameAsRsvpTe
Units	%
Default	sameAsRsvpTe

ATTRIBUTE Rtr Vrf If RsvpTelf **helloInterval (hInt)**

Access	Read: All Write: All
Description	This attribute specifies the interval between HELLO messages sent by this LSR on this interface. A value of ***disabled*** indicates that the Hello mechanism is not enabled. Setting this value will override the *helloInterval* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (0.1..100.0) disabled sameAsRsvpTe
Units	seconds
Default	sameAsRsvpTe

ATTRIBUTE Rtr Vrf If RsvpTelf **helloMultiplier (hMult)**

Access	Read: All Write: All
Description	This attribute specifies the minimum number of HELLO intervals that must pass before the RSVP-TE connection is considered down. Setting this value will override the *helloMultiple* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 5.5; 6.0; 6.5; 7.0; 7.5; 8.0; 8.5; 9.0; 9.5; 10.0) sameAsRsvpTe
Default	sameAsRsvpTe

GROUP Rtr Vrf If RsvpTelf **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

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Mib	no_mib

ATTRIBUTE Rtr Vrf If RsvpTelf **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If RsvpTelf **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If RsvpTelf **usageState (osiUsage)**

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If RsvpTelf Operational (Op)

Properties	Operational
Description	This group contains the attributes that comprise the control statistics collected by the *RsvpTelf* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RsvpTelf bandwidthTotal (bwTot)

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth pool size for this component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf admittedBandwidth (admBw)

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth currently reserved for LSP connections.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf availableBandwidth (availBw)

Access	Read: All Write: Illegal

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Description	This attribute indicates the remaining reservable bandwidth.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf helloState (hState)

Access	Read: All Write: Illegal
Description	This attribute indicates if a hello adjacency is being maintained with the RSVP-TE neighbor for this interface.
Mib	no_mib
Values	disabled (dis) down up
Default	No default

GROUP Rtr Vrf If RsvpTelf InboundStatistics (InStats)

Properties	Operational
Description	This group contains the attributes that comprise the incoming datapath statistics collected by this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RsvpTelf inFrames

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frames received for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf inOctets

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of octets received for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib

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Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf **inFrameDiscards (inDisc)**

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frame discards received and discarded for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr Vrf If RsvpTelf **OutboundStatistics (OutStats)**

Properties	Operational
Description	This group contains the attributes that comprise the outgoing datapath statistics collected by this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RsvpTelf **outFrames**

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frames sent for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf **outOctets**

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of octets sent for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf **outFrameDiscards (outDisc)**

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Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frame discards sent and discarded for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr Vrf If LabelDistributionProtocolIf (LdpIf)

Groups	GROUP Rtr Vrf If LdpIf Provisioned (Prov) GROUP Rtr Vrf If LdpIf OsiState (State) GROUP Rtr Vrf If LdpIf InStatistics (InStats) GROUP Rtr Vrf If LdpIf OutStatistics (OutStats)
Scope	Application
Description	*Rtr/<s> If/<s> LdpIf* This component represents the fact that the Label Distribution Protocol is to run over the associated interface. A provisioning check is made to ensure that a *Rtr Ldp* component exists.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If LdpIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes for configuring LDP use over the interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If LdpIf adminStatus (admin)

Access	Read: All Write: All
Description	This attribute specifies the administrative status of this LDP Interface. It is used to maintain “locks” and “unlocks” over FP and nodal restarts.
Mib	no_mib

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Values	null enabled disabled testing
Default	enabled

GROUP Rtr Vrf If LdpIf **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If LdpIf **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If LdpIf **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If LdpIf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If LdpIf InStatistics (InStats)

Properties	Operational
Description	This group contains the operational statistics for incoming traffic of the *InwRtrLdpIf* component on the ingress side of a tandem or destination switch.
Mib	no_mib

ATTRIBUTE Rtr Vrf If LdpIf inOctets

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer

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Default	No default

ATTRIBUTE Rtr Vrf If LdpIf **inFrames**

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If LdpIf **inFramesDiscards**

Access	Read: All Write: Illegal
Description	This attribute counts the frames received but discarded from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr Vrf If LdpIf **OutStatistics (OutStats)**

Properties	Operational
Description	This group contains the operational statistics for outgoing traffic of *InwRtrLdpIf* component on the egress side of an originating or tandem switch.
Mib	no_mib

ATTRIBUTE Rtr Vrf If LdpIf **outOctets**

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted for originating or outgoing transit MPLS data. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If LdpIf **outFrames**

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Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for originating or outgoing transit MPLS data. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If Ldplf outFramesDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted that were discarded. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr Vrf If IpoDlci

Groups	GROUP Rtr Vrf If IpoDlci CustomerIdentifierData (CidData) GROUP Rtr Vrf If IpoDlci IfEntryProv (IfEntry) GROUP Rtr Vrf If IpoDlci Provisioned (Prov) GROUP Rtr Vrf If IpoDlci OsiState (State) GROUP Rtr Vrf If IpoDlci OperationalStatus (OperStatus)
Scope	Application
Description	*IpoDlci* This component represents a logical interface between a *Router Vrf Interface* and a *FrameRelay* Interface (*FrUni*). An *IpoDlci* associates multiple frame relay *DataLinkConnectionIdentifers (Dlci)* with a single *Router Vrf Interface*. The *IpoDlci* component is

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associated with a frame relay Dlcis using the *linkToFrDlci* attribute in each *FrConnection* subcomponent.

Mib no_mib

Subcomponents COMPONENT Rtr Vrf If IpoDlci FrConnection (Frc)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr Vrf If IpoDlci CustomerIdentifierData (CidData)

Properties Provisioned

Description This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib no_mib

ATTRIBUTE Rtr Vrf If IpoDlci customerIdentifier (cid)

Access Read and write

Description This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib no_mib

Values Decimal (0; 1..8191)

Default 0

GROUP Rtr Vrf If IpoDlci IfEntryProv (IfEntry)

Properties Provisioned

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Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci **ifAdminStatus (ifState)**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf If IpoDlci **ifIndex (ifI)**

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr Vrf If IpoDlci **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioned attributes for the *IpDlciGroup* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci **maxTransmissionUnit (mtuSize)**

Access	Read and write
Description	This attribute specifies the size of the largest datagram (including the frame relay header) which can be sent on the interface.
Mib	no_mib
Values	Decimal (262..9190)
Units	octets
Default	1604

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GROUP Rtr Vrf If IpoDlci **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If IpoDlci **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If IpoDlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If IpoDlci OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Vrf If IpoDlci FrConnection (Frc)

Instance	Decimal (1..255)

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Groups	GROUP Rtr Vrf If IpoDlci Frc Provisioned (Prov) GROUP Rtr Vrf If IpoDlci Frc OsiState (State) GROUP Rtr Vrf If IpoDlci Frc Statistics (Stats)
Scope	Application
Description	*IpDlciGrp/n FrConnection/n* This component represents a virtual connection over which internetworking frames are relayed between IP and frame relay.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If IpoDlci Frc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *FrConnection* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci Frc linkToFrDlci (frDlci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the frame relay *Dlci IpConn* component that this connection is associated with.
Mib	no_mib
Values	Link (Hardware, linkToIpDlciGrp)
Default	No default

ATTRIBUTE Rtr Vrf If IpoDlci Frc ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the

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Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet.

DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component.
Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *FrConnection*.

If the *FrConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib no_mib

Values Decimal (0..3)

Default 0

ATTRIBUTE Rtr Vrf If IpoDlci Frc **linkToIpLogicalInterface (ipIf)**

Access Read and write

Description This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with.

When set, the value of this attribute must be consistent with the *linkToProtocolPort* attribute value of the parent *IpDlciGroup* component. That is, they must both point to the same *ProtocolPort* component.

Mib no_mib

Values Link (Service, linkToMediaConnection)

Default No default

GROUP Rtr Vrf If IpoDlci Frc **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Vrf If IpoDlci Frc **adminState (osiAdmin)**

Access Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If IpoDlci Frc **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If IpoDlci Frc **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib no_mib

Values idle
active (activ)
busy

Default idle

GROUP Rtr Vrf If IpoDlci Frc **Statistics (Stats)**

Properties Operational

Description This group contains the packet based statistics maintained for the *FrConnection* component.

Mib no_mib

ATTRIBUTE Rtr Vrf If IpoDlci Frc **inUnknownProtocol**

Access Read only

Description This attribute counts the packets received on this connection which are discarded because they contain an unknown protocol. This counter wraps around to ***0*** when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Rtr Vrf If IpoDlci Frc **inUnsupportedProtocol**

Access Read only

Description This attribute counts the packets received on this connection which are discarded because they contain an unsupported protocol. This includes packets received for protocols not currently bound to the associated *ProtocolPort* component. This counter wraps around to ***0*** when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Rtr Vrf If IpoDlci Frc **inLastDiscardedProtocolHeader**

Access Read only

Description This attribute indicates the first eight octets of the most recent packet that was received from the interface with an unknown or unsupported protocol.

Mib no_mib

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Values	String (1..8, Hex)
Default	No default

COMPONENT Rtr Vrf If EnetApplication (Enet)

Groups	GROUP Rtr Vrf If Enet Provisioned (Prov) GROUP Rtr Vrf If Enet Provisioned (Prov) GROUP Rtr Vrf If Enet Operational (Oper)
Scope	Application
Description	*EnetApplication* The *EnetApplication* component is used to provide the interface between the *Interface* component and a LAN component such as *Ethernet*.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains the link to the *EnetIf* application
Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet linkToEnetIf (enetIf)

Access	Read: All Write: All
Criticality	Component
Description	This attribute associates a *EnetIf* application with a *Interface* component.
Mib	no_mib
Values	Link (Service, enetConnection)
Default	No default

GROUP Rtr Vrf If Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for *Enet*Application.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet encap

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Access	Read: All Write: All
Description	This attribute indicates the encapsulation type to be used when sending packets out the corresponding *Interface*. The the default encapsulation is ethernet.
Mib	no_mib
Values	ieee8023 ethernet
Default	ethernet

GROUP Rtr Vrf If Enet **Operational (Oper)**

Properties	Operational
Description	This group contains operational attributes for *EnetApplication.*
Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet **operEncap**

Access	Read only
Description	This attribute indicates the current operational encapsulation type.
Mib	no_mib
Values	ieee8023 ethernet
Default	ethernet

COMPONENT Rtr Vrf If **MplsBgpInterface (MplsBgpIf)**

Groups	GROUP Rtr Vrf If MplsBgpIf InStatistics (InStats) GROUP Rtr Vrf If MplsBgpIf OutStatistics (OutStats)
Scope	Application
Description	*Rtr/<s> If/<s> MplsBgpIf* This component represents the interface that BGP uses to carry MPLS label information. There is a maximum of one *MplsBgpIf* component under each *Interface* component.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf If MplsBgpIf **InStatistics (InStats)**

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Properties	Operational
Description	This group contains the operational statistics for incoming labelled MPLS data traffic of the *MplsBgpIf* component on the ingress side of a tandem or destination switch.
Mib	no_mib

ATTRIBUTE Rtr Vrf If MplsBgpIf **inOctets**

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If MplsBgpIf **inFrames**

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If MplsBgpIf **inFrameDiscards**

Access	Read: All Write: Illegal
Description	This attribute counts the frames received but discarded from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr Vrf If MplsBgpIf **OutStatistics (OutStats)**

Properties	Operational

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Description	This group contains the operational statistcs for outgoing labelled MPLS data traffic of the *MplsBgpIf* component on the egress side of an originating or tandem switch.
Mib	no_mib

ATTRIBUTE Rtr Vrf If MplsBgpIf **outOctets**

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted for originating or outgoing transit labelled MPLS data traffic. The counter wraps to zero when is maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If MplsBgpIf **outFrames**

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for originating or outgoing transit labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If MplsBgpIf **outFramesDiscards**

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for labelled MPLS data traffic that were discarded. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr Vrf If **PppApplication (Ppp)**

Groups	GROUP Rtr Vrf If Ppp Provisioned (Prov)
Scope	Application

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Description	*Rtr/n Vrf/y If/x.x.x.x PppApplication* This component provides a *PppApplication* component name that is used as an interface to the network.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If Ppp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *PppApplication* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Ppp linkToMedia (media)

Access	Read and write
Criticality	Component
Description	This attribute contains a *Ppp* link level protocol component name. The attribute associates the *PppApplication* component with a *Ppp* link level protocol component.
Mib	no_mib
Values	Link (Service, linkToApplication)
Default	No default

COMPONENT Rtr Vrf ControlPlaneProtection (Cpp)

Groups	GROUP Rtr Vrf Cpp Provisioned (Prov) GROUP Rtr Vrf Cpp Operational (Oper) GROUP Rtr Vrf Cpp OsiState (State)

COLLECTED STATS Router VpnRouteForwarder ControlPlaneProtection

Scope	Application
Description	*Vr/<string> Ip ControlPlaneProtection* *Rtr/<string> ControlPlaneProtection* *Rtr/<string> Vrf/<string> ControlPlaneProtection* This component represents the IP Control Plane Protection mechanism. The *CPP* helps prevent control traffic from the current Virtural Router, Router, or vrForwarder (VR/VRF) receiving excessive traffic from adversely affecting the control processing of others. If the rate of packets received by the local-destined address is greater than the provisioned

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value, CPP is notified.
This component does not protect locally destined IP traffic including IP options, IPv6, TTL of 0 or 1 which includes OSPF, and unsupported protocols (in hardware) such as ISIS.

Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Vrf Cpp IsolatedDa
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB Clear Rtr Vrf Cpp

Impact	Service
Description	clear Vr/<string> Ip Cpp clear Rtr/<string> Cpp clear Rtr/<string> Vrf/<string> Cpp This command is intended for manually clearing all isolated addresses from the current *Cpp* component, and resume traffic to the locally destined addresses on all the FPs.

GROUP Rtr Vrf Cpp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Cpp* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cpp packetsPerSecond (pps)

Access	Read and write
Description	This attribute specifies the maximum number of packets per second a locally destined address on the VR/VRF can receive before being monitored by the *CPP* feature.
Mib	no_mib
Values	Decimal (100; 200; 300; 400; 500; 600; 700; 800; 900; 1000; 1100; 1200)
Default	1200

ATTRIBUTE Rtr Vrf Cpp isolationTime (isolation)

Access	Read and write
Description	This attribute specifies the amount of time a locally destined address will remain in isolation after exceeding the *packetsPerSecond* rate.

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If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period.

A value of 0 indicates that a locally destined address which is isolated can only be cleared using the *CLEAR* command.

If the traffic to the address is still excessive after the isolationTime expires, this locally destined address will remain in isolation for *IsolationTime* * 2 period. If the traffic to the address is still excessive after 3 times of the above step, the address will be permanently isolated until it is cleared by the *CLEAR* verb.

The minimum value of *IsolationTime* other than zero is 30.

Mib	no_mib
Values	Decimal (0; 30..3600)
Units	seconds
Default	30

ATTRIBUTE Rtr Vrf Cpp **gracePeriod (grace)**

Access	Read and write
Description	This attribute specifies period of time used to sample the flow rate before the packets are discarded. The intent of the grace period is to measure the average flow rate during this period to ensure that the exceeded traffic flow rate was not due to bursty traffic. If *mode* is ***study***, a list of static record are generated every 15 minutes including a list of locally-destined addresses having excessive flow and its avarage flow rates during the gracePeriod. If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period. A value of 0 of this attribute when *mode* is ***protected*** indicates that no monitoring of the address will be performed after an excessive flow is detected and isolation occurs immediately. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	no_mib
Values	Decimal (0..300)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf Cpp **mode**

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Access	Read and write
Description	This attribute specifies whether we are simply monitoring excessive traffic (***study***), or will ***protect*** the VR by discarding traffic during excessive traffic flows, or the feature is ***disabled***. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	no_mib
Values	study protect disabled
Default	disabled

GROUP Rtr Vrf Cpp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Cpp* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cpp operationalStatus

Access	Read only
Description	This attribute indicates the current operational state of the *Cpp* component on this VR The following states are the valid states of the *Cpp* component: ***inactive***: there are currently no addresses on the VR/VRF being monitored or isolated. ***disabled***: the *Cpp* feature is currently disabled on the VR/VRF. ***monitoring***: there are currently addresses on the VR/VRF being monitored, but none are currently isolated. If the *mode* is set to ***study***, this state indicates there are currently addresses on the VR/VRF having excessive traffic. ***isolating***: there are currently addresses being isolated for this VR/VRF.
Mib	no_mib
Values	inactive disabled monitoring isolating
Default	No default

ATTRIBUTE Rtr Vrf Cpp isolatedDaCount

Access	Read only
Description	This attritute counts the total number of addresses currently being isolated for this VR.
Mib	no_mib

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Values	Decimal (0..4096)
Default	No default

GROUP Rtr Vrf Cpp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cpp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Cpp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for

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operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf Cpp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

COLLECTED STATS Router VpnRouteForwarder ControlPlaneProtection

Description: The statistics record generated by the Router VpnRouteForwarder ControlPlaneProtection component.

ATTRIBUTE Rtr Vrf Cpp isolatedDa

Description: This attribute indicates the ip address of the isolated locally destined DA.

Values: IP address

ATTRIBUTE Rtr Vrf Cpp isolatedLp

Description: This attribute indicates the LP number on which the locally destined address is being isolated.

Values: Decimal (0..15)

ATTRIBUTE Rtr Vrf Cpp isolatedCounts

Description: This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values: Decimal (0..65535)

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ATTRIBUTE Rtr Vrf Cpp averageFlowRate

Description	This attribute indicates the average flow rate of the isolated DA during the isolation period.
Values	Decimal (0..65535)

COMPONENT Rtr Vrf Cpp IsolatedDa

Instance	address [IP address] lp [Decimal (0..15)]
Groups	GROUP Rtr Vrf Cpp IsolatedDa Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Cpp IsolatedLocalAddress/<ipAddress>,<lp>* *Rtr/<string> Cpp IsolatedLocalAddress/<ipAddress>,<lp>* *Rtr/<string> Vrf/<string> Cpp IsolatedLocalAddress/<ipAddress>,<lp>* Each entry of this component represents a locally destined address being isolated. There is one instance of this component per isolated address per lp.
Mib	no_mib
Common Verbs	Help List Display

VERB Clear Rtr Vrf Cpp IsolatedDa

Impact	Service
Description	*Clear Vr/<string> Ip Cpp* IsolatedDa/< ipAddress> *Clear Rtr/<string> Cpp* IsolatedDa/<ipAddress> *Clear Rtr/<string> Vrf/<string> Cpp* IsolatedDa/<ipAddress> This command is intended for manually clearing the isolated address and resume traffic to the local address for all FPs.

GROUP Rtr Vrf Cpp IsolatedDa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *IsolatedLocalAddress* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cpp IsolatedDa averageFlowRate

Access	Read only

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Description	This attribute indicates the average flow rate calculated over the grace period.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

COMPONENT Rtr Vrf MemoryManagement (Mm)

Groups	GROUP Rtr Vrf Mm Provisioned (Prov) GROUP Rtr Vrf Mm Operational (Oper)
Scope	Application
Description	*Vr/<string> MemoryManagement* *Rtr/<string> MemoryManagement* *Rtr/<string> Vrf/<string> MemoryManagement* This component represents a mechanism to control and monitor dynamic memory usage within a *VirtualRouter*, *Router*, or *VpnRouteForwarder*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Mm Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisioned attributes for the *MemoryManagement* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Mm vrMaxHeapSpace (vrMax)

Access	Read and write
Description	This attribute specifies the maximum percentage of the total system heap space that is allowed for use by this *VirtualRouter*, *Router*, or *VpnRouteForwarder*. Attempted memory allocation beyond this limit will cause a *VirtualRouter* or *VpnRouteForwarder* to automatically lock. If memory allocation for a *Router* exceeds this limit, an alarm is raised but the component is not locked.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	100

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GROUP Rtr Vrf Mm Operational (Oper)

Properties	Operational
Description	This group contains all operational attributes for the *MemoryManagement* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Mm vrHeapSpaceBytesAllocated (vrBytesAlloc)

Access	Read only
Description	This attribute indicates the number of bytes of system dynamic memory which has been allocated to this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Mm vrHeapSpaceAllocated (vrAlloc)

Access	Read only
Description	This attribute indicates the percentage of the maximum permitted heap space for this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component (as specified by *vrMaxHeapSpace* attribute) which is currently allocated.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Rtr Vrf DifferentiatedServicesDomain (Dsd)

Instance	multiservice (ms) classSelector (cs) assuredForwarding (af) packetVoice (pv) wirelessUmts (umts) custom (cu)
Groups	GROUP Rtr Vrf Dsd LocalSourcePackets (Local)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> Vrf/<string> DifferentiatedServicesDomain/<enum>* This component and its supcomponents represent a Differentiated Services administration domain for traffic management and congestion

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control.

The *DifferentiatedServicesDomain* component instance identifies the domain type. The following domain types are available:

Multiservice (ms)
ClassSelector (cs)
AssuredForwarding (af)
PacketVoice (pv)
WirelessUmts (umts)
Custom (cu)

The *DifferentiatedServicesDomain* component is an optional subcomponent of the *Router*, *VpnRouteForwarder* and *VirtualRouter* components.

The *Router*, *VpnRouteForwarder*, and *VirtualRouter* components can have at most one *DifferentiatedServicesDomain* subcomponent.

If a *Router* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *Router* operates as by default as follows. IP packets with Differentiated ServiceCode Point (DSCP) field value 48, and MPLS packets with Experimental Bits (EXP) field value 6, are treated with Per Hop Behavior (PHB) CS6; other IP and MPLS packets are treated with PHB DF for default forwarding. Locally generated routing control packets are treated with PHB CS6; other locally generated packets are treated with PHB DF. Per Hop Behaviors CS6 and DF are configured to provide the following values of scheduling class for 8, 4, 3, 2 queues, drop precedence, and EXP for MPLS encapsulation: (5, 2, 2, 0, low, 6) and (0, 0, 0, 0,, high, 0), respectively. This is equivalent to the default the configuration of the *DifferentiatedServicesDomain/custom* component instance.

If a *VpnRouteForwarder* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *VpnRouteForwarder* component uses the *DifferentiatedServicesDomain* configuration of the *Router.*

Mib: no_mib

Opt. Subcomp.:
COMPONENT Rtr Vrf Dsd MplsServiceMap (MplsMap)
COMPONENT Rtr Vrf Dsd VpnDscpMap (VpnDscpMap)
COMPONENT Rtr Vrf Dsd VpnCosMap (VpnCosMap)
COMPONENT Rtr Vrf Dsd PerHopBehavior (Phb)
COMPONENT Rtr Vrf Dsd TrafficClass (Tc)

Common Verbs:
Help
List
Display
Add
DELete

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GROUP Rtr Vrf Dsd **LocalSourcePackets (Local)**

Properties	Provisioned
Description	This group contains provisioned attributes of the *DifferentiatedServicesDomain* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd **phbGeneralSource (phbG)**

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is not used for network routing control. For a locally-generated IP packet that is not used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value. For a locally-generated ICMP echo request packet, the DSCP field is overridden by the *-tos* or *-dscp* option of the *Ping* command. For a locally-generated ICMP echo reply packet, the DSCP field is set to the DSCP value contained in the IP header of the received request packet. In any case, the forwarding behavior of the ICMP packet controlled by the *PerHopBehavior* component instance that is equal to value of the DSCP field.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5

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	cs6 cs7
Default	df

ATTRIBUTE Rtr Vrf Dsd phbRoutingSource (phbR)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is used for network routing control. For a locally generated IP packet that is used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	cs6

ATTRIBUTE Rtr Vrf Dsd linkToVpnDscpMap (vpnMap)

Access	Read and write
Description	This attribute specifies a *VpnDscpMap* component instance that is used to translate the value of the DSCP field in an IP packet forwarded by a customer Virtual Router (cVr) to the value of the DSCP field in the IP header that encapsulates the packet when it is forwarded by a Virtual Connection Gateway (VCG).

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If no *VpnDscpMap* component is specified, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

This attribute is relevant only to a VR configured as a customer router in an IP VPN (RFC2764) network.

Mib: no_mib

Values: Link (Service, linkToVpnDscpMapUsers)

Default: No default

COMPONENT Rtr Vrf Dsd MplsServiceMap (MplsMap)

Instance: 0

Scope: Application

Description: *Vr/<string> Dsd/<enum> MplsServiceMap/<n>*
Rtr/<string> Dsd/<enum> MplsServiceMap/<n>

The subcomponents of the *MplsServiceMap* component specify mappings used to control how MPLS packets are forwarded over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The *MpslServiceMap/0* subcomponent instance is added automatically to a *DifferentiatedServicesDomain* subcomponent being added to a *Router* component where the *Ldp* subcomponent is already activated.

The *MpslServiceMap/0* subcomponent instance is not allowed under a *DifferentiatedServicesDomain* component whose immediate parent is a *VirtualRouter* component or a *VirtualRouteForwarder* component.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Vrf Dsd MplsMap ExperimentalBitsMap (ExpMap)
COMPONENT Rtr Vrf Dsd MplsMap PerHopBehaviorMap (PhbMap)
COMPONENT Rtr Vrf Dsd MplsMap MarkingPerformance

Common Verbs:
- Help
- List
- Display
- Add
- DELete

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COMPONENT Rtr Vrf Dsd MplsMap ExperimentalBitsMap (ExpMap)

Instance	0 1 2 3 4 5 6 7
Groups	GROUP Rtr Vrf Dsd MplsMap ExpMap Provisioned (Prov) GROUP Rtr Vrf Dsd MplsMap ExpMap Operational (Oper)
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>* *Rtr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>* This component specifies a mapping from a three-bit Experimental (EXP) field value in an MPLS label to a *DifferentiatedServicesDomain PerHopBehavior* component instance value. This mapping controls how an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value is treated when the packet is forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The *MplsServiceMap* component must have eight *ExperimentalBitMap* subcomponents, each with a unique instance value in the range from **0** to **7**. These subcomponents are added automatically when the *MplsServiceMap* component is created.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Dsd MplsMap ExpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *ExperimentalBitsMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd MplsMap ExpMap perHopBehavior (phb)

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Access	Read and write
Description	This attribute specifies the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The value of this attribute must be equal to an exisiting *DifferentiatedServicesDomain PerHopBehavior* component instance value. A default value is set automatically according to a function of the *ExperimentalBitsMap* and *DifferentiatedServicesDomain* component instance values when the *ExperimentalBitsMap* component is created.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	No default

GROUP **Rtr Vrf Dsd MplsMap ExpMap** **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *ExperimentalBitsMap* component.
Mib	no_mib

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ATTRIBUTE Rtr Vrf Dsd MplsMap ExpMap **operPerHopBehavior (operPhb)**

Access — Read only

Description — This attribute indicates the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *perHopBehavior* provisioned attribute value.

Mib — no_mib

Values — Decimal (0..63)
df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default — No default

ATTRIBUTE Rtr Vrf Dsd MplsMap ExpMap **trafficClass (tc)**

Access — Read only

Description — This attribute indicates the *TrafficClass* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *trafficClass* provisioned attribute

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value of the *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib no_mib

Values
critical
network
premium
platinum
gold
silver
bronze
standard

Default No default

ATTRIBUTE **Rtr Vrf Dsd MplsMap ExpMap** **dropPrecedence (dp)**

Access Read only

Description This attribute indicates the drop precedence value used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an LSP where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *dropPrecedence* provisioned attribute value of *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib no_mib

Values
low
medium
high

Default No default

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COMPONENT Rtr Vrf Dsd MplsMap PerHopBehaviorMap (PhbMap)

Instance	0
	1
	2
	3
	4
	5
	6
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df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

GROUP Rtr Vrf Dsd MplsMap PhbMap Provisioned (Prov)
GROUP Rtr Vrf Dsd MplsMap PhbMap Operational (Oper)

Scope

Application

Description

Vr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>
Rtr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>

This component specifies a mapping from a *PerHopBehavior* component instance value to a three-bit Experimental (EXP) field value.

This mapping controls how the EXP field in an MPLS label is marked when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

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The *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat the packet prior to label encapsulation is used to select the EXP value for the label. If the *PerHopBehavior* component instance value used to treat the packet is not included among the existing *PerHopBehaviorMap* component instances, then the EXP value indicated by the *PerHopBehaviorMap* component whose instance is equal to 0 is used.

Each *PerHopBehaviorMap* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehaviorMap* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32 ,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehaviorMap* subcomponent of the *MplsServiceMap* must have a unique instance value. A *PerHopBehaviorMap* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehaviorMap* subcomponents with instance values equal to the *DifferentiatedServicesDomain PerHopBehavior* subcomponent instance values is added automatically when the *MplsServiceMap*

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component is created.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Dsd MplsMap PhbMap **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PerHopBehaviorMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd MplsMap PhbMap **experimentalBits (exp)**

Access	Read and write
Description	This attribute specifies a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation. This attribute is set automatically to a default value according to a function of the *PerHopBehaviorMap* and *DifferentiatedServicesDomain* component instance values when the *PerHopBehaviorMap* component is created.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

GROUP Rtr Vrf Dsd MplsMap PhbMap **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehaviorMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd MplsMap PhbMap **operExperimentalBits (operExp)**

Access	Read only

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Description	This attribute indicates a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation. The value of this attribute is equal to the *experimentalBits* provisioned attribute.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Vrf Dsd MplsMap PhbMap **operExperimentalBitsAlternative (operExpAlt)**

Access	Read only
Description	This attribute is similar to the *operExperimentalBits* operational attribute, except that it used only on PQC-based access FPs with ASIC Version 2.0 when an IP packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) via a PQC-based trunk FP. In such situations only, the value of this attribute, instead of the *operExperimentalBits* operational attribute value, is used to mark the Experimental (EXP) field of the MPLS label. If the *MplsServiceMap* does not have a *MarkingPerformance* subcomponent, then the value of this attribute is equal to the *experimentalBits* provisioned attribute; otherwise the value of this attribute is determined as explained in the next paragraph. If "***x***" is the *schedulingClass4Queues* operational attribute value of the *DifferentiatedServicesDomain PerHopBehavior* component whose instance value is equal to the *PerHopBehaviorMap* component instance value, then the *PerHopBehaviorMap experimentalBitsAlternative* operational attribute value is equal to the "***x***th" element of the *MarkingPerformance experimentalBitsAlternative* provisioned attribute.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

COMPONENT Rtr Vrf Dsd MplsMap **MarkingPerformance**

Groups	GROUP Rtr Vrf Dsd MplsMap MarkingPerformance Provisioned (Prov)

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Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance* *Rtr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance* This subcomponent is added to the *MplsServiceMap* component to enable high performance MPLS label encapsulation on some PQC-based ingress access FPs . IP packets that are forwarded from access FPs with PQC-ASIC Version 2.0 via PQC-based trunk FPs (any ASIC version) over an MPLS Label Switched Path (LSP) where the *MplsServiceMap* is applied are affected. Adding this component to the *MplsServiceMap* improves IP packet throughput on the affected access FPs but restricts how the three-bit Experimental (EXP) field of MPLS labels are marked, as explained in the description of the *operExperiementalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* component. Without the *MarkingPerformance* subcomponent, IP packets after being routed in hardware are encapsulated with MPLS labels by a software-assisted datapath that does not restrict how the EXP field of MPLS labels are marked. The *MarkingPerformance* subcomponent is added automatically to a *MpslServiceMap* subcomponent being added to a *DifferentiatedServicesDomain* component. This ensures that the high performance MPLS label encapsulation data path is used by default.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP **Rtr Vrf Dsd MplsMap MarkingPerformance** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioned attributes of the *MarkingPerformance* component.
Mib	no_mib

ATTRIBUTE **Rtr Vrf Dsd MplsMap MarkingPerformance** **expermentalBitsAlternative (expAlt)**

Access	Read and write
Description	This attribute is an array of four values that specifies a mapping of scheduling class values for four queues to three-bit Experimental (EXP) field values for marking MPLS labels.

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This array controls the value of the *operExperimentalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* components, as explained in the description of that attribute.

Each element of this attribute is set automatically to a default value according to a function of the *DifferentiatedServicesDomain* component instance value and the element index when the *MarkingPerformance* component is created. The default values are listed below.

Default values for all domains, except *assuredForwarding (af)* and *custom(cu)* :

schedulingClass4Queues	*experimentalBitsAlternative*
	3
5	
2	***6***
1	***1***
0	***0***

Default values for *assuredForwarding (af)* domain:

schedulingClass4Queues	*experimentalBitsAlternative*
	3
7	
2	***5***
1	***3***
0	***0***

Default values for *custom(cu)* domain:

schedulingClass4Queues	*experimentalBitsAlternative*
	3
0	
2	***6***
1	***0***
0	***0***

Mib	no_mib
Vector of	Decimal (0..7)
Index	Decimal (0..3)
Default	No default

COMPONENT Rtr Vrf Dsd VpnDscpMap (VpnDscpMap)

Instance	String (1..20, ASCII)

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Groups	GROUP Rtr Vrf Dsd VpnDscpMap Provisioned (Prov)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnDscpMap/<string>*

This component provides a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network.

When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network.

If the customer virtual router (cVr) has a *DifferentiatedServicesDomain* subcomponent where the *linkToVpnDscpMap* attribute is set, then the value of DSCP field in the IP packet forwarded by the customer Virtual Router (cVr) is translated by the mapping specified by the *assignedPhb* attribute of the associated *VpnDscpMap* to a DSCP value that is marked in the carrier IP header. If the customer *DifferentiatedServicesDomain linkToVpnDscpMap* attribute is not set, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnDscpMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***. It can be linked only to the *linkToVpnDscpMap* attribute of the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***customer***.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *DiffServDomain* component is not allowed to have more than eight *VpnDscpMap* subcomponents.

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	No more than one *DiffServDomain* component instance is allowed to have *VpnDscpMap* subcomponents
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Dsd VpnDscpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnDscpMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd VpnDscpMap linkToVpnDscpMapUsers (users)

Access	Read and write
Description	This attribute specifies all the customer virtual routers that use the *VpnDscpMap* component.
Mib	no_mib
List of	Link (Service, linkToVpnDscpMap)
List Size	256
Default	No default

ATTRIBUTE Rtr Vrf Dsd VpnDscpMap assignedPhb (phb)

Access	Read and write
Description	This attribute specifies a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnDscpMap* component for more information.

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Mib	no_mib
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Rtr Vrf Dsd VpnCosMap (VpnCosMap)

Groups	GROUP Rtr Vrf Dsd VpnCosMap Provisioned (Prov)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnCosMap* This component provides a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network. If the customer virtual router (cVr) does not have a *DifferentiatedServicesDomain* subcomponent and the Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain VpnCosMap* component, then the IP CoS value assigned to the packet by the customer virtual router is translated by the mapping specified by the *assignedPhb* attribute of the *VpnCosMap* to a DSCP value that is marked in the carrier

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IP header. If the *DifferentiatedServicesDomain* of the Virtual Connection Gateway (VCG) does not have a *VpnCosMap* subcomponent, then the value of the DSCP field in the carrier IP header is set to ***0*** unless the customer header DSCP value is ***48*** (which corresponds to PHB CS6 for IP network control packets). In the latter case the carrier header DSCP value is set to ***48*** also.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnCosMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***.

The *VpnCosMap* component is used to assist the migration of an IP VPN network without *DifferentiatedServicesDomain* components to an IP VPN network where every customer Virtual Router (cVr) and Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain* component. The *VpnCosMap* components can be removed once the CoS to DiffServ network migration is completed.
The VpnCosMap component controls how the DSCP field in the carrier IP header is marked when IP packets are forwarded by the Virtual Connection Gateway (VCG) only if the operational value of the Vr trafficManagementMode (tmMode) attribute for the customer VirtualRouter component is set to hybrid .

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP **Rtr Vrf Dsd VpnCosMap** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnCosMap* component.
Mib	no_mib

ATTRIBUTE **Rtr Vrf Dsd VpnCosMap** **assignedPhb (phb)**

Access	Read and write

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Description	This attribute specifies a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnCosMap* component for more information.
Mib	no_mib
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..3)
Default	(0: 0, 1: 0, 2: 0, 3: 0)

COMPONENT Rtr Vrf Dsd PerHopBehavior (Phb)

Instance	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

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60
61
62
63
df
ef

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af11
af12
af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

GROUP Rtr Vrf Dsd Phb Provisioned (Prov)
GROUP Rtr Vrf Dsd Phb Operational (Oper)
GROUP Rtr Vrf Dsd Phb IpOperational (IpOper)

Scope

Application

Description

Vr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Vrf/<string> Dsd/<enum> PerHopBehavior/<phb>

The attributes of the *PerHopBehavior* component specify per-packet traffic management parameters that control how individual packets are forwarded.

A packet is associated with a *PerHopBehavior* component instance by a packet classification mechanism. For IP packets, the associated *PerHopBehavior* component instance is equal to the value of the six-bit Differentiated Services Code Point (DSCP) field in the IP header. For MPLS packets forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where an *MplsServiceMap* component is applied, the associated *PerHopBehavior* component instance is equal to value of the *perHopBehavior* attribute of the *MplsServiceMap ExperimentalBitsMap* component whose instance is equal to the value of the three-bit Experimental (EXP) field of the MPLS label.

If the *PerHopBehavior* component instance associated with a packet is not included among the existing *PerHopBehavior* subcomponents of the *DifferentiatedServicesDomain*, then the packet is treated according to the *PerHopBehavior* component whose instance is equal to 0.

Each *PerHopBehavior* component instance is equal to a decimal value in

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the range from 0 to 63. The following pairs of *PerHopBehavior* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehavior* subcomponent of the *DifferentiatedServicesDomain* must have a unique instance value. A *PerHopBehavior* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehavior* subcomponents is added automatically when the *DifferentiatedServicesDomain* component is created. The members of this set is a function of the *DifferentiatedServicesDomain* component instance as indicated below.

Multiservice (ms):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, EF, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22, AF23, AF11, AF12, AF13, DF

ClassSelector (cs):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, CS0

AssuredForwarding (af):
CS6, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22 AF23, AF11, AF12, AF13, DF

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Packet Voice (pv):
CS7, CS6, CS5, CS1, EF, AF11, AF12, AF13, DF

WirelessUmts (umts):
CS7, CS6, CS1, EF, AF31, AF32, AF33, AF21, AF22, AF23, DF

Custom (cu):
CS6, DF

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Vrf Dsd Phb Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes of the *PerHopBehavior* component.

Mib no_mib

ATTRIBUTE Rtr Vrf Dsd Phb trafficClass (tc)

Access Read and write

Description This attribute specifies the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that specify the same packet scheduling characteristics.

This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PeHopBehavior trafficClass
---*CS7 (56)*
critical
CS6 (48) ***network***
EF (46) ***premium***
CS5 (40) ***premium***
CS4 (32) ***platinum***
AF41 (34) ***platinum***
AF42 (36) ***platinum***

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AF43 (38)	***platinum***
CS3 (24)	***gold***
AF31 (26)	***gold***
AF32 (28)	***gold***
AF33 (30)	***gold***
CS2 (16)	***silver***
AF21 (18)	***silver***
AF22 (20)	***silver***
AF23 (22)	***silver***
CS1 (8)	***bronze***
AF11 (10)	***bronze***
AF12 (12)	***bronze***
AF13 (14)	***bronze***
CS0, DF (0)	***standard***
all others	***standard***

The value of this attribute must be equal to an existing *TrafficClass* subcomponent instance of the *DifferentiatedServicesDomain*.

If the *PerHopBehavior* component instance is ***0***, ***cs0***, or ***df***, then the value of this attribute must be ***standard***.

Mib: no_mib

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Rtr Vrf Dsd Phb **dropPrecedence (dp)**

Access: Read and write

Description: This attribute specifies the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

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This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PerHopBehavior *dropPrecedence*

CS7 (56) ***low***
CS6 (48) ***low***
EF (46) ***low***
CS5 (40) ***low***
CS4 (32) ***low***
AF41 (34) ***low***
AF42 (36) ***medium***
AF43 (38) ***high***
CS3 (24) ***low***
AF31 (26) ***low***
AF32 (28) ***medium***
AF33 (30) ***high***
CS2 (16) ***low***
AF21 (18) ***low***
AF22 (20) ***medium***
AF23 (22) ***high***
CS1 (8) ***low***
AF11 (10) ***low***
AF12 (12) ***medium***
AF13 (14) ***high***
CS0, DF (0) ***high***
all others ***high***

Mib	no_mib
Values	low medium high
Default	No default

GROUP **Rtr Vrf Dsd Phb** **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehavior* component that control the relative forwarding behaviors of packets.
Mib	no_mib

ATTRIBUTE **Rtr Vrf Dsd Phb** **operTrafficClass (operTc)**

Access	Read only

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Description	This attribute indicates the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that indicate the same packet scheduling characteristics. The value of this attribute is equal to value of the *trafficClass* provisioned attribute of the *PerHopBehavior* component.
Mib	no_mib
Values	critical network premium platinum gold silver bronze standard
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb **schedulingClass8Queues (sc8q)**

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb **schedulingClass4Queues (sc4q)**

Access	Read only

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Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb **schedulingClass3Queues (sc3q)**

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass3Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

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Mib	no_mib
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb **schedulingClass2Queues (sc2q)**

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass2Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..1)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb **connectionClass (cos)**

Access	Read only
Description	This attribute indicates the connection class value in the range from ***0*** to ***3*** that is associated with the Layer 2 connection used to forward a packet that uses the *PerHopBehavior* component instance when it is transmitted at an ATM or Frame Relay interface that has four Layer 2 connections, each with a different connection class value, to the next hop router. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information per-packet selection of egress connections. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib

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Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb **operDropPrecedence (operDp)**

Access	Read only
Description	This attribute indicates the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds. A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue. The value of this attribute is equal to value of the *dropPrecedence* provisioned attribute of the *PerHopBehavior* component.
Mib	no_mib
Values	low medium high
Default	No default

GROUP Rtr Vrf Dsd Phb **IpOperational (IpOper)**

Properties	Operational
Description	This group contains *PerHopBehavior* operational attributes that pertain to IP packets only.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd Phb **dscpDecimal (dscp)**

Access	Read only
Description	This attribute indicates the decimal value of the six-bit Differentiated Services Code Point (DSCP) field of an IP packet that uses the *PerHopBehavior* component instance.
Mib	no_mib
Values	Decimal (0..63)
Default	No default

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ATTRIBUTE Rtr Vrf Dsd Phb **tosDecimal (tos)**

Access	Read only
Description	This attribute indicates the decimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb **typeOfServiceFieldHex (hex)**

Access	Read only
Description	This attribute indicates the hexadecimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	no_mib
Values	Hex (H.0..H.ff)
Default	No default

COMPONENT Rtr Vrf Dsd **TrafficClass (Tc)**

Instance	critical network premium platinum gold silver bronze standard
Groups	GROUP Rtr Vrf Dsd Tc Provisioned (Prov) GROUP Rtr Vrf Dsd Tc Operational (Oper)
Scope	Application
Description	*Vr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Vrf/<string> Dsd/<enum> TrafficClass/<tc>* The attributes of the *TrafficClass* component specify per-packet traffic

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management parameters that control how individual packets are forwarded.

A packet is associated with a *TrafficClass* component instance according to the *trafficClass* provisioned attribute of the *PerHopBehavior* component instance the packet is using. See the description of the *PerHopBehavior* component for an explanation of how *PerHopBehavior* component instances are associated with packets.

The *DifferentiatedServicesDomain* must have a *TrafficClass/standard* subcomponent instance.

Each of the *TrafficClass* component instances should be referenced by at least one of the *DifferentiatedServicesDomain PerHopBehavior* component instances.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf Dsd Tc **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains the provisioned attributes of the *TrafficClass* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Dsd Tc **schedulingClass8Queues (sc8q)**

Access: Read and write

Description: This attribute specifies a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass*

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component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

TrafficClass	*schedulingClass8Queues*
critical	***7***
premium	***6***
network	***5***
platinum	***4***
gold	***3***
silver	***2***
bronze	***1***
standard	***0***

Mib — no_mib

Values — Decimal (0..7)

Default — No default

ATTRIBUTE Rtr Vrf Dsd Tc schedulingClass4Queues (sc4q)

Access — Read and write

Description — This attribute specifies a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at the interface where the packet is transmitted. Per-packet selection of egress connections is supported only if these conditions are all true:

i) for the *Vr* component, the value of the associated *mediaType* attribute under the *IpPort* component is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***; for *Router* and *Vrf*, the media associated with the interface is *AtmMpe* or *IpoDlci*.
ii) more than one Layer 2 connection is configured to the next hop IP router, and
iii) each connection is configured with a different connection class value.

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Normally the packet is transmitted on the connection whose connection class is equal to the *schedulingClass4Queues* value given to the packet. If that connection does not exist, then the connection having the next lower connection class is used. If that connection does not exist also, then the connection having the next higher connection class is used.

Locally generated IP multicast and IP broadcast packets are not eligible for per-packet selection of egress connections. Each of these packets is copied and transmitted individually on each of the available connections to the next hop IP router.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte* the connection class is specified by the *ipCos* attribute of the *StaticDlci* and *DynamicDlciDef* subcomponents. For *IpDlciGroup* and *IpoDlci* the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent.

If each Layer 2 connection is configured to provide different policing and scheduling characteristics, then the forwarding behaviors of IP and MPLS packets are differentiated as they transit through the Layer 2 network. In general, the scheduling characteristics of the connections should be configured to be better for numerically greater connection class values. For example, if four *AtmConnection* components are associated with *AtmIf* components configured for ATM service classes ***UBR***, ***nrtVBR***, ***rtVBR***, and ***CBR***, then the *ipCos* attributes of the *AtmConnection* components should be either ***0***,***1***,***2***, and ***3***, respectively, or ***0***,***1***,***3***, and ***2*** respectively.

The *schedulingClass4Queues* attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

Default values for all domains, except *assuredForwarding (af)*:

TrafficClass schedulingClass4Queues

---

critical ***2***
premium ***3***
network ***2***
platinum ***1***
gold ***1***
silver ***1***
bronze ***1***
standard ***0***

Default values for *assuredForwarding (af)* domain only:

TrafficClass schedulingClass4Queues

---

critical

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	2
	premium ***3***
	network ***2***
	platinum ***3***
	gold ***2***
	silver ***1***
	bronze ***0***
	standard ***0***

Mib	no_mib
Values	Decimal (0..3)
Default	No default

GROUP Rtr Vrf Dsd Tc **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *TrafficClass* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd Tc **operSchedulingClass8Queues (operSc8q)**

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Tc **operSchedulingClass4Queues (operSc4q)**

Access	Read only

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Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component.
Mib	no_mib
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Tc **operSchedulingClass3Queues (operSc3q)**

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3 or 2***, then the *operSchedulingClass3Queues* attribute value is ***2***; otherwise both values

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are equal.

Mib	no_mib
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Tc operSchedulingClass2Queues (operSc2q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3***, then the *operSchedulingClass2Queues* attribute value is ***1***; otherwise it is ***0***.
Mib	no_mib
Values	Decimal (0..1)
Default	No default

COMPONENT Rtr Interface (If)

Instance	IP address
Groups	GROUP Rtr If AdministrativeControl (AdminControl) GROUP Rtr If Provisioned (Prov) GROUP Rtr If NetMaskProv GROUP Rtr If OperationalStatus (OperStatus) GROUP Rtr If OsiState (State) GROUP Rtr If Operational (Oper) GROUP Rtr If RelayBcOperational (RelayBcOper) GROUP Rtr If IfTable (Ift) GROUP Rtr If AdditionalInfo
Scope	Application
Description	*Rtr<string> Interface/<string>* *Rtr/<string> Vrf/<string> Interface/<string>*

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The *Interface* component represents a logical interface to the Ip network. When the *Interface* component is configured under *Vrf*, ***rfc2547bis*** must be present in the *featureList* of the *SW Lpt/<string>* component associated with this *Interface*.

Mib: no_mib

Opt. Subcomp.:
COMPONENT Rtr If AtmMultiprotocolEncapsulation (AtmMpe)
COMPONENT Rtr If BootpPort (BootpP)
COMPONENT Rtr If OspfInterface (OspfIf)
COMPONENT Rtr If IsisInterface (IsisIf)
COMPONENT Rtr If IngressServices (IS)
COMPONENT Rtr If EgressServices (ES)
COMPONENT Rtr If RipInterface (RipIf)
COMPONENT Rtr If VrrpPort
COMPONENT Rtr If Loopback (Lb)
COMPONENT Rtr If RsvpTeIf
COMPONENT Rtr If LabelDistributionProtocolIf (LdpIf)
COMPONENT Rtr If IpoDlci
COMPONENT Rtr If EnetApplication (Enet)
COMPONENT Rtr If PppApplication (Ppp)

Dyn. Subcomp.: COMPONENT Rtr If MplsBgpInterface (MplsBgpIf)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr If AdministrativeControl (AdminControl)

Properties: Provisioned

Description: This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.

Mib: no_mib

ATTRIBUTE Rtr If snmpAdminStatus

Access: Read and write

Description: The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

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Values	up down testing
Default	up

GROUP Rtr If Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for an Interface to the IP network.
Mib	no_mib

ATTRIBUTE Rtr If arpStatus

Access	Read and write
Description	This attribute specifies whether ARP is enabled or disabled on this *Interface*. If ***auto*** is specified, an appropriate value will be selected based on the *Interface* media type.
Mib	no_mib
Values	enabled disabled auto
Default	auto

ATTRIBUTE Rtr If proxyArpStatus

Access	Read and write
Description	This attribute specifies whether Proxy ARP is enabled or disabled for this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr If arpNoLearn

Access	Read and write
Description	This attribute specifies whether or not dynamic host entries will be installed in the ARP table when ARP packets are received on this *Interface*.
Mib	no_mib
Values	enabled disabled

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Default	disabled

ATTRIBUTE Rtr If sendRedirect

Access	Read and write
Description	This attribute specifies whether or not ICMP host redirects will be sent out this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr If multicastStatus

Access	Read and write
Description	This attribute specifies whether or not IP multicast packets can be sent out this *Interface*. If ***auto*** is specified, an appropriate value will be selected based on the *Interface* media.
Mib	no_mib
Values	enabled disabled auto
Default	auto

ATTRIBUTE Rtr If relayAddress

Access	Read and write
Description	This attribute specifies a relay broadcast address for this *Interface*. Each packet, received on this *Interface*, meeting the relay broadcast criteria will be forwarded to the specified relay broadcast address. An relay address of all zero's indicates no relay broadcast address.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr If relayBroadcast

Access	Read and write
Description	This attribute specifies how packets, received on other *Interface*, meeting the relay broadcast criteria, will be forwarded out this *Interface*. The three options are described as follows: ***enabled***: packets will be forwarded out this *Interface*. ***disabled***: packets will not be forwarded out this *Interface*. ***auto***: packets will be forwarded out this *Interface* only when the bridge state is forwarding.

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Mib	no_mib
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Rtr If linkDestinationAddress

Access	Read and write
Description	This attribute specifies the address for the link destination for this *Interface*. This attribute is required for PPP media when the netmask of the *Interface* is 32 bit.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr If lanModel

Access	Read and write
Criticality	Component
Description	This attribute specifies the lan model to use for this *Interface*.
Mib	no_mib
Values	localAreaNetwork (lan) nonBroadcastMultipleAccess (nbma)
Default	localAreaNetwork

ATTRIBUTE Rtr If interfaceType

Access	Read and write
Description	This attribute specifies whether the interface is an access or a core interface. For Router Interfaces, the default value is ***core***. For Vrf Interfaces, the default value is ***access***.
Mib	no_mib
Values	unspecified access core
Default	unspecified

ATTRIBUTE Rtr If icmpMaskReply

Access	Read and write
Description	This attribute specifies whether or not replies will be generated in response to ICMP Address Mask Requests received on this *Interface.*

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Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr If directedBroadcast

Access	Read and write
Description	This attribute specifies whether or not directed broadcast to physical broadcast translation is enabled for incoming traffic on this *Interface.* The IP router requirement (RFC1812) says this translation should be ***enabled***; however, in some network environments, setting this attribute to ***disabled*** may prevent operational problem such as broadcast storms. Note that in some configuration, setting this attribute to ***disabled*** may cause Bootp to fail.
Mib	no_mib
Values	enabled disabled
Default	enabled

GROUP Rtr If NetMaskProv

Properties	Provisioned
Description	This group contains attributes required to define a *netMask*.
Mib	no_mib

ATTRIBUTE Rtr If netMask

Access	Read and write
Description	This attribute specifies the subnet mask for this *Interface*. This attribute must be specified because the IP application will not automatically provide a default value. If the media is: 1) *Loopback* with *mode* ***primayLoopback***, then the value of the *netMask* attribute must be ***255.255.255.255***; 2) *Loopback* with *mode* ***alwaysUpInterface***, then the value of the *netMask* attribute can be any non-zero value; 3) *Ppp*, then the value of the *netMask* attribute can be any non-zero value; 3) another other media, then the value of the *netMask* attribute can be any non-zero value other than ***255.255.255.255***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

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GROUP Rtr If OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr If snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr If OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

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GROUP Rtr If Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*.
Mib	no_mib

ATTRIBUTE Rtr If operArpStatus

Access	Read only
Description	This attribute indicates the current operational ARP status. If the provisioned *arpStatus* is set to ***auto***, then the IP application automatically determines the *operArpStatus* based on the *Interface* media type.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr If operMulticastStatus

Access	Read only
Description	This attribute indicates the current operational Multicast status. If the provisioned *multicastStatus* is set to ***auto***, then the IP application automatically determines the *operMulticastStatus* based on the *Interface* media.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr If broadcastAddress

Access	Read only
Description	This attribute indicates the destination IP address to be used by any application which needs to broadcast on this *Interface*.
Mib	no_mib
Values	IP address
Default	No default

GROUP Rtr If RelayBcOperational (RelayBcOper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*'s or *IpPort*'s RelayBc counters.

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Mib	no_mib

ATTRIBUTE Rtr If relayAddressCount

Access	Read only
Description	This attribute indicates the number of frames received on this *Interface* or *IpPort* which were forwarded to the provisioned *relayAddress* for this port. This counter wraps to zero when it reaches it's maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If relayBcCount

Access	Read only
Description	This attribute indicates the number of frames received on this port which were forwarded to the *broadcastAddress* on other *IpPorts* or *Interfaces*. This counter is incremented once for every frame received on this port regardless of how many other ports it was sent on. This counter wraps to zero when it reaches it's maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr If IfTable (Ift)

Properties	Operational
Description	This group represents the SNMP interface table entry.
Mib	no_mib

ATTRIBUTE Rtr If ifAdminStatus (admStatus)

Access	Read only
Description	This attribute provides the current administration status of the interface. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr If ifOperStatus (opStatus)

Access	Read only

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Description	This attribute provides the current operational status of the interface. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	down

ATTRIBUTE Rtr If ifLastChange (lastChange)

Access	Read only
Description	This attribute provides the value of sysUpTime at the time the interface entered its current operational state. If the current state was entered prior to the last re- initialization of the local network management subsystem, then this object contains a zero value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInOctets (inOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. The 64-bit version may be available in the *ifHCInOctets* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutOctets (outOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. The 64-bit version may be available in the *ifHCOutOctets* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInDiscards (inDiscard)

Access	Read only

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Description	This attribute reports the number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher layer protocol. One possible reason for discarding such a packet could be to free up buffer space.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutDiscards (outDiscard)

Access	Read only
Description	This attribute reports the number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInErrors (inErr)

Access	Read only
Description	This attribute reports the number of inbound packets that contained errors preventing them from being deliverable to a higher layer protocol.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutErrors (outErr)

Access	Read only
Description	This attribute reports the number of outbound packets that could not be transmitted because of errors.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInUcastPkts (inUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast

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	address at this sub-layer. The 64-bit version may be available in the *ifHCInUcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutUcastPkts (outUcast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. The 64-bit version may be available in the *ifHCOutUcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInNuCastPkts (inNucast)

Access	Read only
Description	This attribute reports the number of non-unicast (i.e., subnetwork-broadcast or subnetwork-multicast) packets delivered to a higher-layer protocol. The corresponding 64-bit versions may be available in the *ifInMulticastPkts* attribute and the *ifInBroadcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutNuCastPkts (outNuCast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols request be transmitted to a non-unicast address, including those that were discarded or not sent. The corresponding 64-bit versions may be available in the *ifOutMulticastPkts* and *ifOutBroadcastPkts* attributes.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInUnknownProtos (inUknownProt)

Access	Read only

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Description	This attribute reports the number of packets received via the interface which were discarded because of an unknown or unsupported protocol.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutQlength (outQlen)

Access	Read only
Description	This attribute represents the length of the output packet queue (in packets).
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifDescription (desc)

Access	Read only
Description	This attribute provides a textual string containing information about the interface. This string includes the name of the manufacturer, the product name and the version of the hardware interface.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr If ifType (type)

Access	Read only
Description	This attribute describes the type of interface, distinguished according to the physical/link protocol(s) immediately below the network layer in the protocol stack
Mib	no_mib
Values	other ddnX25 rfc877x25 ethernetCsmacd ethernet8023 tokenBus8024 tokenring8025 man802 starLan hyperChannel fddi

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lapb
sdlc
ds1
e1
basicIsdn
primaryIsdn
propPointToPointSerial
ppp
bnx
ds3
smds
frameRelay
sonetSdh
frameRelayService
v35
hssi
sonetPath
aflane8023
aflane8025
v11
channel
pppIwf
atmMpeVcEncap
atmMpeLlcEncap
ilsForwarder
ipTunnel
virtualMedia
localMedia

Default — No default

ATTRIBUTE Rtr If ifMtu (mtu)

Access — Read only

Description — This attribute represents the size of the largest datagram which can be sent/received on the interface, specified in octets. For interfaces that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the interface.

Mib — no_mib

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Rtr If ifSpeed (speed)

Access — Read only

Description — This attribute provides an estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifPhysicalAddress (phys)

Access	Read only
Description	This attribute represents the interface's address at the protocol layer immediately `below' the network layer in the protocol stack. For interfaces which do not have such an address (e.g., a serial line), this object should be an octet string of zero length.
Mib	no_mib
Values	String (0..17, ASCII)
Default	No default

GROUP Rtr If AdditionalInfo

Properties	Operational
Description	This group contains additional information associated with this ifEntry, including SNMP ifXTable entry information.
Mib	no_mib

ATTRIBUTE Rtr If ifHCInOctets (inHCOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifInOctets* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ifHCInUcastPkts (inHCUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. This High Capacity counter is a 64-bit version of the *ifInUcastPkts* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

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ATTRIBUTE Rtr If ifHCOutOctets (outHCOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifOutOctets* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ifHCOutUcastPkts (outHCUcast)

Access	Read only
Description	This attibutes reports the total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. This High Capacity counter is a 64-bit version of the *ifOutUcastPkts* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr If AtmMultiprotocolEncapsulation (AtmMpe)

Groups	GROUP Rtr If AtmMpe CustomerIdentifierData (CidData) GROUP Rtr If AtmMpe IfEntryProv (IfEntry) GROUP Rtr If AtmMpe Provisioned (Prov) GROUP Rtr If AtmMpe OsiState (State) GROUP Rtr If AtmMpe OperationalStatus (OperStatus)
Scope	Application
Description	*Rtr/<string> If/<IP addr> AtmMpe* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe* This subcomponent represents a logical interface between the Router and an ATM media (*AtmIf*). Multiprotocol Encapsulation as specified in RFC1483 is used to transfer higher-layer protocol data across virtual channels in an ATM network. *AtmMpe* provides a means to associate multiple ATM virtual channel connections with a single *Router Interface*.

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The *AtmMpe* component is associated with virtual channel connections via a linkage attribute in each *AtmConnection* subcomponent.

Mib	no_mib
Subcomponents	COMPONENT Rtr If AtmMpe AtmConnection (Ac)
Opt. Subcomp.	COMPONENT Rtr If AtmMpe SpvcTerminationPoint (Stp)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If AtmMpe CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

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GROUP Rtr If AtmMpe IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr If AtmMpe ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr If AtmMpe Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmMpe* component under the Router Interface.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe maxTransmissionUnit (mtu)

Access	Read and write
Description	This attribute sets the size of the largest datagram which can be sent on the interface. This includes the size of the Logical Link Control header (if applicable) as well as the protocol data unit.
Mib	no_mib

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Values	Decimal (256..9188)
Units	octets
Default	9188

ATTRIBUTE Rtr If AtmMpe encapType (etype)

Access	Read and write
Criticality	Component
Description	This attribute specifies the RFC-1483 encapsulation type to be used for the *AtmConnections* under this *AtmMpe*. Specifying ***llcEncap*** allows multiplexing of multiple protocols over the *VCCs*. The protocol of the carried PDU will be identified by an IEEE 802.2 Logical Link Control header. If Inverse ARP is to be carried over a VCC, ***llcEncap*** must be used. If the *Stp* component exists under the *AtmMpe*, ***llcEncap*** must be used. Specifying ***ipVcEncap*** indicates that all the VCCs (that is, *AtmConnection*s) under an *AtmMpe* component will use VC-based multiplexing and will carry IP PDUs only. Specifying ***llcBridgeEncap*** indicates that the VCC (that is, the *AtmConnection*) under an *AtmMpe* component will use the bridged Ethernet encapsulation format specified in RFC-1483. Note that when setting the *encapType* attribute to ***llcBridgeEncap***, the *maxTransmissionUnit* must be set within the ***[256 .. 1524]*** range.
Mib	no_mib
Values	llcEncap ipVcEncap llcBridgeEncap
Default	llcEncap

GROUP Rtr If AtmMpe OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If AtmMpe operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If AtmMpe usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

GROUP Rtr If AtmMpe OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: no_mib

ATTRIBUTE Rtr If AtmMpe snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

COMPONENT Rtr If AtmMpe SpvcTerminationPoint (Stp)

Groups:
GROUP Rtr If AtmMpe Stp Provisioned (Prov)
GROUP Rtr If AtmMpe Stp Operational (Oper)

Scope: Application

Description:
AtmMpe/n Stp
Rtr/<string> If/<IP addr> AtmMpe Stp
Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Stp
This component specifies the SPVC related provisioning for the *AtmMpe*

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component. Its presence identifies an *AtmMpe* component that contains one or more SPVC connections.

Mib: no_mib

Common Verbs: Help, List, Display, Add, DELete

GROUP Rtr If AtmMpe Stp Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes of the *SpvcTerminationPoint* component.

Mib: no_mib

ATTRIBUTE Rtr If AtmMpe Stp localAddress (laddr)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the NSAP address of this *AtmMpe* component. The default is an empty string. If no NSAP address is provisioned, a default NSAP address is provided. To view the generated default address refer to the *opLocalAddress* attribute under this component after the *act prov* command is executed.

Mib: no_mib

Values: String (0..20, Hex)

Default: No default

ATTRIBUTE Rtr If AtmMpe Stp softPvcRetryPeriod (retry)

Access: Read: All
Write: All

Description: This attribute specifies the interval at which an SPVC connection attempts establishment after a failed setup attempt occurs. The *softPvcRetryPeriod* attribute applies to all connections managed by the parent *AtmMpe* component.

Mib: no_mib

Values: Decimal (10..3600)

Units: seconds

Default: 20

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ATTRIBUTE Rtr If AtmMpe Stp softPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off before attempting to reestablish a connection after an established SPVC connection is cleared/released. The *softPvcHoldOffTime* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	no_mib
Values	Decimal (0; 50..3600000)
Units	msec
Default	20000

GROUP Rtr If AtmMpe Stp Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SpvcTerminationPoint* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Stp opLocalAddress (addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of this *AtmMpe* component. The value is the same as the provisioned *laddr*. If the *laddr* is not provisioned, the value of *addr* is automatically generated by the software.
Mib	no_mib
Values	String (0..20, Hex)
Default	""

COMPONENT Rtr If AtmMpe AtmConnection (Ac)

Instance	Decimal (1..255)
Groups	GROUP Rtr If AtmMpe Ac Provisioned (Prov) GROUP Rtr If AtmMpe Ac OsiState (State) GROUP Rtr If AtmMpe Ac Operational (Oper) GROUP Rtr If AtmMpe Ac Statistics (Stats) GROUP Rtr If AtmMpe Ac IpIfLink
Scope	Application
Description	*AtmMpe/n AtmConnection/n* *Rtr/<string> If/<IP addr> AtmMpe AtmConnection/n* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe AtmConnection/n* This component represents a virtual channel through which inter-

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networking frames are transported using RFC 1483 encapsulation.

The *AtmConnection* component contains OSI state information, frame based statistics, and the linkage to an ATM virtual channel connection. This component's instance value is used by higher-layer protocols when referring to a specific ATM connection.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr If AtmMpe Ac SourcePvc (SrcPvc) COMPONENT Rtr If AtmMpe Ac DestinationPvc (DstPvc)
Dyn. Subcomp.	COMPONENT Rtr If AtmMpe Ac AtmConnection (AtmCon)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If AtmMpe Ac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmConnection* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac atmConnection (link)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint, *AtmIf/n Vcc/vpi.vci Nep,* that this connection is associated with. It must not be provisioned for an SPVC connection.
Mib	no_mib
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the *AtmConnection.* This value is used to distinguish the connection from others for the purpose of IP and MPLS forwarding and accounting. Connection class values vary in

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range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers.

If a packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one *AtmConnection*, then one of the connections is selected for transmitting the packet.

For IP packets the selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. For MPLS packets the selection is based on either the DSCP field of the IP packet or the EXP field of the MPLS packet.

DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component.
EXP based selection of the the outgoing connection is explained in the description of the *MplsServiceMap* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *AtmConnection*.

If the *AtmConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the *AtmConnection*. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	no_mib
Values	Decimal (0..3)
Default	0

ATTRIBUTE Rtr If AtmMpe Ac **mplsSignaling (mplsSig)**

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this AtmMpe Ac is dedicated for MPLS signaling (LDP or CR-LDP), or shared between MPLS and IP. If the value is ***dedicated***, the *Ac* is dedicated for MPLS signaling; the route is not found in IP ARP. If the value is ***shared***, the *Ac* is accessible by IP. The checking of this provisionable attribute is done through semantic checking. The attribute takes on the value ***shared*** by default, and can only be ***dedicated*** if there are more than one *Ac* under the *AtmMpe*.
Mib	no_mib
Values	shared dedicated
Default	shared

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GROUP Rtr If AtmMpe Ac **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If AtmMpe Ac **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If AtmMpe Ac usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If AtmMpe Ac Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmConnection* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac speed

Access	Read only
Description	This attribute indicates the approximate bit rate for the connection. The bit rate is determined from the cell rate provisioned for the *Vcc* linked to this connection. The cell rate is multiplied by 53 bytes per cell and 8 bits per byte to obtain the bit rate. The *ifSpeed* of the entry in the ifTable corresponding to the *AtmMpe* component is the lowest speed of all the connections associated with the *AtmMpe* component. This attribute is always equal to 0 for an SPVC.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	bit/s

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Default	No default

GROUP Rtr If AtmMpe Ac Statistics (Stats)

Properties	Operational
Description	This group contains the frame based statistics maintained for the *AtmConnection* component. For cell based statistics, see the *Vcc* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac outPackets

Access	Read only
Description	This attribute counts the total number of packets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac outOctets

Access	Read only
Description	This attribute counts the total number of octets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac outDiscards

Access	Read only
Description	This attribute counts the total number of packets which were supposed to be sent on this connection but were discarded due to congestion or the connection being down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac inPackets

Access	Read only
Description	This attribute counts the total number of packets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac **inOctets**

Access	Read only
Description	The attribute counts the total number of octets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac **inUnknownProtos**

Access	Read only
Description	This attribute counts the total number of packets received on this connection which were discarded because they contained an unknown or unsupported protocol (includes packets received for protocols not currently bound to the associated *ProtocolPort* component). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac **inErrors**

Access	Read only
Description	This attribute counts the total number of packets received on the connection which contained errors preventing them from being delivered to a higher-layer protocol (includes short frames). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr If AtmMpe Ac **lpIfLink**

Properties	Provisioned
Description	This group contains the link between this component and an *IpLogicalInterface*.
Mib	no_mib

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ATTRIBUTE Rtr If AtmMpe Ac linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. This attribute is not applicable and cannot be set when the *AtmConection* component is added under an *Rtr If AtmMpe* or an *Rtr Vrf If AtmMpe* component. When set, the value of this attribute must be consistent with the *linkToPrototocolPort* attribute value of the parent *AtmMpe* component. That is, they must both point to the same *PrototocolPort* component.
Mib	no_mib
Values	Link (Service, linkToMediaConnection)
Default	No default

COMPONENT Rtr If AtmMpe Ac SourcePvc (SrcPvc)

Groups	GROUP Rtr If AtmMpe Ac SrcPvc Provisioned (Prov) GROUP Rtr If AtmMpe Ac SrcPvc Operational (Oper)
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* This component contains addressing and control information used by the calling SPVC endpoint to set up an SPVC connection to a remote called SPVC endpoint. An *Stp* component must exist under the *Ac* component if a *SrcPvc* component exists.
Mib	AtmMpeSpvc
Subcomponents	COMPONENT Rtr If AtmMpe Ac SrcPvc TrafficManagement (Tm)
Common Verbs	Help List Display Add DELete

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VERB Clear (Clr) Rtr If AtmMpe Ac SrcPvc

Impact	Service
Description	*Clear AtmMpe/n Ac/m SrcPvc* *Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* *Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it. If there is no active SPVC, the clear command has no effect.

GROUP Rtr If AtmMpe Ac SrcPvc **Provisioned (Prov)**

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SourcePvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc **remoteAddress (raddr)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of the called SPVC endpoint (this must be a remote *AtmMpe* component).
Mib	AtmMpeSpvc
Values	String (20, Hex)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc **remoteConnectionIdentifier (rci)**

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the remote connection identifier of the SPVC. It is provisioned with the *Ac* instance of the *AtmMpe Ac* component at the called SPVC endpoint.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	1

GROUP Rtr If AtmMpe Ac SrcPvc **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvc* component.

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Mib	AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc **state**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc **retryCount (retry)**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed connection attempts.
Mib	AtmMpeSpvc
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc **lastClearCause (cause)**

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT Rtr If AtmMpe Ac SrcPvc **TrafficManagement (Tm)**

Groups	GROUP Rtr If AtmMpe Ac SrcPvc Tm Provisioned (Prov)
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc Tm* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm*

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This component contains ATM QoS information used by the calling endpoint of an SPVC connection to request a particular QoS from ATM.

Mib AtmMpeSpvc

Common Verbs Help
List
Display

GROUP Rtr If AtmMpe Ac SrcPvc Tm **Provisioned (Prov)**

Properties Provisioned

Description This attribute group contains the provisionable attributes of the *TrafficManagement* component.

Mib AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc Tm **atmServiceCategory (service)**

Access Read: All
Write: All

Criticality Component

Description This attribute specifies the desired ATM service category for this connection.

Mib AtmMpeSpvc

Values unspecifiedBitRate (ubr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
constantBitRate (cbr)

Default unspecifiedBitRate

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc Tm **peakCellRate (pcr)**

Access Read: All
Write: All

Criticality Component

Description This attribute specifies the desired peak cell rate (PCR) in both directions for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.

Mib AtmMpeSpvc

Values Decimal (0..2147483647)

Default 0

COMPONENT Rtr If AtmMpe Ac **DestinationPvc (DstPvc)**

Groups GROUP Rtr If AtmMpe Ac DstPvc Operational (Oper)

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Scope	Application
Description	*AtmMpe/n Ac/m DstPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* The *DestinationPvc* component represents the called endpoint of an SPVC connection.
Mib	AtmMpeSpvc
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) Rtr If AtmMpe Ac DstPvc

Impact	Service
Description	*Clear AtmMpe/n Ac/m DstPvc* *Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it. If there is no active SPVC, the clear command has no effect.

GROUP Rtr If AtmMpe Ac DstPvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *DstPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac DstPvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac DstPvc remoteAddress (raddr)

Access	Read: All Write: Illegal

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Description	This attribute indicates the NSAP address of the remote (calling) endpoint. If a connection is not established, *remoteAddress* is an ***empty string***.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	""

ATTRIBUTE Rtr If AtmMpe Ac DstPvc **remoteConnectionIdentifier (rci)**

Access	Read: All Write: Illegal
Description	This attribute indicates the remote connection identifier of the remote (calling) SPVC endpoint (that is, the *Ac* instance of the remote *AtmMpe Ac* component). If the connection is not established, the *remoteConnectionIdentifier* is an ***empty string***.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac DstPvc **lastClearCause (cause)**

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT Rtr If AtmMpe Ac **AtmConnection (AtmCon)**

Groups	GROUP Rtr If AtmMpe Ac AtmCon Operational (Oper)
Scope	Device

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Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP Rtr If AtmMpe Ac AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmMpeSpvc
Values	The name of the component
Default	No default

COMPONENT Rtr If BootpPort (BootpP)

Groups	GROUP Rtr If BootpP Provisioned (Prov) GROUP Rtr If BootpP AdministrativeControl (AdminControl) GROUP Rtr If BootpP OperationalStatus (OperStatus) GROUP Rtr If BootpP OsiState (State) GROUP Rtr If BootpP Statistics (Stats)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort BootpPort* *Rtr/<string> Interface/<string> BootpPort* *Rtr/<string> Vrf/<string> Interface/<string> BootpPort* An *BootpPort* component must be provisioned for each *IpPort* or *Interface* where BOOTP request messages will be received. Each *BootpPort* component can be provisioned with a set of relay addresses. Each

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BOOTP request message received on this port will be sent to the provisioned set of relay addresses.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr If BootpP Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes for the *BootpPort* component.

Mib: no_mib

ATTRIBUTE Rtr If BootpP relayForwardStatus (status)

Access: Read and write

Description: This attribute controls how BOOTP request packets, received on another port, will be flooded out this port. If *relayForwardStatus* is ***enabled***, BOOTP requests received on another port will be broadcast out this port. When *relayForwardStatus* is ***disabled***, BOOTP requests will not be broadcast out this port. If ***auto*** is used, the bridge spanning tree database is used to determine if BOOTP requests should be broadcast out this port.

Note that when using ***enabled***, it is possible to create misconfigurations which will result in broadcast storms. When using this feature with multiple routers, make sure there are no broadcast forwarding loops. Using ***auto*** with bridge spanning tree is safer to use if the network is running bridge spanning tree.

Note that for ***auto*** to have effect, bridge spanning tree must be running on the corresponding *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface*.

Mib: no_mib

Values:
enabled
disabled
auto

Default: disabled

ATTRIBUTE Rtr If BootpP bootpLogicalInterface (portIf)

Access: Read and write

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Description	This attribute identifies the logical interface whose address is to be the GIADDR of this BOOTP port. If not set, the address of the first logical port or Interface is chosen.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr If BootpP relayAddress (addr)

Access	Read and write
Description	This attribute identifies a list of relay addresses. When a BOOTP request message is received on this port, the request will be forwarded to the IP addresses provisioned in *relayAddress*. Note that BOOTP requests are also broadcast out all other *BootpPort*'s according to the *relayForwardStatus* of the outgoing port.
Mib	no_mib
List of	IP address
List Size	3
Default	No default

GROUP Rtr If BootpP AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr If BootpP snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr If BootpP OperationalStatus (OperStatus)

Properties	Operational

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Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr If BootpP snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr If BootpP OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If BootpP adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If BootpP operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If BootpP usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If BootpP Statistics (Stats)

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	no_mib

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ATTRIBUTE Rtr If BootpP inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr If OspfInterface (OspfIf)

Groups	GROUP Rtr If OspfIf Provisioned (Prov) GROUP Rtr If OspfIf Operational (Oper) GROUP Rtr If OspfIf Metric
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf* *Rtr/<string> Interface/<Ip Address> OspfIf* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf* An OspfIf component can be created under each *logicalIf* or *Interface* to run OSPF protocol.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr If OspfIf Md5KeyId (KeyId) COMPONENT Rtr If OspfIf TypeOfService (TOS) COMPONENT Rtr If OspfIf Neighbor (Nbr)
Common Verbs	Help List Display Add DELete

GROUP Rtr If OspfIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes identifies a provisionable set of attributes.
Mib	no_mib

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ATTRIBUTE Rtr If Ospfif areaId

Access	Read and write
Description	The area Id this Ospf interface belongs to.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr If Ospfif ifType

Access	Read and write
Description	This attribute specifies the type of this *OspfInterface*. Neighbors are dynamically discovered using the Hello protocol for an *ifType* of ***broadcast***, ***pointToPoint***, or ***pointToMultipoint*** when *pointToMultiPointMode* is set to ***broadcast***. A *Neighbor* component must be configured for an *ifType of* ***nbma*** or ***pointToMultiPoint***, when *pointToMultiPointMode* is set to ***nonBroadcast***. When *ifType* is set to ***passive***, neighbors are not required.
Mib	no_mib
Values	broadcast nbma pointToPoint passive pointToMultiPoint (ptmp)
Default	No default

ATTRIBUTE Rtr If Ospfif snmpAdminStatus

Access	Read and write
Description	The administrative status of this Ospf interface.
Mib	no_mib
Values	up down
Default	up

ATTRIBUTE Rtr If Ospfif rtrPriority (rtrPri)

Access	Read and write
Description	The priority of this interface. Used in multi-access networks, this field is used in the designated router election algorithm. The value 0 signifies that the router is not eligible to become the designated router on this particular protocol port. In the event of a tie in this value, routers will use their *routerId* as a tie breaker.
Mib	no_mib

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Values	Decimal (0..255)
Default	1

ATTRIBUTE Rtr If Ospfif transitDelay

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Rtr If Ospfif retransInterval (retransInt)

Access	Read and write
Description	The number of seconds between link-state advertisements retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Rtr If Ospfif helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Rtr If Ospfif rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router's hello packets have not been seen before it's neighbors declare the router down. This should be some

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	multiple of the *helloIntereval*. This value must be the same for all routers attached to a common network.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	40

ATTRIBUTE Rtr If Ospfif pollInterval (pollInt)

Access	Read and write
Description	The largest time interval, in seconds, between the hello packets sent to an inactive non-broadcast multi-access neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	120

ATTRIBUTE Rtr If Ospfif authKey

Access	Write only
Description	The Authentication Key. If the value of the attribute *authType* of an *AreaEntry* is ***simplePassword***, and the *authKey* length is shorter than 8 octets, then the value of *authKey* will be left adjusted zero-filled to 8 octets.
Mib	no_mib
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Rtr If Ospfif multicastForwarding (multicastFwd)

Access	Read and write
Description	The way multicasts should be forwarded on this interface; non forwarded, forwarded as data-link multicasts, or forwarded as data-link unicasts. Data-link multicasting is not meaningful on point-to-point and NBMA(No Broadcast Multi Access) interfaces, and setting this attribute to blocked effectively disables all multicast forwarding.
Mib	no_mib
Values	blocked
Default	blocked

ATTRIBUTE Rtr If Ospfif pointToMultiPointMode (ptmpmode)

Access	Read and write

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Description	This attribute specifies the Point-to-Multipoint mode to use when the *ifType* of this *OspfInterface* is ***pointToMultipoint***. A value of ***nonBroadcast*** restricts this interface to only send unicast packets, Hence, a *Neighbor* component must be configured. A value of ***broadcast*** enables sending multicast OSPF Hello packets to dynamically discover neighbors.
Mib	no_mib
Values	nonBroadcast (nbc) broadcast (bc)
Default	nonBroadcast

ATTRIBUTE Rtr If Ospfif **authType**

Access	Read and write
Description	The authentication type specified for this *Ospf* interface.
Mib	no_mib
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Rtr If Ospfif **Operational (Oper)**

Properties	Operational
Description	This group of attributes identifies operational state that this interface is performing.
Mib	no_mib

ATTRIBUTE Rtr If Ospfif **state**

Access	Read only
Description	The state of the OSPF interface.
Mib	no_mib
Values	down loopback waiting pointToPoint designatedRouter backupDesignatedRouter otherDesignatedRouter
Default	designatedRouter

ATTRIBUTE Rtr If Ospfif **designatedRouter**

Access	Read only

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Description	The Ip address of the designated router.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr If OspfIf **backupDesignatedRouter**

Access	Read only
Description	The Ip address of the backup designated router
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr If OspfIf **events**

Access	Read only
Description	The number of times this OSPF interface has changed its state or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr If OspfIf **Metric**

Properties	Operational
Description	This group contains the operational metric attribute of this interface.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf **metric**

Access	Read only
Description	This attribute indicates the metric being used by this *OspfIf*. The metric is derived in one of two ways: 1. If there is a *TypeOfService* component provisioned under this *OspfIf* component, then the value of the *metric* attribute is copied from the provisionable attribute *tosMetric*. 2. Otherwise, the metric is computed based on the interface speed. If the interface speed is greater than 100 Mbit/s, then the *metric* is 1. If the interface speed is less than 100 Mbit/s, then the metric is 100 Mbit/s divided by the interface speed. If the interface speed is unknown, then it is treated as 1.54 Mbit/s during the calculation. The value of interface speed is available by displaying the *ifSpeed* attribute of the corresponding *IfTableEntry* component.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr If OspfIf Md5KeyId (KeyId)

Instance	Decimal (1..255)
Groups	GROUP Rtr If OspfIf KeyId Provisioned (Prov) GROUP Rtr If OspfIf KeyId Operational (Oper)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* This component contains the information about various MD5 Authentication keys.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If OspfIf KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf KeyId md5Key (Key)

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	no_mib
Values	String (0..16, ASCII)
Default	""

GROUP Rtr If OspfIf KeyId Operational (Oper)

Properties	Operational

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Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf KeyId inUseForGeneration (inUse)

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	no_mib
Values	true false
Default	false

COMPONENT Rtr If OspfIf TypeOfService (TOS)

Instance	Decimal (0..0)
Groups	GROUP Rtr If OspfIf TOS Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* This component describes the metrics to be advertised for a specified interface at various types-of-service.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If OspfIf TOS Provisioned (Prov)

Properties	Provisioned
Description	Identifies a provisionable set of attributes.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf TOS tosMetric

Access	Read and write
Description	The metric using this typeOfService on this interface.

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Mib	no_mib
Values	Decimal (0..65535)
Default	1

COMPONENT Rtr If OspfIf Neighbor (Nbr)

Instance	IP address
Groups	GROUP Rtr If OspfIf Nbr Provisioned (Prov) GROUP Rtr If OspfIf Nbr Operational (Oper)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* This component represents a neighbor on a multi-access non-broadcast *OspfInterface* configured with its *ifType* attribute set to one of the following: - ***nbma*** and the *rtrPriority* attribute is set to non-zero or - ***pointToMultiPoint*** and *pointToMultiPointMode* is set to ***nonBroadcast***. The operational attributes for this component can also be viewed from: *Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* or *Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* or *Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>*
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If OspfIf Nbr Provisioned (Prov)

Properties	Provisioned
Description	Identifies a group of Provisionable attributes.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf Nbr priority

Access	Read and write
Description	The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network. The higher the number, the better are the chances of being a designated router.

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Mib	no_mib
Values	Decimal (0..255)
Default	1

GROUP Rtr If Ospfif Nbr **Operational (Oper)**

Properties	Operational
Description	Contains the Operational set of attributes for the Neighbor.
Mib	no_mib

ATTRIBUTE Rtr If Ospfif Nbr **rtrId**

Access	Read only
Description	An Ip Address uniquely identifying the neighboring router in the Autonomous System.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr If Ospfif Nbr **options**

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Rtr If Ospfif Nbr **state**

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	no_mib
Values	down attempt init twoWay exchangeStart exchange

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	loading full
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr **events**

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr **lsRetransQlen**

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr **exchangeStatus**

Access	Read only
Description	Indicates the exchange status for a neighbor Entry.
Mib	no_mib
Values	master slave
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr **permanance**

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	no_mib
Values	permanent dynamic
Default	permanent

COMPONENT Rtr If **IsisInterface (IsisIf)**

Groups	GROUP Rtr If IsisIf Provisioned (Prov) GROUP Rtr If IsisIf Operational (Oper)

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GROUP Rtr If IsisIf Statistics (Stats)
GROUP Rtr If IsisIf ErrorStatistics (Errors)

Scope: Application

Description: *Rtr/<string> Interface/<Ip Address> IsisInterface*
An *IsisIf* component can be created under each *Interface* component to run the ISIS protocol.

This component requires an associated *Isis* component to be provisioned.

This component requires at least one *Level* subcomponent to be provisioned.

If the underlying media is ATM based, this component requires an *AtmConn* subcomponent to be provisioned.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr If IsisIf IsisIfLevel (Level)

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr If IsisIf Provisioned (Prov)

Properties: Provisioned

Description: This group contains the set of attributes used to configure an ISIS Interface.

Mib: no_mib

ATTRIBUTE Rtr If IsisIf snmpAdminStatus

Access:
Read: All
Write: All

Description: This attribute specifies the administrative status of this *IsisInterface* component on this *Router*.

Mib: no_mib

Values:
up
down
testing

Default: up

ATTRIBUTE Rtr If IsisIf passive

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Access	Read: All Write: All
Description	This attribute specifies whether the *IsisInterface* should be passive. A passive interface is one whose IP address is advertised in the LSP, but is not involved in ISIS protocol activities (for example, transmitting LSPs and establishing adjacencies).
Mib	no_mib
Values	no yes
Default	no

ATTRIBUTE Rtr If IsisIf lspInterval

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the minimum time between transmission of successive LSPs on this interface. This minimum time applies to any LSP, whether it is the LSP of this *Router*, or another router's LSP that is being retransmitted.
Mib	no_mib
Values	Decimal (33..65535)
Units	msec
Default	100

ATTRIBUTE Rtr If IsisIf lspRetransmitInterval

Access	Read: All Write: All
Description	This attribute specifies, in seconds, the minimum time to wait before retransmitting this *Router's* LSP on this interface. An LSP retransmission occurs if a previously transmitted LSP is not acknowledged. Retransmissions only occur on point-to-point links.
Mib	no_mib
Values	Decimal (1..300)
Units	seconds
Default	5

GROUP Rtr If IsisIf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes associated with the ISIS protocol running on this interface.

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Mib	no_mib

ATTRIBUTE Rtr If IsisIf **upTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, that the ISIS protocol has been operational on this interface.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Rtr If IsisIf **adjacencyChanges (adjChanges)**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an adjacency on this interface has changed state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf **operState (state)**

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the ISIS Interface.
Mib	no_mib
Values	adminDown down up
Default	No default

GROUP Rtr If IsisIf **Statistics (Stats)**

Properties	Operational
Description	The attributes in this group are statistics associated with the normal operation of this *IsisInterface* component.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf **txLsps**

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Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf txPtpHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxPtpHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf txBroadcastHellos

Access	Read: All Write: Illegal

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Description	This attribute indicates the number of broadcast hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxBroadcastHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf txCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) received on this interface since the last time this *Isis*If component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf txPsnps

Access	Read: All Write: Illegal

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Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf totalPacketsTxd

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf totalPacketsRxd

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr If IsisIf ErrorStatistics (Errors)

Properties	Operational

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Description	The attributes in this group are statistics associated with the operation of this *IsisInterface* component. Each attribute counts a specific abnormal event that has occurred since this component was last enabled.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf initFails

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that initialization of this ISIS interface has failed.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf adjRejects

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an attempt to form an adjacency on this interface has failed.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxUnknownPacketTypes

Access	Read: All Write: Illegal
Description	This attribute indicates the number of packets of unknown type that were received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr If IsisIf IsisIfLevel (Level)

Instance	Decimal (1..1)
Groups	GROUP Rtr If IsisIf Level Provisioned (Prov) GROUP Rtr If IsisIf Level Operational (Oper)
Scope	Application

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Description	*Rtr/<string> Interface/<Ip Address> IsisIf Level/<1..2>* The ISIS routing protocol supports a two-level routing hierarchy. This component represents ISIS routing aspects that are specific to each routing level for this ISIS interface. In the current release, only *Level/1* is supported.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If IsisIf Level Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes used to independently configure each ISIS interface routing level.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf Level metric

Access	Read: All Write: All
Description	This attribute specifies the cost of this interface, which is used by the SPF algorithm in this and other routers. This value is advertised in the LSP.
Mib	no_mib
Values	Decimal (0..63)
Default	10

ATTRIBUTE Rtr If IsisIf Level helloInterval

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, between transmission of successive hello messages (IIH PDU).
Mib	no_mib
Values	Decimal (1..20000)
Units	seconds
Default	10

ATTRIBUTE Rtr If IsisIf Level helloMultiplier

Access	Read: All Write: All

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Description	This attribute specifies the factor by which the *helloInterval* attribute is multiplied in order to create the hold time value transmitted in the hello packets (IIH PDU). The hold time value is used by the receiving router to determine how long it should maintain the adjacency if a subsequent hello packet is not received.
Mib	no_mib
Values	Decimal (2..100)
Default	3

ATTRIBUTE Rtr If IsisIf Level **csnpInterval**

Access	Read: All Write: All
Description	This attribute specifies the time interval, in seconds, between successive transmissions of the CSNP PDUs.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	10

ATTRIBUTE Rtr If IsisIf Level **priority**

Access	Read: All Write: All
Description	This attribute specifies the DIS priority for this router. On a multi-access LAN, the router with the highest DIS priority is elected to represent the LAN. The elected router transmits an LSP for the pseudonode representing the LAN.
Mib	no_mib
Values	Decimal (0..127)
Default	64

GROUP Rtr If IsisIf Level **Operational (Oper)**

Properties	Operational
Description	This group contains attributes representing the operational state of this *IsisIf Level* component.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf Level **disId**

Access	Read: All Write: Illegal

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Description	This attribute indicates the system ID of the ISIS router acting as DIS for the LAN to which this interface is attached. For non-LAN interfaces, the value of this attribute is ***N/A***.
Mib	no_mib
Values	String (1..14, ASCII)
Default	No default

ATTRIBUTE Rtr If IsisIf Level **disChanges**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DIS changes that have occurred on this interface for this level.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf Level **adjacencies**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active adjacencies that exist on this interface for this level.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf Level **timeToNextTxHello**

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, until the next Hello message is to be transmitted on this interface for this level.
Mib	no_mib
Values	Decimal (0..600)
Units	seconds
Default	No default

COMPONENT Rtr If **IngressServices (IS)**

Groups	GROUP Rtr If IS IngressServicesLinks (IsLinks) GROUP Rtr If IS ServiceSpecification (Sp) GROUP Rtr If IS InterfaceServices (IntServ)

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Scope	Application
Description	*Vr/<string> Pp/<string> Ip IngressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> IngressServices* This component and its subcomponents represent various traffic management services applied to IP traffic entering an interface.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr If IS MeterStatistics (Meter)
Common Verbs	Help List Display Add DELete

GROUP Rtr If IS IngressServicesLinks (IsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic entering an interface.
Mib	no_mib

ATTRIBUTE Rtr If IS linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic entering an interface.
Mib	no_mib
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Rtr If IS linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic entering an interface.
Mib	no_mib
Values	Link (Service, linkToPolicerUsers)
Default	No default

GROUP Rtr If IS ServiceSpecification (Sp)

Properties	Provisioned

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Description	This group contains provisionable attributes of the *IngressServices* component.
Mib	no_mib

ATTRIBUTE Rtr If IS discardPriorityMode (dpMode)

Access	Read and write
Description	This attribute specifies how drop precedence is assigned to IP traffic entering an interface. If this attribute is set to ***mapPhbToDp*** then drop precedence is assigned to IP traffic entering the interface as explained in the description of the *DifferentiatedServicesDomain* component. If this attribute is set to ***mapLayer2ToDp*** then the drop precedence assigned to IP traffic entering the interface is determined by the ingress Layer 2 media. For an IP packet arriving on *AtmMpe* the cell loss priority (CLP) bit in the ingress cell header is mapped to drop precedence value according to ATM traffic management provisioning. For an IP packet arriving on *FrDte or IpDlciGroup* the discard eligible (DE) bit in the ingress frame header is mapped to drop precedence value according to Frame Relay traffic management provisioning. For IP traffic arriving on other media ***high*** drop precedence is assigned. The *Rtr Interface IngressServices dpMode* and *Rtr Vrf Interface IngressServices dpMode* attributes must be set to ***mapPhbToDp***. The *IpPort IngressServices dpMode* attribute must be set to ***mapPhbToDp*** if the *linkToPolicerProfile* attribute is set or if the *IpPort* is associated with IP tunnel media. The *IpPort IngressServices dpMode* attribute has no effect if either of the following two conditions is true: 1) the *VirtualRouter* component does not have *DifferentiatedServicesDomain* subcomponent (see the description of the *CosPolicyGroup* component for more information about drop precedence in this case); 2) the IP packet leaves an interface where the *IpPort EgressServices linkToPolicerProfile* attribute is set (see the description of the *PolicerProfile Meter PolicedPhb outOfProfile* attribute for more information about drop precedence in this case).
Mib	no_mib
Values	mapPhbToDp mapLayer2ToDp
Default	mapPhbToDp

GROUP Rtr If IS InterfaceServices (IntServ)

Properties	Provisioned

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Description	This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..
Mib	no_mib

ATTRIBUTE Rtr If IS policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	no_mib
Values	off on
Default	off

COMPONENT Rtr If IS MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	GROUP Rtr If IS Meter Operational (Oper) GROUP Rtr If IS Meter Statistics (Stats)

COLLECTED STATS Router Interface IngressServices MeterStatistics

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/<string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent

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is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr If IS Meter Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MeterStatistics* component.

Mib: no_mib

ATTRIBUTE Rtr If IS Meter committedInformationRate (cir)

Access: Read only

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.

The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib: no_mib

Values: Decimal (0..600000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr If IS Meter excessInformationRate (eir)

Access: Read only

Description: This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Mib: no_mib

Values: Decimal (0..50000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr If IS Meter committedBurstSize (bc)

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Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..600000000)
Units	bits
Default	No default

ATTRIBUTE Rtr If IS Meter excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr If IS Meter measurmentInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Rtr If IS Meter status

Access	Read only
Description	This attribute indicates whether the meter is enabled or disabled at the interface where the policer is configured. The meter may be disabled if engineering limits for IP Policing on the FP are exceeded. Each policer assignment that involves a disabled meter should be removed.
Mib	no_mib

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Values	disabled enabled
Default	No default

GROUP Rtr If IS Meter Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	no_mib

ATTRIBUTE Rtr If IS Meter packetsReceived

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter octetsReceived

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter eirPacketsReceived (excessPackets)

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter eirOctetsReceived (excessOctets)

Access	Read only

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Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter **packetsRemarked**

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter **octetsRemarked**

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter **packetsDiscarded**

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter **octetsDiscarded**

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib

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Values	Long Integer
Default	No default
Default	COLLECTED STATS Router Interface IngressServices MeterStatistics
Description	The statistics record generated by the Router Interface IngressServices MeterStatistics component.

ATTRIBUTE Rtr If IS Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr If IS Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr If IS Meter excessBurstSize (be)

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter measurmentInterval (t)

Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Values	Decimal (0..4294967295)

ATTRIBUTE Rtr If IS Meter packetsReceived

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Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Rtr If IS Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Rtr If IS Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If IS Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If IS Meter packetsRemarked

Description This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If IS Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If IS Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If IS Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

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COMPONENT Rtr If EgressServices (ES)

Groups	GROUP Rtr If ES EgressServicesLinks (EsLinks) GROUP Rtr If ES InterfaceServices (IntServ)
Scope	Application
Description	*Vr/<string> Pp/<string> Ip EgressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> EgressServices* This component and its subcomponents represent various traffic management services applied to IP traffic leaving an interface.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr If ES MeterStatistics (Meter)
Common Verbs	Help List Display Add DELete

GROUP Rtr If ES EgressServicesLinks (EsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic leaving an interface.
Mib	no_mib

ATTRIBUTE Rtr If ES linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic leaving an interface.
Mib	no_mib
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Rtr If ES linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic leaving an interface.
Mib	no_mib
Values	Link (Service, linkToPolicerUsers)
Default	No default

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GROUP Rtr If ES InterfaceServices (IntServ)

Properties	Provisioned
Description	This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..
Mib	no_mib

ATTRIBUTE Rtr If ES policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	no_mib
Values	off on
Default	off

COMPONENT Rtr If ES MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	GROUP Rtr If ES Meter Operational (Oper) GROUP Rtr If ES Meter Statistics (Stats)

COLLECTED STATS Router Interface EgressServices MeterStatistics

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/<string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent

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is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr If ES Meter Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MeterStatistics* component.

Mib: no_mib

ATTRIBUTE Rtr If ES Meter committedInformationRate (cir)

Access: Read only

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.

The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib: no_mib

Values: Decimal (0..600000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr If ES Meter excessInformationRate (eir)

Access: Read only

Description: This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).

Mib: no_mib

Values: Decimal (0..50000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr If ES Meter committedBurstSize (bc)

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Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..600000000)
Units	bits
Default	No default

ATTRIBUTE Rtr If ES Meter **excessBurstSize (be)**

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr If ES Meter **measurmentInterval (t)**

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Rtr If ES Meter **status**

Access	Read only
Description	This attribute indicates whether the meter is enabled or disabled at the interface where the policer is configured. The meter may be disabled if engineering limits for IP Policing on the FP are exceeded. Each policer assignment that involves a disabled meter should be removed.
Mib	no_mib

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Values	disabled enabled
Default	No default

GROUP Rtr If ES Meter **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	no_mib

ATTRIBUTE Rtr If ES Meter **packetsReceived**

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter **octetsReceived**

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter **eirPacketsReceived (excessPackets)**

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter **eirOctetsReceived (excessOctets)**

Access	Read only

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Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter **packetsRemarked**

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter **octetsRemarked**

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter **packetsDiscarded**

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter **octetsDiscarded**

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib

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Values	Long Integer
Default	No default
Default	COLLECTED STATS Router Interface EgressServices MeterStatistics
Description	The statistics record generated by the Router Interface EgressServices MeterStatistics component.

ATTRIBUTE Rtr If ES Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr If ES Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Rtr If ES Meter excessBurstSize (be)

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter measurmentInterval (t)

Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Values	Decimal (0..4294967295)

ATTRIBUTE Rtr If ES Meter packetsReceived

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Description	This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter **octetsReceived**

Description	This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess
Values	Long Integer

ATTRIBUTE Rtr If ES Meter **eirPacketsReceived (excessPackets)**

Description	This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter **eirOctetsReceived (excessOctets)**

Description	This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter **packetsRemarked**

Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter **octetsRemarked**

Description	This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter **packetsDiscarded**

Description	This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter **octetsDiscarded**

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

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COMPONENT Rtr If RipInterface (RipIf)

Groups	GROUP Rtr If RipIf Provisioned (Prov) GROUP Rtr If RipIf Operational (Stat)
Scope	Application
Description	*Vr/<X> Pp/<X> IpPort LogicalIf/<Ip Address> RipInterface* *Rtr/<X> Interface/<X> RipInterface* *Rtr/<X> Vrf/<X> Interface/<X> RipInterface* This component is used to configure a *LogicalIf* or an *Interface* to run RIP protocol.
Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr If RipIf Neighbor (Nbr)
Common Verbs	Help List Display Add DELete

GROUP Rtr If RipIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *RipIf* component.
Mib	no_mib

ATTRIBUTE Rtr If RipIf snmpAdminStatus

Access	Read and write
Description	Identifies the administrative status of this *RipInterface*. Setting this value to ***disabled*** will have the effect of rendering it inactive.
Mib	no_mib
Values	up down
Default	up

ATTRIBUTE Rtr If RipIf metric

Access	Read and write
Description	This attribute is the RIP metric for this logical interface.
Mib	no_mib
Values	Decimal (1..16)
Default	1

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ATTRIBUTE Rtr If RipIf **poisonReverseFlag (poison)**

Access	Read and write
Description	If the value of this attribute is set to ***true***, then poison reverse algorithm is used when sending out the updates otherwise use split horizon only.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr If RipIf **flashUpdateFlag**

Access	Read and write
Description	This attribute when set to ***true*** will send updates when updates are received; otherwise RIP will wait till the next update period.
Mib	no_mib
Values	true false
Default	true

ATTRIBUTE Rtr If RipIf **networkRouteStatus**

Access	Read and write
Description	This attribute determines what type of network routes will be sent and whether a default route will be generated for this *RipInterface*. Generated default routes will not go into the routing table, but are sent in the updates going out on the interface. The possible values for this attribute are: ***naturalNetWithOutDefaultRoute*** - This value will cause normal RIP network routes to be put in the update. This means that the address of *logicalIf* or *Interface* pertaining to this *RipInterface* knowledge is taken into account in determining if the subnetted network or the natural network is sent for any route going into this update. ***naturalNetWithDefaultRoute*** - Selecting this value will cause a default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*. ***defaultRouteOnly*** - Selection of this value causes the default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*. NOTE: No other routes will go in the update. ***subnetsOnly*** - selection of this value will cause only subnet information to be put in the update. No default routes will be generated or passed on.

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	Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be put in the update. NOTE: this also effects receiving of updates on this interface. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be accepted on a received RIP update on this *RipInterface*.
Mib	no_mib
Values	naturalNetWithOutDefaultRoute (noDefault) naturalNetWithDefaultRoute (withDefault) defaultRouteOnly (defaultOnly) subnetsOnly (subnets)
Default	naturalNetWithOutDefaultRoute

ATTRIBUTE Rtr If RipIf defaultRouteMetric

Access	Read and write
Description	This attribute identifies the metric value for the default route. This value is only used if the attribute *networkRouteStatus* is configured with a value of either ***naturalNetWithDefaultRoute*** or ***defaultRouteOnly***
Mib	no_mib
Values	Decimal (1..16)
Default	1

ATTRIBUTE Rtr If RipIf acceptDefault

Access	Read and write
Description	If this attribute is set to true, then accept the default route from this interface.
Mib	no_mib
Values	true false
Default	true

ATTRIBUTE Rtr If RipIf ifConfSend

Access	Read and write
Description	This attribute identifies what the router sends on this *RipIf*. ***ripVersion1*** implies sending RIP updates compliant with RFC 1058. ***rip1Compatible*** implies broadcasting RIP-2 updates according to RFC 1058. ***ripVersion2*** implies multicasting RIP-2 updates.
Mib	no_mib
Values	doNotSend (silent) ripVersion1 (v1)

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	rip1Compatible (v2b) ripVersion2 (v2)
Default	rip1Compatible

ATTRIBUTE Rtr If RipIf **ifConfReceive**

Access	Read and write
Description	This attribute identifies which version of RIP updates are to be accepted on this *RipIf*. Note that ***rip2*** and ***rip1OrRip2*** implies reception of multicast packets.
Mib	no_mib
Values	rip1 (v1) rip2 (v2) rip1OrRip2 (both) doNotReceive (reject)
Default	rip1OrRip2

GROUP Rtr If RipIf **Operational (Stat)**

Properties	Operational
Description	This group contains operational attributes of the *RipIf* component. These attributes are statistical data corresponding to the RIP-2 standard MIB (rfc 1724) rip2Status table.
Mib	no_mib

ATTRIBUTE Rtr If RipIf **ifBadPacketRcv**

Access	Read only
Description	This attribute counts the number of RIP response packets recieved by the RIP process which were subsequently discarded for any reason.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If RipIf **ifBadRouteRcv**

Access	Read only
Description	This attribute counts how many routes, in valid RIP packets, were ignored for any reason.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If RipIf **ifTriggeredUpdates**

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Access	Read only
Description	This attribute counts the number of triggered updates actually sent on this interface. This explicitly does NOT include full updates sent containing new information.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr If RipIf Neighbor (Nbr)

Instance	IP address
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* This component is used to configure the Ip Address of the non broadcast multi access (NBMA) neighbor.
Mib	no_mib
Common Verbs	Help List Display Add DELete

COMPONENT Rtr If VrrpPort

Instance	Decimal (1..255)
Groups	GROUP Rtr If VrrpPort Provisioned (Prov) GROUP Rtr If VrrpPort Operational (Oper) GROUP Rtr If VrrpPort AdministrativeControl (AdminControl) GROUP Rtr If VrrpPort OperationalStatus (OperStatus) GROUP Rtr If VrrpPort OsiState (State)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort VrrpPort/<n>* *Rtr/<string> Vrf/<string> Interface VrrpPort/<n>* This component contains attributes that define a VRRP virtual router

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instance associated with this *IpPort*. The component instance (n) is the VRRP virtual router VRID.

Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If VrrpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the VrrpPort component.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort priority

Access	Read and write
Description	This attribute specifies the priority of *VrrpPort* during election of a master VRRP virtual router. A priority of 0 (zero) is reserved for the master to indicate it is releasing responsibility for the VRRP virtual router. A priority of 255 is reserved for the VRRP virtual router that owns (has as real interfaces) the IP addresses associated with this *VrrpPort*.
Mib	no_mib
Values	Decimal (1..255)
Default	100

ATTRIBUTE Rtr If VrrpPort advertisementInterval

Access	Read and write
Description	This attribute specifies the time interval between VRRP advertisements which will be sent by the master VRRP virtual router.
Mib	no_mib
Values	Decimal (1..255)
Units	seconds
Default	1

ATTRIBUTE Rtr If VrrpPort listLinkToCriticalIp (listLinkToCIp)

Access	Read and write

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Description	This attribute specifies the *CriticalIp* instance to which the *VrrpPort* instance is linked. If the *IpPort* associated with this *CriticalIp* instance becomes disabled, the *VrrpPort* becomes disabled..
Mib	no_mib
Values	Link (Service, listLinkToVrrp)
Default	No default

ATTRIBUTE Rtr If VrrpPort **holdDownTime (hdt)**

Access	Read and write
Description	This attribute specifies the length of time that a VrrpPort instance is prevented from participating in a VRRP Master virtual router election, if it has given up Mastership due to a failure, once the failure has been corrected. This allows the network routing protocol to re-establish a route to this VrrpPort instance when it becomes available. When the length of the holdDownTime is reached, a VRRP Master virtual router election occurs and the highest priority VrrpPort instance will become the VRRP Master virtual router. A holdDownTime attribute value of notApplicable disables the holdDownTime functionality. Any other value should be calculated based on an estimate of the time requiredfor the network routing protocol to establish a route to a VrrpPort instance, that has been disabled by a failure, once it has recovered. If the new VRRP Master virtual router fails within the holdDownTime interval and no other VRRP Backup virtual router is available, the holdDownTime functionality is canceled and the highest priority VrrpPort instance will become the VRRP Master virtual router. In a situation where both the VRRP Master and Backup virtual routers are on the same MSS, and both are affected by the same failure, the holdDownTime functionality doesn't add any value since the network routes to both VrrpPort instances are affected.
Mib	no_mib
Values	Decimal (1..3600) notApplicable (na)
Units	seconds
Default	notApplicable

ATTRIBUTE Rtr If VrrpPort **ipAddresses**

Access	Read and write
Description	This attribute specifies one or more IP addresses associated with this *VrrpPort* instance (VRID). All VRRP virtual routers with this VRID must have the same set of IP addresses configured. Each of the IP addresses

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	in the list must be on the same subnet as an *IpLogicalInterface* for the *IpPort*. All the IP addresses in the list must be owned by this VRRP virtual router or by other VRRP virtual routers but not a combination.
Mib	no_mib
List of	IP address
Default	No default

GROUP Rtr If VrrpPort Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *VrrpPort* component.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort virtualRouterState

Access	Read only
Description	This attribute indicates the state of this *VrrpPort* instance. It will be one of three states: initialize, backup and master.
Mib	no_mib
Values	initialize backup master
Default	initialize

ATTRIBUTE Rtr If VrrpPort virtualRouterPhysicalAddress

Access	Read only
Description	This attributes indicates the physcial address of the *VrrpPort*. The address is a virtual physical address of the form “00-00-5e-00-01-VRID” where the VRID is the instance value of the *VrrpPort*.
Mib	no_mib
Values	String (6, Dashed Hex)
Default	No default

GROUP Rtr If VrrpPort AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort snmpAdminStatus

Access	Read and write

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Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr If VrrpPort **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr If VrrpPort **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort **adminState (osiAdmin)**

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If VrrpPort **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If VrrpPort **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib no_mib

Values
idle
active (activ)
busy

Default idle

COMPONENT Rtr If Loopback (Lb)

Groups
GROUP Rtr If Lb IfEntryProv (IfEntry)
GROUP Rtr If Lb Provisioned (Prov)
GROUP Rtr If Lb OsiState (State)
GROUP Rtr If Lb OperationalStatus (OperStatus)

Scope Application

Description
Rtr/<string> Interface/<string> Loopback
Rtr/<string> Vrf/<string> Interface/<string> Loopback
The *Loopback* component represents an instance of a logical media. *Loopback* provides IP connectivity between routers on the same module, and supports an 'always-up IP interface' concept; i.e interface stays up unless it is administratively disabled or the hardware goes down.

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr If Lb IfEntryProv (IfEntry)

Properties Provisioned

Description This group contains the provisionable attributes for the ifEntry.

Mib no_mib

ATTRIBUTE Rtr If Lb ifAdminStatus (ifState)

Access Read and write

Description The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib no_mib

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Values	up down testing
Default	up

ATTRIBUTE Rtr If Lb ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr If Lb Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Loopback* component.
Mib	no_mib

ATTRIBUTE Rtr If Lb mode

Access	Read and write
Criticality	Component
Description	This attribute specifies the mode of operation of the *Loopback*. The following modes are supported: ***alwaysUpInterface***, and ***primaryLoopback***. ***alwaysUpInterface***: This mode limits the *Loopback* to provide the functionality of an 'always up interface' only. Inter router communication is not possible when this mode is selected. Memory consumption by the *Loopback If* is significantly less on the FP when this mode is selected. Hence this mode should be used when the sole purpose of the *Loopback If* is to provide an always up interface for an application like BGP4. ***primaryLoopback***: Only supported under *Router*; a router can have only one Interface which has a *Loopback* component with mode primaryLoopback.
Mib	no_mib
Values	alwaysUpInterface primaryLoopback

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Default	alwaysUpInterface

GROUP Rtr If Lb OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If Lb adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If Lb operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib no_mib

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Rtr If Lb usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib no_mib

Values idle
active (activ)
busy

Default idle

GROUP Rtr If Lb OperationalStatus (OperStatus)

Properties Operational

Description This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib no_mib

ATTRIBUTE Rtr If Lb snmpOperStatus

Access Read only

Description The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib no_mib

Values up
down
testing

Default up

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COMPONENT Rtr If RsvpTeIf

Groups	GROUP Rtr If RsvpTeIf Provisioned (Prov) GROUP Rtr If RsvpTeIf OsiState (State) GROUP Rtr If RsvpTeIf Operational (Op) GROUP Rtr If RsvpTeIf InboundStatistics (InStats) GROUP Rtr If RsvpTeIf OutboundStatistics (OutStats)
Scope	Application
Description	*Rtr/<s> Interface/<IP Address> RsvpTeIf* This component represents an instance of the RSVP-TE protocol running over the interface.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If RsvpTeIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes for MPLS RSVP-TE configurable capability on a per interface basis.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTeIf adminStatus (status)

Access	Read: All Write: All
Description	This attribute specifies the administrative status of this RSVP-TE interface. It is used to maintain the admin state over FP and nodal restarts.
Mib	no_mib
Values	null enabled disabled testing
Default	enabled

ATTRIBUTE Rtr If RsvpTeIf reservableFactor (resFactor)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the percentage of media bandwidth available for LSP Tunnel reservations over this interface. A value of 0 prevents any bandwidth allocation for LSPs. A value of 100 allows RSVP-TE exclusive use of available bandwidth. Intermediate values allow distribution of bandwidth amongst RSVP-TE and other applications.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	50

ATTRIBUTE Rtr If RsvpTelf overbookingFactor (overBook)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the percentage of the total bandwidth pool that is not sharable between LSP connections. The percentage ranges from 0% to 1000%. This allows for both under and over subscription of the bandwidth. A value of 100 results in absolute allocations--signaled bandwidth is exactly that allocated. A value < 100 allows under subscription of the link. A value > 100 allows over subscription of the link.
Mib	no_mib
Values	Decimal (0..1000)
Units	%
Default	100

ATTRIBUTE Rtr If RsvpTelf mediaCapacity (mediaCap)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the capacity in kbits/sec of the underlying media link for the interface. For GigE links, the default can be retained. For ATM links, this attribute should be set to the sum of the bandwidth provisioned for the underlying VCC(s) linked to the associated *Rtr/<s> Interface/<IP Address> AtmMpe*.

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Mib	no_mib
Values	Decimal (0..4294967295)
Units	kbit/s
Default	860000

ATTRIBUTE Rtr If RsvpTelf refreshInterval (rInt)

Access	Read: All Write: All
Description	This attribute specifies the interval between refresh messages sent by this LSR on this interface. This value is sent in the TIME_VALUES object of the PATH/RESV message to the next hop and is used in calculation of the lifetime of the PATH/RESV state block at the next hop. Setting this value will override the *refreshInterval* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..1800) sameAsRsvpTe
Units	seconds
Default	sameAsRsvpTe

ATTRIBUTE Rtr If RsvpTelf refreshKeepMultiplier (rKeep)

Access	Read: All Write: All
Description	This attribute specifies the default minimum number of refresh intervals that must pass before a PATH or a RESV state which is not being refreshed is aged out. This value is used in calculating the lifetime of the Path State Blocks (PSB) and Reservation State Blocks (RSB) for this interface; it prevents premature loss of these states. Setting this value will override the *refreshKeepMultiplier* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..50) sameAsRsvpTe
Default	sameAsRsvpTe

ATTRIBUTE Rtr If RsvpTelf slewMax (slew)

Access	Read: All Write: All

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Description	This value specifies the rate at which an increase in the *refreshInterval* is introduced on the LSR. When a new *refreshInterval* value is provisioned to a higher value, the refresh interval is increased at *slewMax* percentage of the previous interval at each PATH/RESV cycle. In another words, the ratio of two successive refresh interval values do not exceed 1 + (Slew Max/100). Setting this value will override the *slewMax* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..200) sameAsRsvpTe
Units	%
Default	sameAsRsvpTe

ATTRIBUTE Rtr If RsvpTeIf helloInterval (hInt)

Access	Read: All Write: All
Description	This attribute specifies the interval between HELLO messages sent by this LSR on this interface. A value of ***disabled*** indicates that the Hello mechanism is not enabled. Setting this value will override the *helloInterval* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (0.1..100.0) disabled sameAsRsvpTe
Units	seconds
Default	sameAsRsvpTe

ATTRIBUTE Rtr If RsvpTeIf helloMultiplier (hMult)

Access	Read: All Write: All
Description	This attribute specifies the minimum number of HELLO intervals that must pass before the RSVP-TE connection is considered down. Setting this value will override the *helloMultiple* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 5.5; 6.0; 6.5; 7.0; 7.5; 8.0; 8.5; 9.0; 9.5; 10.0) sameAsRsvpTe
Default	sameAsRsvpTe

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GROUP Rtr If RsvpTelf **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTelf **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If RsvpTelf **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If RsvpTelf **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If RsvpTelf **Operational (Op)**

Properties	Operational
Description	This group contains the attributes that comprise the control statistics collected by the *RsvpTelf* component.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTelf **bandwidthTotal (bwTot)**

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth pool size for this component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If RsvpTelf **admittedBandwidth (admBw)**

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth currently reserved for LSP connections.

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Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If RsvpTelf availableBandwidth (availBw)

Access	Read: All Write: Illegal
Description	This attribute indicates the remaining reservable bandwidth.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If RsvpTelf helloState (hState)

Access	Read: All Write: Illegal
Description	This attribute indicates if a hello adjacency is being maintained with the RSVP-TE neighbor for this interface.
Mib	no_mib
Values	disabled (dis) down up
Default	No default

GROUP Rtr If RsvpTelf InboundStatistics (InStats)

Properties	Operational
Description	This group contains the attributes that comprise the incoming datapath statistics collected by this component.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTelf inFrames

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frames received for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

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ATTRIBUTE Rtr If RsvpTelf inOctets

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of octets received for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If RsvpTelf inFrameDiscards (inDisc)

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frame discards received and discarded for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr If RsvpTelf OutboundStatistics (OutStats)

Properties	Operational
Description	This group contains the attributes that comprise the outgoing datapath statistics collected by this component.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTelf outFrames

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frames sent for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If RsvpTelf outOctets

Access	Read: All Write: Illegal

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Description	This attribute indicates the accumulated number of octets sent for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If RsvpTeIf outFrameDiscards (outDisc)

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frame discards sent and discarded for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr If LabelDistributionProtocolIf (LdpIf)

Groups	GROUP Rtr If LdpIf Provisioned (Prov) GROUP Rtr If LdpIf OsiState (State) GROUP Rtr If LdpIf InStatistics (InStats) GROUP Rtr If LdpIf OutStatistics (OutStats)
Scope	Application
Description	*Rtr/<s> If/<s> LdpIf* This component represents the fact that the Label Distribution Protocol is to run over the associated interface. A provisioning check is made to ensure that a *Rtr Ldp* component exists.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If LdpIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes for configuring LDP use over the interface.

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Mib	no_mib

ATTRIBUTE Rtr If LdpIf adminStatus (admin)

Access	Read: All Write: All
Description	This attribute specifies the administrative status of this LDP Interface. It is used to maintain “locks” and “unlocks” over FP and nodal restarts.
Mib	no_mib
Values	null enabled disabled testing
Default	enabled

GROUP Rtr If LdpIf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If LdpIf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If LdpIf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If LdpIf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If LdpIf InStatistics (InStats)

Properties	Operational
Description	This group contains the operational statistics for incoming traffic of the *InwRtrLdpIf* component on the ingress side of a tandem or destination switch.

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Mib	no_mib

ATTRIBUTE Rtr If LdpIf inOctets

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If LdpIf inFrames

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If LdpIf inFramesDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames received but discarded from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr If LdpIf OutStatistics (OutStats)

Properties	Operational
Description	This group contains the operational statistics for outgoing traffic of *InwRtrLdpIf* component on the egress side of an originating or tandem switch.
Mib	no_mib

ATTRIBUTE Rtr If LdpIf outOctets

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Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted for originating or outgoing transit MPLS data. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If LdpIf outFrames

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for originating or outgoing transit MPLS data. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If LdpIf outFramesDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted that were discarded. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr If IpoDlci

Groups	GROUP Rtr If IpoDlci CustomerIdentifierData (CidData) GROUP Rtr If IpoDlci IfEntryProv (IfEntry) GROUP Rtr If IpoDlci Provisioned (Prov) GROUP Rtr If IpoDlci OsiState (State) GROUP Rtr If IpoDlci OperationalStatus (OperStatus)
Scope	Application
Description	*IpoDlci* This component represents a logical interface between a *Router Vrf Interface* and a *FrameRelay* Interface (*FrUni*). An *IpoDlci* associates multiple frame relay *DataLinkConnectionIdentifers*

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(Dlci) with a single *Router Vrf Interface*. The *IpoDlci* component is associated with a frame relay Dlcis using the *linkToFrDlci* attribute in each *FrConnection* subcomponent.

Mib no_mib

Subcomponents COMPONENT Rtr If IpoDlci FrConnection (Frc)

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr If IpoDlci CustomerIdentifierData (CidData)

Properties Provisioned

Description This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib no_mib

ATTRIBUTE Rtr If IpoDlci customerIdentifier (cid)

Access Read and write

Description This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib no_mib

Values Decimal (0; 1..8191)

Default 0

GROUP Rtr If IpoDlci IfEntryProv (IfEntry)

Properties Provisioned

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Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr If IpoDlci ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr If IpoDlci Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *IpDlciGroup* component.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci maxTransmissionUnit (mtuSize)

Access	Read and write
Description	This attribute specifies the size of the largest datagram (including the frame relay header) which can be sent on the interface.
Mib	no_mib
Values	Decimal (262..9190)
Units	octets
Default	1604

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GROUP Rtr If IpoDlci **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If IpoDlci **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If IpoDlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If IpoDlci OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

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COMPONENT Rtr If IpoDlci FrConnection (Frc)

Instance	Decimal (1..255)
Groups	GROUP Rtr If IpoDlci Frc Provisioned (Prov) GROUP Rtr If IpoDlci Frc OsiState (State) GROUP Rtr If IpoDlci Frc Statistics (Stats)
Scope	Application
Description	*IpDlciGrp/n FrConnection/n* This component represents a virtual connection over which internetworking frames are relayed between IP and frame relay.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If IpoDlci Frc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *FrConnection* component.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci Frc linkToFrDlci (frDlci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the frame relay *Dlci IpConn* component that this connection is associated with.
Mib	no_mib
Values	Link (Hardware, linkToIpDlciGrp)
Default	No default

ATTRIBUTE Rtr If IpoDlci Frc ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers.

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If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet.

DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component.
Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *FrConnection*.

If the *FrConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	no_mib
Values	Decimal (0..3)
Default	0

ATTRIBUTE Rtr If IpoDlci Frc **linkToIpLogicalInterface (ipIf)**

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ ipAddress*, that this connection is associated with. When set, the value of this attribute must be consistent with the *linkToProtocolPort* attribute value of the parent *IpDlciGroup* component. That is, they must both point to the same *ProtocolPort* component.
Mib	no_mib
Values	Link (Service, linkToMediaConnection)
Default	No default

GROUP Rtr If IpoDlci Frc **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

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ATTRIBUTE Rtr If IpoDlci Frc **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If IpoDlci Frc **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If IpoDlci Frc **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib no_mib

Values idle
active (activ)
busy

Default idle

GROUP Rtr If IpoDlci Frc Statistics (Stats)

Properties Operational

Description This group contains the packet based statistics maintained for the *FrConnection* component.

Mib no_mib

ATTRIBUTE Rtr If IpoDlci Frc inUnknownProtocol

Access Read only

Description This attribute counts the packets received on this connection which are discarded because they contain an unknown protocol. This counter wraps around to ***0*** when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Rtr If IpoDlci Frc inUnsupportedProtocol

Access Read only

Description This attribute counts the packets received on this connection which are discarded because they contain an unsupported protocol. This includes packets received for protocols not currently bound to the associated *ProtocolPort* component. This counter wraps around to ***0*** when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Rtr If IpoDlci Frc inLastDiscardedProtocolHeader

Access Read only

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Description	This attribute indicates the first eight octets of the most recent packet that was received from the interface with an unknown or unsupported protocol.
Mib	no_mib
Values	String (1..8, Hex)
Default	No default

COMPONENT Rtr If EnetApplication (Enet)

Groups	GROUP Rtr If Enet Provisioned (Prov) GROUP Rtr If Enet Provisioned (Prov) GROUP Rtr If Enet Operational (Oper)
Scope	Application
Description	*EnetApplication* The *EnetApplication* component is used to provide the interface between the *Interface* component and a LAN component such as *Ethernet*.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains the link to the *EnetIf* application
Mib	no_mib

ATTRIBUTE Rtr If Enet linkToEnetIf (enetIf)

Access	Read: All Write: All
Criticality	Component
Description	This attribute associates a *EnetIf* application with a *Interface* component.
Mib	no_mib
Values	Link (Service, enetConnection)
Default	No default

GROUP Rtr If Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for *Enet*Application.

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Mib	no_mib

ATTRIBUTE Rtr If Enet **encap**

Access	Read: All Write: All
Description	This attribute indicates the encapsulation type to be used when sending packets out the corresponding *Interface*. The the default encapsulation is ethernet.
Mib	no_mib
Values	ieee8023 ethernet
Default	ethernet

GROUP Rtr If Enet **Operational (Oper)**

Properties	Operational
Description	This group contains operational attributes for *EnetApplication.*
Mib	no_mib

ATTRIBUTE Rtr If Enet **operEncap**

Access	Read only
Description	This attribute indicates the current operational encapsulation type.
Mib	no_mib
Values	ieee8023 ethernet
Default	ethernet

COMPONENT Rtr If **MplsBgpInterface (MplsBgpIf)**

Groups	GROUP Rtr If MplsBgpIf InStatistics (InStats) GROUP Rtr If MplsBgpIf OutStatistics (OutStats)
Scope	Application
Description	*Rtr/<s> If/<s> MplsBgpIf* This component represents the interface that BGP uses to carry MPLS label information.

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There is a maximum of one *MplsBgpIf* component under each *Interface* component.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr If MplsBgpIf InStatistics (InStats)

Properties: Operational

Description: This group contains the operational statistics for incoming labelled MPLS data traffic of the *MplsBgpIf* component on the ingress side of a tandem or destination switch.

Mib: no_mib

ATTRIBUTE Rtr If MplsBgpIf inOctets

Access: Read: All
Write: Illegal

Description: This attribute counts the octets received from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.

Mib: no_mib

Values: Long Integer

Default: No default

ATTRIBUTE Rtr If MplsBgpIf inFrames

Access: Read: All
Write: Illegal

Description: This attribute counts the frames received from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.

Mib: no_mib

Values: Long Integer

Default: No default

ATTRIBUTE Rtr If MplsBgpIf inFrameDiscards

Access: Read: All
Write: Illegal

Description: This attribute counts the frames received but discarded from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.

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Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr If MplsBgpIf **OutStatistics (OutStats)**

Properties	Operational
Description	This group contains the operational statistcs for outgoing labelled MPLS data traffic of the *MplsBgpIf* component on the egress side of an originating or tandem switch.
Mib	no_mib

ATTRIBUTE Rtr If MplsBgpIf **outOctets**

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted for originating or outgoing transit labelled MPLS data traffic. The counter wraps to zero when is maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If MplsBgpIf **outFrames**

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for originating or outgoing transit labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If MplsBgpIf **outFramesDiscards**

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for labelled MPLS data traffic that were discarded. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer

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Default	No default

COMPONENT Rtr If PppApplication (Ppp)

Groups	GROUP Rtr If Ppp Provisioned (Prov)
Scope	Application
Description	*Rtr/n Vrf/y If/x.x.x.x PppApplication* This component provides a *PppApplication* component name that is used as an interface to the network.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If Ppp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *PppApplication* component.
Mib	no_mib

ATTRIBUTE Rtr If Ppp linkToMedia (media)

Access	Read and write
Criticality	Component
Description	This attribute contains a *Ppp* link level protocol component name. The attribute associates the *PppApplication* component with a *Ppp* link level protocol component.
Mib	no_mib
Values	Link (Service, linkToApplication)
Default	No default

COMPONENT Rtr MultiprotocolLabelSwitching (Mpls)

Groups	GROUP Rtr Mpls Provisioned (Prov) GROUP Rtr Mpls Operational (Oper) GROUP Rtr Mpls FecAlarm
Scope	Application
Description	*Rtr/<s> MultiprotocolLabelSwitching* This component and its subcomponents define a router capable of supporting Multiprotocol Label Switching (MPLS) origination of provisioned Label Switched Paths (LSPs). The switch is referred to as a Label

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Switching Router (LSR).

This component specifies that--if one or more LSPs requested by the RFC2547 application are down--one alarm will be generated indicating that at least one LSP has gone down. The number of LSPs that are down is indicated by the attribute *unreachableAppFecCount*. This alarm will only be cleared when all LSPs requested by the RFC2547 application come back up. Deleting this component from provision will result in the set alarm being cleared even when not all LSPs have come back up.

Mib: no_mib

Opt. Subcomp.: COMPONENT Rtr Mpls Path
COMPONENT Rtr Mpls LabelSwitchedPath (Lsp)

Common Verbs: Help, List, Display, Add, DELete

GROUP Rtr Mpls Provisioned (Prov)

Properties: Provisioned

Description: This group contains generic provisionable attributes for MPLS.

Mib: no_mib

ATTRIBUTE Rtr Mpls mplsRoutePreference (mplsRtePref)

Access: Read and write

Description: This attribute specifies the route preference of all *Rtr/<s> Mpls Lsp/n*. It is used by IP RTM to select the most preferred route from multiple available routes discovered by different protocols such as OSPF, RIP, BGP, and MPLS. More specifically, when an incoming IP packet has more than one best-destAddress-match routes (provided by different protocols) in the IP RTM, the route with higher preference (smaller route preference value) wins.

Mib: no_mib

Values: Decimal (1..63)

Default: 10

GROUP Rtr Mpls Operational (Oper)

Properties: Operational

Description: This group contains operational attributes for MPLS.

Mib: no_mib

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ATTRIBUTE Rtr Mpls lsrId

Access	Read only
Description	This attribute indicates the IP address for this Label Switch Router (LSR).
Mib	no_mib
Values	IP address
Default	No default

GROUP Rtr Mpls FecAlarm

Properties	Operational
Description	This group contains operational attributes to indicate those FECs that are not reachable but are requested by the RFC 2547 application.
Mib	no_mib

ATTRIBUTE Rtr Mpls unreachableAppFecCount

Access	Read only
Description	This attribute indicates the number of FECs that are not reachable but are requested by the RFC 2547 application.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Mpls unreachableFec

Access	Read only
Description	This attribute indicates at most the first 25 FECs that are not reachable but are requested by the RFC 2547 application.
Mib	no_mib
List of	IP address
List Size	25
Default	No default

COMPONENT Rtr Mpls Path

Instance	Decimal (1..10000)
Scope	Application
Description	*Rtr/<s> Mpls Path/n* This component represents a list of hops that specifies a route to be taken by the Label Switched Path. The instance values for this list of hops specifies the hop sequence for the path. This can be a partial path.

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A *Path* component must have at least one *Hop* subcomponent provisioned.

The maximum total number of *Path* components allowed per *Mpls* component is 4000.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Mpls Path Hop
Common Verbs	Help List Display Add DELete

COMPONENT Rtr Mpls Path Hop

Instance	Decimal (1..50)
Groups	GROUP Rtr Mpls Path Hop Provisioned (Prov)
Scope	Application
Description	*Rtr/<s> Mpls Path/m Hop/n* This component is used to define a specific hop in a *Path*. The order of these components within a Path component instance is the order which is used to set up the path. The *ipv4address* attribute of a *Hop* component must be a valid class A, B or C non-reserved address. The maximum number of hops per path is 20.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Mpls Path Hop Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for *Rtr/<s> Mpls Path/m Hop/n* component. The *Hop* component can be provisioned as strict or loose. A Hop must be an Ipv4 address.
Mib	no_mib

ATTRIBUTE Rtr Mpls Path Hop ipv4Address (address)

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Access	Read and write
Description	This attribute specifies the Ipv4 address of this *Hop* component. It must be a valid class A, B or C non-reserved address.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Mpls Path Hop ipv4PrefixLen (prefix)

Access	Read and write
Description	This attribute specifies the prefix length of the Ipv4 address for this *Hop* component. If the length is 32, then the Ipv4 address is treated as a host address, otherwise it is treated as a network prefix.
Mib	no_mib
Values	Decimal (8..32)
Default	No default

ATTRIBUTE Rtr Mpls Path Hop hopMode (mode)

Access	Read and write
Description	This attribute specifies if the *Hop* component is treated as strict or loose. The value ***strict*** means that the address specified in the *Ipv4Address* attribute of this *Hop* component must be adjacent to the node on which Ipv4Address of the previous *Hop* component resides. For a single strict hop, the originating node must be adjacent to the Ipv4 address specified in the *Ipv4Address* attribute of the *Hop* component. The value ***loose*** means that *Ipv4Address* attribute of this hop is not necessarily adjacent to the previous hop. The LSR should determine a next hop which is in the same direction as the specified hop.
Mib	no_mib
Values	strict loose
Default	strict

COMPONENT Rtr Mpls LabelSwitchedPath (Lsp)

Instance	Decimal (1..65535)
Groups	GROUP Rtr Mpls Lsp Provisioned (Prov) GROUP Rtr Mpls Lsp OsiState (State) GROUP Rtr Mpls Lsp Operational (Oper)
Scope	Application
Description	*Rtr/<s> Mpls LabelSwitchedPath/n* This component represents a Label Switched Path (LSP) that originates

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from this Label Switching Router (LSR).
When a *Rtr/<s> Mpls Lsp/n IpV4RA/<IP Address>,<IP Prefix Length>* component is provisioned under the LSP, it will act as the Forwarding Equivalency Class (FEC) and must be inherited by the standby LSPs from the primary LSP.

Mib	no_mib
Opt. Subcomp.	COMPONENT Rtr Mpls Lsp IpV4ReachableAddr (RAddr)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Mpls Lsp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the configurable parameters for the *LSP* component.
Mib	no_mib

ATTRIBUTE Rtr Mpls Lsp ipv4EndPointAddress (epa)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Ipv4 End Point Address for the LSP. For standby LSPs, a value of ***0.0.0.0*** specifies that the value should inherit from the *ipv4EndPointAddress* attribute of the primary LSP. If the *addToIpRoutingDatabase* attribute is set to ***enabled***, then this endpoint address is installed into the IP routing table as a Forwarding Equivalency Class (FEC).
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Mpls Lsp bandwidth (bw)

Access	Read and write
Criticality	Component
Description	This attribute specifies the requested bandwidth for the LSP. This attribute can have a numeric value between ***0*** and ***4294967293*** (2^32 - 2), ***nsNoBandwidth (nsNoBw)***, ***clsNoBandwidth (clsNoBw)*** or ***sameAsPrimaryLsp*** (***sameAsPLsp***).

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If a numeric value is specified, then the value is signaled as the peak and sustained data rate in Kbit/sec as part of the label request and used in the bandwidth reservation.

If ***nsNoBandwidth*** is used, then the Integrated Services (IntServ) Null Service (NS) type is signaled for the LSP setup, and no bandwidth is reserved.

If ***clsNoBandwidth*** is used, then the IntServ Controlled Load Service (CLS) type is signaled for the LSP setup with the peak and sustained rate as 0 and no bandwidth is reserved.

If this LSP is configured to be the standby LSP, then the value ***sameAsPrimaryLsp*** specifies that this LSP will inherit the value of the *bandwidth* attribute from the primary LSP.

The value ***sameAsPrimaryLsp*** is not valid when this LSP is configured to be the primary LSP.

The default value is ***1***.

Mib	no_mib
Values	Decimal (1..4294967292) nsNoBandwidth (nsNoBw) clsNoBandwidth (clsNoBw) sameAsPrimaryLsp (sameAsPLsp)
Units	kbit/s
Default	1

ATTRIBUTE Rtr Mpls Lsp primaryLsp (pLsp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the instance number of the *Lsp* component that is assigned as primary LSP for a single FEC.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Mpls Lsp pathName

Access	Read and write
Criticality	Component
Description	This attribute specifies the path *Rtr/<s> Mpls Path/n* to be used by this LSP. The *pathName* attribute must point to a valid *Path*.

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If no path name is specified, then the *ipv4EndPointAddress* attribute value is used as a loose path.

Mib: no_mib

Values: The name of the component

Default: No default

ATTRIBUTE Rtr Mpls Lsp alarmControl

Access: Read and write

Description: This attribute specifies the control of the generation of alarms for this LSP. If the value is ***none***, no alarms are generated. If the value is ***major*** or ***critical***, the alarms are generated with the specified severity on events affecting the LSP status. If the value is ***sameAsPrimaryLsp***, then this LSP will inherit the value of the *alarmControl* attribute for the primary LSP. The primary LSP cannot have a value of ***sameAsPrimaryLsp***.

Mib: no_mib

Values:
none
critical (crit)
major (maj)
sameAsPrimaryLsp (sameAsPLsp)

Default: none

ATTRIBUTE Rtr Mpls Lsp addToIpRoutingDatabase (addToIpRdb)

Access: Read and write

Description: This attribute specifies whether or not this LSP should be installed into the IP Routing Database.

To carry native IP traffic over the LSP on establishment, this attribute must be set to ***true***.

Standby LSPs inherit the primary value and so this attribute must be set to ***sameAsPrimaryLsp***.

The default value is ***true***.

Mib: no_mib

Values:
false
true
sameAsPrimaryLsp (sameAsPLsp)

Default: true

ATTRIBUTE Rtr Mpls Lsp bestMatchOverride

Access: Read and write

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Description	This attribute specifies if an MPLS LSP should subsume more specific routes to carry IP traffic. What IP normally does when making next-hop route decision for incoming IP packets is to find the longest match on destination address in the routing table and use such a route. If multiple routes (from different protocols) are found to have same best destination address match, other criteria (such as route preference, metric) are used for further selection. The best-match on destination address is the most important factor in traditional IP route selection. On the Nortel Networks Multiservice Switch, the *bestMatchOverride* attribute allows network operators to override this IP tradition by enabling MPLS forced subsume functionality. In many situations, using subsume can help to achieve better traffic engineering goals. Setting this attribute to ***true*** instructs IP to select this MPLS LSP to forward IP packets that matches the FEC of the LSP, even though other routes have a better or longer destination address match for these IP packets. The value ***false*** is used when traditional IP route selection behavior (longest address match first) is chosen. For example, say OSPF has different routes to 2 sets of destinations (100.200.100.0/24 and 100.200.200.0/24). Then, an LSP is setup with FEC (reachable address) 100.200.0.0/16. If we set this attribute to ***false***, IP traffic for destination 100.200.100.xxx and 100.200.200.xxx will take the corresponding OSPF routes due to better address match than the MPLS LSP. However, if the value of this attribute is ***true***, all IP traffic for destination 100.200.xxx.xxx (including 100.200.100.xxx and 100.200.200.xxx) will take the MPLS LSP. In such a situation, the two OSPF routes have been subsumed by the more generic route - MPLS LSP and the IP best-match rule has been overridden. This attribute is only used when the *addToIPRoutingDatabase* attribute is set to ***true*** and the RA is used as the FEC Standby LSPs will inherit the value of the primary LSP and so this attribute must be set to sameAsPrimaryLsp. The default value is ***true***.
Mib	no_mib
Values	false true sameAsPrimaryLsp (sameAsPLsp)
Default	true

ATTRIBUTE Rtr Mpls Lsp signalingProtocol

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Access	Read and write
Description	The MPLS signaling protocol used to setup the LSP. Currently the only valid value is ***rsvpTe***.
Mib	no_mib
Values	rsvpTe
Default	rsvpTe

ATTRIBUTE Rtr Mpls Lsp standbyLsp (sLsp)

Access	Read and write
Description	This attribute specifies the ordered list of the *Lsp* component instance(s) assigned as standby to this primary LSP. The first *Lsp* component instance in the list becomes operational if the primary LSP fails, the second Lsp component instance in the list becomes operational if the primary and first standby fail, and so on. For a standby LSP, this attribute should be left as an empty list. The default is an empty list.
Mib	no_mib
List of	Decimal (0..65535)
List Size	7
Default	No default

GROUP Rtr Mpls Lsp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Mpls Lsp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Mpls Lsp operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Mpls Lsp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

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Values	idle active (activ) busy
Default	idle

GROUP Rtr Mpls Lsp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of this MPLS LSP.
Mib	no_mib

ATTRIBUTE Rtr Mpls Lsp status

Access	Read only
Description	This attribute indicates the status of an LSP. In the description that follows, "upstream" refers to a peer LSR from which an label request message is received and from which traffic is received. "Downstream" refers to a peer LSR to which traffic will be sent from this LSR. A value of ***idle*** indicates that the LSR has not set up the LSP. A value of ***responseAwaited*** indicates that the LSR has received and processed a label request message from an upstream LSR or it has received an internal setup request. It has sent a new label request message towards a downstream LSR. The LSR is waiting for the label mapping message from the downstream LSR. A value of ***established*** indicates that the LSR has received the label mapping message from the downstream LSR and the LSP is up and operational.
Mib	no_mib
Values	idle responseAwaited established
Default	No default

ATTRIBUTE Rtr Mpls Lsp retryCount (rCount)

Access	Read only
Description	This attribute counts the attempts to set up this LSP. This counter wraps around to zero when the maximum value is exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Mpls Lsp failureCount (fCount)

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Access	Read only
Description	This attribute counts the times this LSP fails to establish. This counter wraps around to zero when the maximum value is exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Mpls Lsp lastTearDownReason (tearDown)

Access	Read only
Description	This attribute indicates why this LSP was torn down.
Mib	no_mib
Values	notApplicable rsvpRoutingProblem rsvpPathSetupTimeout rsvpLocked rsvpLostPeer rsvpLostLabel rsvpResourceUnavailable rsvpSystemError rsvpAdminCtrl rsvpRcvResvTear rsvpRcvUnsupportedStyle rsvpRcvConflictingStyle rsvpRcvErrNotify rsvpRcvErrRsvpSystem rsvpRcvErrTrafficCtrl rsvpRcvErrTrafficCtrlSys rsvpRcvErrUnknownObjClass rsvpRcvErrUnknownObjCType rsvpRcvErrAdminCtrl rsvpRcvErrPolicyCtrl rsvpRcvErrDestPortConflict rsvpRcvErrSendPortConflict rsvpRcvErrApi rsvpRcvErrRoutingProblem
Default	No default

ATTRIBUTE Rtr Mpls Lsp establishedTimeStamp (estTS)

Access	Read only
Description	This attribute indicates the time when this LSP was established.
Mib	no_mib
Values	Time (DHMS)

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Default	No default

ATTRIBUTE Rtr Mpls Lsp maxTransmissionUnit (mtu)

Access	Read only
Description	This attribute indicates the actual maximum transmission unit (MTU) supported on this LSP Tunnel. This is the smallest common denominator MTU of all MPLS capable interfaces on the route of the LSP tunnel. The value of this attribute is expressed in octets.
Mib	no_mib
Values	Decimal (1..4294967295)
Units	octets
Default	No default

ATTRIBUTE Rtr Mpls Lsp tunnelComponentName

Access	Read only
Description	This attribute specifies the corresponding *Rtr/<s> RsvpTe Tunnel/<Src Lsp Tunnel Address>,<Dest Lsp Tunnel Address>,<tunnel ID>,<Lsp ID>* that is associated with this LSP.
Mib	no_mib
Values	The name of the component
Default	No default

COMPONENT Rtr Mpls Lsp IpV4ReachableAddr (RAddr)

Instance	ipV4Element (ipv4Elem) [IP address] ipV4Prefix (ipv4Pref) [Decimal (1..32)]
Scope	Application
Description	*Rtr/<s> Mpls Lsp/n Ipv4ReachableAddr/<IP address>,<IP address length>* The *Ipv4ReachableAddr* component represents a destination IP address that acts as the FEC for the LSPs. Only the *Lsp* that has been provisioned to be the primary LSP can have *IpV4RA* subcomponents. There may be multiple instances of the *Ipv4ReachableAddr* component for each primary LSP. The addresses provisioned must be unique across all LSPs on this router. 1) The <IP address> index indicates the destination address. It is a host address if the second index <IP address length> has the value 32; otherwise it is a network address.

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2) The <IP address length> index represents the length of the IP address given in the first index <IP address>.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT Rtr RsvpTe

Groups:
GROUP Rtr RsvpTe OsiState (State)
GROUP Rtr RsvpTe Provisioned (Prov)
GROUP Rtr RsvpTe Statistics (Stats)

Scope: Application

Description:
Rtr/<s> RsvpTe
This component represents the MPLS ReSerVation Protocol (RSVP-TE) for Label Switched Path (LSP) tunnels. RSVP-TE is a signaling protocol used by Label Switched Routers (LSRs) to establish LSPs through a network by mapping network-layer routing information directly to data-link layer switched paths. There is only one instance of RSVP-TE per Nortel Networks Multiservice Switch.

Mib: no_mib

Dyn. Subcomp.:
COMPONENT Rtr RsvpTe Neighbor (Nbr)
COMPONENT Rtr RsvpTe Tunnel
COMPONENT Rtr RsvpTe InterfaceStatistics (IfStats)

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr RsvpTe OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

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ATTRIBUTE Rtr RsvpTe adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr RsvpTe operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr RsvpTe usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

GROUP Rtr RsvpTe Provisioned (Prov)

Properties: Provisioned

Description

This group of attributes configures the RSVP-TE capabilities for this LSR. These attributes are shelf-wide attributes that apply to all *Rtr/<s> Interface/<IP Address> RsvpTeIf* components. Any of the *RsvpTeIf* components can override any of these shelf-wide attributes.

Mib: no_mib

ATTRIBUTE Rtr RsvpTe refreshInterval (rInt)

Access:
Read: All
Write: All

Description

This attribute specifies the interval between refresh messages sent by this LSR.
This value is sent to the next hop in the TIME_VALUES object of the PATH/RESV message and is used in calculation of the lifetime of the PATH/RESV state block at the next hop.

Mib: no_mib

Values: Decimal (1..1800)

Units: seconds

Default: 30

ATTRIBUTE Rtr RsvpTe refreshKeepMultiplier (rKeep)

Access:
Read: All
Write: All

Description: This attribute specifies the default minimum number of refresh intervals that must pass before a PATH or a RESV state which is not being refreshed will be aged out.

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This value is used in calculating the lifetime of Path State Block (PSB) and Reservation State Block (RSB) for this interface; it prevents the premature loss of these states.

Mib	no_mib
Values	Decimal (1..50)
Default	3

ATTRIBUTE Rtr RsvpTe slewMax (slew)

Access	Read: All Write: All
Description	This attribute specifies the default rate on how fast the *refreshInterval* can increase on the LSR. When a new *refreshInterval* value is provisioned to a higher value, the refresh interval will be increased at *slewMax* percentage of the previous interval at each PATH/RESV cycle. In another words, the ratio of two successive refresh interval values will not exceed 1 + (Slew Max/100).
Mib	no_mib
Values	Decimal (1..200)
Units	%
Default	30

ATTRIBUTE Rtr RsvpTe helloInterval (hInt)

Access	Read: All Write: All
Description	This attribute specifies the default interval between HELLO messages sent by this LSR. A value of ***disabled*** indicates that the Hello mechanism is not enabled.
Mib	no_mib
Values	Decimal (0.1..100.0) disabled
Units	seconds
Default	0.5

ATTRIBUTE Rtr RsvpTe helloMultiplier (hMult)

Access	Read: All Write: All
Description	This attribute specifies the default minimum number of hello intervals that must pass before the RSVP-TE connection is considered down.
Mib	no_mib

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Values	Decimal (2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 5.5; 6.0; 6.5; 7.0; 7.5; 8.0; 8.5; 9.0; 9.5; 10.0)
Default	3.5

GROUP Rtr RsvpTe Statistics (Stats)

Properties	Operational
Description	This group contains the attributes that indicate the aggregation of the control statistics from all of the *Rtr/<s> RsvpTe InterfaceStatistics/<IP Address>* and from any RSVP-TE control messages that were collected from any interfaces that were not configured with an *RsvpTeIf*. All of these attributes represent messages sent and received from this LSR. For those attributes within this group that count the number of messages sent and received, these attributes will rollover to 0 when the maximum value is exceeded.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe pathMessages (path)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PATH messages sent and received. This value is a snapshot of the FP-based real time counter and therefore may be up to 30 seconds out of date.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe pathErrorMessages (pathError)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PATH ERROR messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

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ATTRIBUTE Rtr RsvpTe lastPathErrorInfo (lastPathErr)

Access	Read: All Write: Illegal
Description	This attribute indicates information regarding the last PATH ERROR message sent and received. This attribute is a vector of strings containing the following information: error code, error value, a time stamp indicating when this message was sent or received and the IP address indicating which interface the message was on. If there are no PATH ERROR messages, then these values will be blank.
Mib	no_mib
Vector of	String (0..35, ASCII)
Index	sentCode sentValue sentTime sentInterface rcvdCode rcvdValue rcvdTime rcvdInterface
Default	([8] "")

ATTRIBUTE Rtr RsvpTe pathTearMessages (pathTear)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PATH TEAR messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe resvMessages (resv)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RESV messages sent and received. This value is a snapshot of the FP-based real time counter and therefore may be up to 30 seconds out of date.

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Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe resvConfirmMessages (resvConf)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RESV CONFIRM messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe resvErrorMessages (resvErr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RESV ERROR messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe lastResvErrorInfo (lastResvErr)

Access	Read: All Write: Illegal
Description	This attribute indicates information regarding the last RESV ERROR message sent and received. This attribute is a vector of strings containing the following information: error code, error value, a time stamp indicating when this message was sent or received and the IP address indicating which interface the message was on. If there are no RESV ERROR messages, then these values will be blank.

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Mib	no_mib
Vector of	String (0..35, ASCII)
Index	sentCode sentValue sentTime sentInterface rcvdCode rcvdValue rcvdTime rcvdInterface
Default	([8] "")

ATTRIBUTE Rtr RsvpTe resvTearMessages (resvTear)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RESV TEAR messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe helloMessages (hello)

Access	Read: All Write: Illegal
Description	This attribute counts the number of HELLO messages sent and received. This statistic may be 30 seconds out of date as it is a snapshot of an FP-based real time counter.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe rsvpDiscards (discard)

Access	Read: All Write: Illegal

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Description	This attribute counts the number of sent and received RSVP-TE messages that were discarded. This statistic may be 30 seconds out of date as it is a snapshot of a FP-based real time counter.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe lastRsvpDiscardInfo (lastDiscard)

Access	Read: All Write: Illegal
Description	This attribute indicates information regarding the last RSVP-TE message discard sent and received. This attribute is a vector of strings containing the following information: message type, a time stamp indicating when this message was sent or received and the IP address indicating which interface the message was on. If there are no RSVP-TE messages discarded, then these values will be blank.
Mib	no_mib
Vector of	String (0..35, ASCII)
Index	sentMsgType sentTime sentInterface rcvdMsgType rcvdTime rcvdInterface
Default	([6] "")

COMPONENT Rtr RsvpTe Neighbor (Nbr)

Instance	IP address
Groups	GROUP Rtr RsvpTe Nbr Operational (Oper)
Scope	Application
Description	*Rtr/<s> RsvpTe Neighbor/<IP Address>* This component represents a view of an immediate neighbor connected

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on a *Rtr/<s> Interface/<IP Address> RsvpTeIf*. The *Neighbor* instance value is the IP address of the remote interface.

Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr RsvpTe Nbr LabelIn (LblIn) COMPONENT Rtr RsvpTe Nbr LabelOut (LblOut)
Common Verbs	Help List Display

GROUP Rtr RsvpTe Nbr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of this *Rtr/<s> RsvpTe Neighbor/*<IP Address>.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Nbr localInterfaceAddress (localIf)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the local *Rtr/<s> Interface/<IP Address>* that is connected to this neighbor.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr RsvpTe Nbr connectionsToInterface (connToIf)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSP connections configured towards the neighbor (i.e. number of *LabelOut* instances for this *Neighbor*)
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rtr RsvpTe Nbr connectionsFromInterface (connFromIf)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSP connections configured from the neighbor (i.e. number of *LabelIn* instances for this *Neighbor*)

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Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

COMPONENT Rtr RsvpTe Nbr LabelIn (LblIn)

Instance	Decimal (0..1048575)
Scope	Application
Description	*Rtr/<s> RsvpTe Nbr/<IP Address> LabelIn/n* This component represents a label associated with an LSP routed from the neighbor. The “In” in the component name reflects the datapath direction. The label is generated locally on receipt of a PATH label request and then sent upstream through RESV label mapping.
Mib	no_mib
Common Verbs	Help List Display

COMPONENT Rtr RsvpTe Nbr LabelOut (LblOut)

Instance	Decimal (0..1048575)
Scope	Application
Description	*Rtr/<s> RsvpTe Nbr/<IP Address> LabelOut/n* This component represents a label associated with an LSP routed to the neighbor. “Out” in the component name reflects the data path direction. The label is supplied by the downstream neighbor through RESV label mapping.
Mib	no_mib
Common Verbs	Help List Display

COMPONENT Rtr RsvpTe Tunnel

Instance	srcLspTunnelAddr [IP address] destLspTunnelAddr [IP address] tunnelId [Decimal (0..65535)] lspId [Decimal (0..65535)]
Groups	GROUP Rtr RsvpTe Tunnel TunnelOperational (TunOp) GROUP Rtr RsvpTe Tunnel TimeStamp (Ts) GROUP Rtr RsvpTe Tunnel TunnelDescription GROUP Rtr RsvpTe Tunnel IncomingTunnelOper (InOp) GROUP Rtr RsvpTe Tunnel OutgoingTunnelOper (OutOp)

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Scope	Application
Description	*Rtr/<s> RsvpTe Tunnel/<Src Lsp IP Address>,<Dest Lsp IP Address>,<Tunnel ID>, <LSP ID>* This component represents an LSP tunnel routed through this node using the RSVP-TE signaling protocol.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr RsvpTe Tunnel **TunnelOperational (TunOp)**

Properties	Operational
Description	This group contains the operational attributes for this LSP tunnel.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel **operationalState (op)**

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of this LSP tunnel.
Mib	no_mib
Values	disabled enabled
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel **rsvpSessionName (sessName)**

Access	Read: All Write: Illegal
Description	This attribute indicates the SessionName for the LSP signaled in the PATH label request. This attribute may be null. When the LSP tunnel is originated by a Nortel Networks Multiservice Switch node, the *rsvpSessionName* is the node name followed by the provisioned *Rtr/<s> Mpls Lsp/n* component name.
Mib	no_mib
Values	String (0..128, ASCII)
Default	No default

GROUP Rtr RsvpTe Tunnel **TimeStamp (Ts)**

Properties	Operational

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Description	This group contains the attributes that specify the time stamps marking the initial PATH and RESV message processing.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel **initialPathTimeStamp (initPathTs)**

Access	Read: All Write: Illegal
Description	This attribute indicates when this tunnel was created based on the initial PATH message processing.
Mib	no_mib
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel **initialResvTimeStamp (initResvTs)**

Access	Read: All Write: Illegal
Description	This attribute indicates when this LSP tunnel was established based on the initial RESV message processing.
Mib	no_mib
Values	Time (DHMS)
Default	No default

GROUP Rtr RsvpTe Tunnel **TunnelDescription**

Properties	Operational
Description	This group contains the signaled attributes which describe the LSP Tunnel.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel **bandwidth (bw)**

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth reserved by this LSP tunnel.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	kbit/s
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel **extendedTeTunnelId (extId)**

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Access	Read: All Write: Illegal
Description	This attribute indicates the extended tunnel identifier of this LSP tunnel. In most cases, it is the originating nodes IP address, but it may be zero.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel teTunnelResvStyle (style)

Access	Read: All Write: Illegal
Description	This attribute indicates the RESV style used by this LSP tunnel. There are two styles that are supported: Fixed Filter (ff) and Shared Explicit (se).
Mib	no_mib
Values	fixedFilter (ff) sharedExplicit (se)
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel pathRecordRouteObject (pathRro)

Access	Read: All Write: Illegal
Description	This attribute indicates the Record Route Object (RRO) if provided in the PATH message. It is a vector of strings where each string specifies a hop address and optionally, the label that was used at that hop. The Nortel Networks Multiservice Switch does not include the label in the PATH RRO for its hops.
Mib	no_mib
Vector of	String (11..28, ASCII)
Index	Decimal (0..19)
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel resvRecordRouteObject (resvRro)

Access	Read: All Write: Illegal
Description	This attribute indicates the Record Route Object (RRO) if provided in the RESV message. It is a vector of strings where each string specifies a hop address and optionally the label used at that hop. When the signaled session attribute indicates that labels can be included, the Nortel Networks Multiservice Switch will encode the label for its hops in the RESV RRO.

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Mib	no_mib
Vector of	String (11..28, ASCII)
Index	Decimal (0..19)
Default	No default

GROUP Rtr RsvpTe Tunnel **IncomingTunnelOper (InOp)**

Properties	Operational
Description	This group contains the attributes that describe the incoming interface and label for this tunnel.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel **incomingInterface (inIf)**

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the local interface used for the LSPs incoming connection. This value is only valid on the Egress LER and the Tandem LSR.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel **labelIn**

Access	Read: All Write: Illegal
Description	This attribute indicates the incoming label for this LSP tunnel. This value is only valid on the Egress LER and the Tandem LSR.
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

GROUP Rtr RsvpTe Tunnel **OutgoingTunnelOper (OutOp)**

Properties	Operational
Description	This group contains the attributes that describe the outgoing interface and label for this tunnel.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel **outgoingInterface (outIf)**

Access	Read: All Write: Illegal

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Description	This attribute indicates the IP address of the local interface used for the LSPs outgoing connection. This value will only be valid for the Ingress LER and the Tandem LSR.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel labelOut

Access	Read: All Write: Illegal
Description	This attribute indicates the outgoing label for this LSP tunnel. This value will only be valid for the Ingress LER and the Tandem LSR.
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

COMPONENT Rtr RsvpTe InterfaceStatistics (IfStats)

Instance	IP address
Groups	GROUP Rtr RsvpTe IfStats Statistics (Stats)
Scope	Application
Description	*Rtr/<s> RsvpTe InterfaceStatistics/<IP Address>* This component represents the RSVP-TE signaling statistics for a particular *RsvpTeInterface*. The *InterfaceStatistics* instance value is the IP address of the local interface.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr RsvpTe IfStats Statistics (Stats)

Properties	Operational
Description	This group contains statistics attributes of the *VoFr* component.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe IfStats fragmentedHighestPriorityFrames

Access	Read: All Write: Illegal

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Description	This attribute counts egress frames with the highest priority, which had to be fragmented because they were larger than *maximumFrameSize*. This could happen when a data call is setup to use the highest emission priority, or MPA is provisioned with too low maximum frame size. When the maximum is reached the count wraps to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr RsvpTe IfStats lostFragmentsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts lost VoFr fragments from the interface. Presence of lost fragments indicates a link problem. Note that lost whole frames cannot be detected. When the maximum is reached the count wraps to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr RsvpTe IfStats protocolViolationsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts VoFr protocol violations detected in the data from the interface. When the maximum is reached the count wraps to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Ldp (Ldp)

Groups	GROUP Rtr Ldp LdpPolicy (Policy) GROUP Rtr Ldp Loop (Loop)
Scope	Application
Description	*Rtr/<s> Ldp* This component represents the Label Distribution Protocol (LDP). LDP is a signaling protocol used by Label Switched Routers (LSRs) to establish Label Switched Paths (LSPs) through a network by mapping network-layer routing information directly to data-link layer switched paths.

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There is only one instance of the *Ldp* component for each *Rtr* component.

Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Ldp Binding (Bind)
Dyn. Subcomp.	COMPONENT Rtr Ldp Neighbor (Nbr)
Common Verbs	Help List Display Add DELete

GROUP Rtr Ldp LdpPolicy (Policy)

Properties	Provisioned
Description	This group contains the attributes which describe the characteristics of remote LSRs that are allowed to establish LDP peers with this LSR.
Mib	no_mib

ATTRIBUTE Rtr Ldp keepAliveHoldTimer (kaTimer)

Access	Read: All Write: All
Description	This attribute specifies the interval for keep alive hold timer in seconds for a session.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	30

ATTRIBUTE Rtr Ldp helloTimer (helloTimer)

Access	Read: All Write: All
Description	This attribute specifies the interval for hello timer in seconds for a given LDP adjacency.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	15

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ATTRIBUTE Rtr Ldp failedInitThreshold

Access	Read: All Write: All
Description	This attribute specifies that the *failedInitSessionThresholdExceeded* notification is generated whenever the value is exceeded.
Mib	no_mib
Values	Decimal (1..20)
Default	10

ATTRIBUTE Rtr Ldp signaledPenultimateHopPop (php)

Access	Read: All Write: All
Description	This attribute specifies whether Penultimate Hop Pop is signaled out from this node. When the attribute value is ***on***, this LSR will assign and distribute “Implicit Null Label (3)” for its own loopback address to all neighboring LSRs. When the attribute value is ***off***, this LSR will distribute label values outside the reserved label values. Default is ***on***.
Mib	no_mib
Values	on off
Default	on

ATTRIBUTE Rtr Ldp acceptNonProvisionedNeighbor (aNpNbr)

Access	Read: All Write: All
Description	This attribute specifies if non provisioned Ldp session can be established.
Mib	no_mib
Values	disabled enabled
Default	enabled

ATTRIBUTE Rtr Ldp defaultKeyTransitionDelay (ktDelay)

Access	Read: All Write: All

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Description	This attribute specifies the default delay time, in minute, for a new MD5 key to take affect. Each LDP neighbor uses this value by default and can be overridden by their corresponding *Rtr/<s> Ldp Nbr/<s> Cfg keyTransitionDelay* attribute.
Mib	no_mib
Values	Decimal (1..20160)
Units	minutes
Default	10

ATTRIBUTE Rtr Ldp lsrCapability

Access	Read: All Write: All
Description	This attribute specifies whether this component will have Label Edge Router (LER) capabilities or both LER and tandem Label Switch Router (LSR) capabilities. The default value for a Multiservice Switch 7400 is ***lerOnly***. The default value for a Multiservice Switch 15000 or Multiservice Switch 20000 is ***lerLsr***.
Mib	no_mib
Values	lerOnly lerLsr
Default	No default

GROUP Rtr Ldp Loop (Loop)

Properties	Provisioned
Description	This group contains parameters that handle loop detection.
Mib	no_mib

ATTRIBUTE Rtr Ldp loopDetection (loopDet)

Access	Read: All Write: All
Description	This attribute specifies a mechanism for finding looping LSPs. When the attribute value is ***on***, messages related to the set up of LSPs are checked to see if the path being setup has a loop. There is also a limit on the number of hops, which is used when loop detection is ***on***. This length is specified in the *hopCountLimit* attribute.
Mib	no_mib
Values	on off

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Default	No default

ATTRIBUTE Rtr Ldp hopCountLimit (hcLimit)

Access	Read: All Write: All
Description	This attribute specifies a limit on the number of hops allowed for each LSP. It is used when setting up LSPs to detect loops. When enabling detection of loops with the *loopDetection* attribute, this attribute should be specified.
Mib	no_mib
Values	Decimal (2..40)
Default	10

COMPONENT Rtr Ldp Binding (Bind)

Instance	fecString (fec) [String (9..19, ASCII)] ldpIdString (ldpId) [String (9..21, ASCII)]
Groups	GROUP Rtr Ldp Bind InOperational (In) GROUP Rtr Ldp Bind OutOperational (Out)
Scope	Application
Description	*Rtr/<s> Ldp Binding/<s>,<s>* This component indicates an LSP through a unique Fec and remote Ldp identifier binding. The LSP in question is always referenced in terms of the relationship to the data path. The *Binding* component is recommended as a good way to view the Transport level LSPs. The instance identifier of the *Binding* components is the Fec and the remote Ldp identifier, where the Fec is “IP Address[Fec Prefix Length]”, and the remote Ldp identifier is “IP Address-Label Space Identifier”.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Bind InOperational (In)

Properties	Operational
Description	This group contains the attributes bound to a unique Fec and Ldp identifier for the labels generated locally.
Mib	no_mib

ATTRIBUTE Rtr Ldp Bind inLabel

Access	Read: All Write: Illegal

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Description	This attribute indicates the transport label bound to the unique pairing of Fec and remote Ldp identifier. This is the locally generated label.
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rtr Ldp Bind inUsageState (inUsage)

Access	Read: All Write: Illegal
Description	This attribute indicates the usage state of the *inLabel* attribute under the *Binding* component. The three possible states are: ***idle***, ***active***, and ***busy***. ***idle***: Indicates labels that are supplied but are not used to represent the LSP. ***active***: Indicates labels that are supplied and are selected for use to represent the LSP. Active labels can accept more users. ***busy***: Indicates labels that are supplied and are selected for use to represent the LSP. Busy labels cannot accept more users.
Mib	no_mib
Values	idle active busy
Default	No default

ATTRIBUTE Rtr Ldp Bind inOperationalState (inOp)

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the *inLabel* attribute under the *Binding* component. The two possible states are: ***enabled*** and ***disabled***. ***enabled***: Indicates labels that are installed in the hardware for data path use. ***disabled***: Indicates labels that are not installed in the hardware.
Mib	no_mib
Values	disabled enabled
Default	No default

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GROUP Rtr Ldp Bind **OutOperational (Out)**

Properties	Operational
Description	This group contains the attributes bound to a unique Fec and Ldp identifier for the labels supplied by the downstream neighbor.
Mib	no_mib

ATTRIBUTE Rtr Ldp Bind **outLabel**

Access	Read: All Write: Illegal
Description	This attribute indicates the transport label bound to the unique pairing of Fec and remote Ldp identifier. This label value is supplied by the downstream neighbor.
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rtr Ldp Bind **outUsageState (outUsage)**

Access	Read: All Write: Illegal
Description	This attribute indicates the usage state of the *outLabel* attribute under the *Binding* component. The three possible states are: ***idle***, ***active***, and ***busy***. ***idle***: Indicates labels that are supplied but are not used to represent the LSP. ***active***: Indicates labels that are supplied and are selected for use to represent the LSP. Active labels can accept more users. ***busy***: Indicates labels that are supplied and are selected for use to represent the LSP. Busy labels cannot accept more users.
Mib	no_mib
Values	idle active busy
Default	No default

ATTRIBUTE Rtr Ldp Bind **outOperationalState (outOp)**

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the *outLabel* attribute under the *Binding* component. The two possible states are: ***enabled*** and ***disabled***.

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enabled: Indicates labels that are installed in the hardware for data path use.

disabled: Indicates labels that are not installed in the hardware.

Mib	no_mib
Values	disabled enabled
Default	No default

COMPONENT Rtr Ldp Neighbor (Nbr)

Instance	remoteRtrIpAddr (addr) [IP address] labelSpaceId (lsId) [Decimal (0..65535)]
Groups	GROUP Rtr Ldp Nbr NbrOp (Op) GROUP Rtr Ldp Nbr Statistics (Stats)
Scope	Application
Description	*Rtr/<s> Ldp Neighbor/<Ip Address>,*<labelSpaceId> This component represents a view of the remote neighbor for the *LDP* component. There is a 1:1 mapping between the *Neighbor* component and an LDP session. The instance identifier of the *Neighbor* component is composed of the neighbor's IP address and the label space identifier. For provisioned components, the label space identifier must be zero (0).
Mib	no_mib
Subcomponents	COMPONENT Rtr Ldp Nbr Descriptor (Desc)
Dyn. Subcomp.	COMPONENT Rtr Ldp Nbr Adjacency (Adj) COMPONENT Rtr Ldp Nbr LabelIn COMPONENT Rtr Ldp Nbr LabelOut
Common Verbs	Help List Display Add DELete

GROUP Rtr Ldp Nbr NbrOp (Op)

Properties	Operational
Description	This group contains the operational attributes of the *Neighbor* component.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr sessionId

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Access	Read: All Write: Illegal
Description	This attribute indicates the session identifier for the *Neighbor* component. The session identifier is formed by concatenating the local LDP identifier with the remote LDP identifier.
Mib	no_mib
Values	String (22..46, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr sessionState

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the session represented by the *Neighbor* component. The session can be in any of the following five states: ***Non-existent - No Adjacencies***: Indicates that there are no adjacencies for this session. ***Non Existent - Require Provisioning***: Indicates that a dynamic session has at least one adjacency, but the *Rtr/<s> Ldp* ***acceptNonProvisionedNeighbor*** attribute is disabled. The dynamic TCP session is not being established. There are two ways to move this neighbor out of this state and attempt to establish a TCP session. Either set the *Rtr/<s> Ldp acceptNonProvisionedNeighbor* attribute to enabled or add a corresponding *Rtr/<s> Ldp Neighbor/<s>* component. If connectivity with this neighbor is not required in, then remove the corresponding *Rtr/<s> If/<x> LdpIf* from the current provisioning view. ***Non Existent - Throttling:*** Indicates that a session has at least one adjacency, but is currently throttling it is session setup with exponential back-off. ***Non Existent - Establishing TCP***: Indicates that the session is currently attempting to setup a TCP connection (either active or passive). ***Initialized***: Indicates the transmission of an initialization message in the active role, or the receiving of an acceptable initialization message in the passive role. In the passive role, receiving any other LDP message will cause a state change to ***Non Existent***. ***Opensent***: Indicates that an acceptable initialization message was received and a KeepAlive message is sent in response. Receiving any other LDP message will cause the value of the *sessionState* attribute to change to ***Non-Existent.*** ***Openrecv***: Indicates that an acceptable KeepAlive message has been

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	received. Receiving any other LDP message will cause the value of the *sessionState* attribute to change to ***Non-Existent***. ***Operational***: Indicates that the session is operational and is receiving other LDP messages.
Mib	no_mib
Values	nonExistent-NoAdjacencies nonExistent-RequireProvisioning nonExistent-Throttling nonExistent-EstablishingTCP initialized opensent openrecv operational
Default	No default

ATTRIBUTE Rtr Ldp Nbr **ldpMode**

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated LDP Mode. The attribute can have a value of Downstream Unsolicited (***du***) or Downstream On Demand (***dod***).
Mib	no_mib
Values	dod du
Default	No default

ATTRIBUTE Rtr Ldp Nbr **keepAliveHoldTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the current hold time (in seconds) for the session.
Mib	no_mib
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Ldp Nbr **nextKeepAlive**

Access	Read: All Write: Illegal
Description	This attribute indicates the time (in seconds) left before the next keep alive message is sent to its remote neighbor.

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Mib	no_mib
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Ldp Nbr keepAliveInterval

Access	Read: All Write: Illegal
Description	This attribute indicates (in seconds) the keep alive interval time. The interval represents how often a keep alive message is sent to its remote neighbor.
Mib	no_mib
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Ldp Nbr tcpUpTime

Access	Read: All Write: Illegal
Description	This attribute indicates when the TCP connection first became active.
Mib	no_mib
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtr Ldp Nbr numberOfAdjacencies

Access	Read: All Write: Illegal
Description	This attribute counts the number of adjacencies managed by the *Neighbor* component.
Mib	no_mib
Values	Decimal (1..8)
Default	No default

ATTRIBUTE Rtr Ldp Nbr remoteTcpAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the remote transport address coupled with the TCP port. If the neighbor fails to provide a value for the *remoteTcpAddress*

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attribute, then the source address from the Hello message is used in its place.

The port number will be zero until the TCP session is operational.

Mib no_mib

Values String (9..21, ASCII)

Default No default

ATTRIBUTE Rtr Ldp Nbr localTcpAddress

Access Read: All
Write: Illegal

Description This attribute indicates the local transport address coupled with the TCP port.

The port number will be zero until the TCP session is operational.

Mib no_mib

Values String (9..21, ASCII)

Default No default

ATTRIBUTE Rtr Ldp Nbr localLdpId

Access Read: All
Write: Illegal

Description This attribute indicates the local Ldp identifier.

Mib no_mib

Values String (9..21, ASCII)

Default No default

ATTRIBUTE Rtr Ldp Nbr lastFailureReason

Access Read: All
Write: Illegal

Description This attribute indicates the last failure reason of the session.
The value of this attribute is only displayed in case of a failure event.
The ***rxNot*** failure reasons mean that the session received a critical teardown notification from the remote end.

Mib no_mib

Values noError
internalError
userClear
userLock
userCriticalProvChange

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localTcpSocketFailure
remoteTcpSocketClosure
tcpSocketConnectionTimeout
tcpSocketCreationFailed
unexpectedTcpSocket
txOverTcpFailed
lastAdjacencyDownHoldTimeExpired
lastAdjacencyDown
noAdjacency
bothSessionsActive
rxInitializationMsgInWrongState
rxKeepAliveMessageInWrongState
rxUnexpectedMessageInWrongState
rxPduWithInvalidLength
tlvLengthMismatchWithMsgSize
msgLengthMismatchWithPduSize
rejectPduWithBadProtocolVersion
rejectPduWithBadRemoteLdpId
rejectInitMsgWithBadLocalLdpId
rejectInitMsgMaxPduLength
sessionInitialisationTimeout
keepAliveTimeOutForRxTraffic
rxNot-BadLdpIdentifier
rxNot-BadProtocolVersion
rxNot-BadPduLength
rxNot-BadMessageLength
rxNot-BadTlvLength
rxNot-MalformedTlvValue
rxNot-HoldTimeExpired
rxNot-Shutdown
rxNot-Reject-NoHello
rxNot-Reject-ParamAdvMode
rxNot-Reject-ParamMaxPdu
rxNot-Reject-ParamLabelRange
rxNot-KeepAliveTimeOut
rxNot-Reject-BadKeepAliveTime
rxNot-RemoteInternalError
rxNot-UnrecognizedStatusCode
anInvalidTlvValueWasReceived
rejectInitMsgWithBadLabelRange

Default — No default

ATTRIBUTE Rtr Ldp Nbr **authenticationType**

Access — Read: All
Write: Illegal

Description — This attribute indicates the authentication type of the *Neighbor*. If the *md5Key* attribute under the *Rtr Ldp Neighbor Descriptor* component is set to a null string, this neighbor's authentication type is ***none***; otherwise, if the *md5Key* attribute is set to a valid non-null string, this neighbor's

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authentication type is ***md5***.

For the non-provisioned *Neighbor*, its authentication type is always ***none***.

Mib: no_mib

Values:
none
md5

Default: No default

ATTRIBUTE Rtr Ldp Nbr **noAuthenticationPkts**

Access:
Read: All
Write: Illegal

Description: This attribute indicates the number of packets received on this LDP session's underlying TCP connection, which do not contain the MD5 authentication information, but MD5 authentication is provisioned on the neighbor. This type of authentication failure occurs when the *md5Key* attribute under the *Rtr Ldp Neighbor Descriptor* component is set to a valid non-null string, but the remote neighbor does not use MD5 authentication, or when a hacker is spoofing packets from a legitimate neighbor. This counter wraps to zero when it exceeds the maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Rtr Ldp Nbr **badAuthenticationPkts**

Access:
Read: All
Write: Illegal

Description: This attribute indicates the number of packets received on this LDP session's underlying TCP connection, which fail the MD5 authentication. This type of authentication failure occurs when the *md5Key* attribute set under the *Rtr Ldp Neighbor Descriptor* component does not match the MD5 key used by the remote neighbor, or when a hacker is spoofing packets from a legitimate neighbor. This counter wraps to zero when it exceeds the maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Rtr Ldp Nbr **unexpectedAuthenticationPkts**

Access:
Read: All
Write: Illegal

Description: This attribute indicates the number of packets received on this LDP session's underlying TCP connection, which contain the MD5

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	authentication information, but MD5 authentication is not provisioned on the neighbor. This type of authentication failure occurs when the *md5Key* attribute under the *Rtr Ldp Neighbor Descriptor* component is set to a null string, but the remote neighbor uses MD5 authentication, or when a hacker is spoofing packets from a legitimate neighbor. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ldp Nbr nextHopAddressReceived

Access	Read: All Write: Illegal
Description	This attribute indicates a complete list of the next hop addresses received on the session.
Mib	no_mib
List of	IP address
Default	No default

GROUP Rtr Ldp Nbr Statistics (Stats)

Properties	Operational
Description	This group contains the message statistics related to the neighbor component
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr initializationMessages (init)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Initialization messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr keepAliveMessages (keepAlive)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of Keep Alive messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr notificationMessages (notif)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Notification messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr addressMessages (addr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Address messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr addressWithdrawMessages (addrWith)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of Address Withdraw messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelMappingMessages (labelMap)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Mapping messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelRequestMessages (labelReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Request messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelWithdrawMessages (labelWith)

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Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Withdraw messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelReleaseMessages (labelRel)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Release messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelAbortMessages (labelAbort)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Abort messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

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COMPONENT Rtr Ldp Nbr Adjacency (Adj)

Instance	localIfAddress (local) [IP address] remoteIfAddress (remote) [IP address]
Groups	GROUP Rtr Ldp Nbr Adj Operational (Op)
Scope	Application
Description	*Rtr/<s> Ldp Neighbor/<s> Adjacency/<s>,<s>* This component represents a Hello Adjacency for an *InwRouter Ldp Neighbor* component. There can be multiple adjacencies per *Neighbor* component. The *Neighbor* component instance is maintained for as long as there is one adjacency.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Nbr Adj Operational (Op)

Properties	Operational
Description	This group contains the operational attributes for the *Adjacency* component.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr Adj ldpIfName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface that the adjacency is currently active on. It relates to the LDP interface component name which is associated with the media over which the LDP adjacency occurs.
Mib	no_mib
Values	The name of the component
Default	No default

ATTRIBUTE Rtr Ldp Nbr Adj timeStamp (time)

Access	Read: All Write: Illegal
Description	This attribute indicates when the adjacency was first created.
Mib	no_mib
Values	Time (DHMS)
Default	No default

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COMPONENT Rtr Ldp Nbr LabelIn

Instance	Decimal (0..1048575)
Groups	GROUP Rtr Ldp Nbr LabelIn Operational (Op)
Scope	Application
Description	*Rtr/<s> Ldp Neighbor/<s> LabelIn/<n>* This component indicates the label received for a given *Neighbor* component. The “In” in the component name reflects the data path direction. In this case, it represents the label that is generated locally.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Nbr LabelIn Operational (Op)

Properties	Operational
Description	This group contains the operational attributes for the *LabelIn* dynamic component.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr LabelIn fec

Access	Read: All Write: Illegal
Description	This attribute indicates the Fec associated to the *Label* component.
Mib	no_mib
Values	String (9..19, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr LabelIn timeStamp

Access	Read: All Write: Illegal
Description	This attribute indicates when the label was allocated by the session.
Mib	no_mib
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtr Ldp Nbr LabelIn adjacencyList

Access	Read: All Write: Illegal

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Description	This attribute indicates a list of interfaces associated with the adjacency that the incoming label is configured on. It relates to the *LDP* interface component name associated with the media over which the LDP adjacency occurs. This attribute includes the usage state and operational state information associated with the *Label* component, to highlight the interface that the label is currently active on. The usage state information in the attribute indicates the usage state of the *Label* component. The three possible states are: ***idle***, ***active***, and ***busy***. ***idle***: Indicates labels that are supplied but are not used to represent the LSP. ***active***: Indicates labels that are supplied and are selected for use to represent the LSP. Active labels can accept more users. ***busy***: Indicates labels that are supplied and are selected for use to represent the LSP. Busy labels cannot accept more users. The operational state information in the attribute indicates the operational state of the *Label.* The two possible states are: ***enabled*** and ***disabled***. ***enabled***: Indicates labels that are installed in the hardware for data path use. ***disabled***: Indicates labels that are not installed in the hardware.
Mib	no_mib
List of	String (30..76, ASCII)
List Size	8
Default	No default

COMPONENT Rtr Ldp Nbr LabelOut

Instance	Decimal (0..1048575)
Groups	GROUP Rtr Ldp Nbr LabelOut Operational (Op)
Scope	Application
Description	*Rtr/<s> Ldp Neighbor/<s> LabelOut/<n>* This component indicates the label sent for a given session. “Out” in the

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component name reflects the data path direction. In this case it represents the label received from the remote peer.

Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Nbr LabelOut Operational (Op)

Properties	Operational
Description	This group contains the operational attributes for the *LabelOut* dynamic component.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr LabelOut fec

Access	Read: All Write: Illegal
Description	This attribute indicates the Fec associated to the *Label* component.
Mib	no_mib
Values	String (9..19, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr LabelOut timeStamp

Access	Read: All Write: Illegal
Description	This attribute indicates when the label was allocated by the session.
Mib	no_mib
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtr Ldp Nbr LabelOut adjacencyList

Access	Read: All Write: Illegal
Description	This attribute indicates the list of interfaces associated with the adjacency that the outgoing label can be active on. It relates to the LDP interface component name associated with the media over which the LDP adjacency occurs. This attribute includes the usage state and operational state information associated with the *Label* component, to highlight the interface that the label is currently active on.

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The usage state information in the attribute indicates the usage state of the *Label* component. The three possible states are: ***idle***, ***active***, and ***busy***.

idle: Indicates labels that are supplied but are not used to represent the LSP.

active: Indicates labels that are supplied and are selected for use to represent the LSP. Active labels can accept more users.

busy: Indicates labels that are supplied and are selected for use to represent the LSP. Busy labels cannot accept more users.

The operational state information in the attribute indicates the operational state of the *Label.* The two possible states are: ***enabled*** and ***disabled***.

enabled: Indicates labels that are installed in the hardware for data path use.

disabled: Indicates labels that are not installed in the hardware.

Mib	no_mib
List of	String (30..76, ASCII)
List Size	8
Default	No default

COMPONENT Rtr Ldp Nbr Descriptor (Desc)

Groups	GROUP Rtr Ldp Nbr Desc Authentication (Auth)
Scope	Application
Description	*Rtr/<s> Ldp Nbr/<s> descriptor* This component represents the provisionable data for the *Neighbor*. This component is created automatically when the *Neighbor* is provisioned.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Nbr Desc Authentication (Auth)

Properties	Provisioned
Description	This group contains the attributes which specify the MD5 authentication data for the *Neighbor*.
Mib	no_mib

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ATTRIBUTE Rtr Ldp Nbr Desc **md5Key**

Access	Read: Illegal Write: All
Description	This attribute specifies the MD5 authentication key for the *Neighbor*. The default value of this attribute is a null string, which tells that MD5 authentication is not applied. Any ASCII character is valid except double quotes.
Mib	no_mib
Values	String (0..69, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr Desc **keyTransitionDelay (ktDelay)**

Access	Read: All Write: All
Description	This attribute specifies the delay time, in minutes, for the new key to take effect when the value of ***md5Key*** attribute is changed. The default value of this attribute is the value of the *Rtr/<s> Ldp* ***defaultKeyTransitionDelay*** attribute.
Mib	no_mib
Values	Decimal (1..20160) useLdpDefault
Units	minutes
Default	useLdpDefault

COMPONENT Rtr **ControlPlaneProtection (Cpp)**

Groups	GROUP Rtr Cpp Provisioned (Prov) GROUP Rtr Cpp Operational (Oper) GROUP Rtr Cpp OsiState (State)

COLLECTED STATS Router ControlPlaneProtection

Scope	Application
Description	*Vr/<string> Ip ControlPlaneProtection* *Rtr/<string> ControlPlaneProtection* *Rtr/<string> Vrf/<string> ControlPlaneProtection* This component represents the IP Control Plane Protection mechanism. The *CPP* helps prevent control traffic from the current Virtural Router, Router, or vrForwarder (VR/VRF) receiving excessive traffic from adversely affecting the control processing of others. If the rate of packets received by the local-destined address is greater than the provisioned value, CPP is notified. This component does not protect locally destined IP traffic including IP

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	options, IPv6, TTL of 0 or 1 which includes OSPF, and unsupported protocols (in hardware) such as ISIS.
Mib	no_mib
Dyn. Subcomp.	COMPONENT Rtr Cpp IsolatedDa
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB Clear Rtr Cpp

Impact	Service
Description	clear Vr/<string> Ip Cpp clear Rtr/<string> Cpp clear Rtr/<string> Vrf/<string> Cpp This command is intended for manually clearing all isolated addresses from the current *Cpp* component, and resume traffic to the locally destined addresses on all the FPs.

GROUP Rtr Cpp **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Cpp* component.
Mib	no_mib

ATTRIBUTE Rtr Cpp **packetsPerSecond (pps)**

Access	Read and write
Description	This attribute specifies the maximum number of packets per second a locally destined address on the VR/VRF can receive before being monitored by the *CPP* feature.
Mib	no_mib
Values	Decimal (100; 200; 300; 400; 500; 600; 700; 800; 900; 1000; 1100; 1200)
Default	1200

ATTRIBUTE Rtr Cpp **isolationTime (isolation)**

Access	Read and write
Description	This attribute specifies the amount of time a locally destined address will remain in isolation after exceeding the *packetsPerSecond* rate. If *gracePeriod* is non-zero, isolation will not occur until the conclusion of

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the grace period.

A value of 0 indicates that a locally destined address which is isolated can only be cleared using the *CLEAR* command.

If the traffic to the address is still excessive after the isolationTime expires, this locally destined address will remain in isolation for *IsolationTime* * 2 period. If the traffic to the address is still excessive after 3 times of the above step, the address will be permanently isolated until it is cleared by the *CLEAR* verb.

The minimum value of *IsolationTime* other than zero is 30.

Mib	no_mib
Values	Decimal (0; 30..3600)
Units	seconds
Default	30

ATTRIBUTE Rtr Cpp gracePeriod (grace)

Access	Read and write
Description	This attribute specifies period of time used to sample the flow rate before the packets are discarded. The intent of the grace period is to measure the average flow rate during this period to ensure that the exceeded traffic flow rate was not due to bursty traffic. If *mode* is ***study***, a list of static record are generated every 15 minutes including a list of locally-destined addresses having excessive flow and its avarage flow rates during the gracePeriod. If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period. A value of 0 of this attribute when *mode* is ***protected*** indicates that no monitoring of the address will be performed after an excessive flow is detected and isolation occurs immediately. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	no_mib
Values	Decimal (0..300)
Units	seconds
Default	5

ATTRIBUTE Rtr Cpp mode

Access	Read and write

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Description	This attribute specifies whether we are simply monitoring excessive traffic (***study***), or will ***protect*** the VR by discarding traffic during excessive traffic flows, or the feature is ***disabled***. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	no_mib
Values	study protect disabled
Default	disabled

GROUP Rtr Cpp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Cpp* component.
Mib	no_mib

ATTRIBUTE Rtr Cpp operationalStatus

Access	Read only
Description	This attribute indicates the current operational state of the *Cpp* component on this VR The following states are the valid states of the *Cpp* component: ***inactive***: there are currently no addresses on the VR/VRF being monitored or isolated. ***disabled***: the *Cpp* feature is currently disabled on the VR/VRF. ***monitoring***: there are currently addresses on the VR/VRF being monitored, but none are currently isolated. If the *mode* is set to ***study***, this state indicates there are currently addresses on the VR/VRF having excessive traffic. ***isolating***: there are currently addresses being isolated for this VR/VRF.
Mib	no_mib
Values	inactive disabled monitoring isolating
Default	No default

ATTRIBUTE Rtr Cpp isolatedDaCount

Access	Read only
Description	This attritute counts the total number of addresses currently being isolated for this VR.
Mib	no_mib
Values	Decimal (0..4096)

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Default	No default

GROUP Rtr Cpp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Cpp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Cpp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Cpp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

COLLECTED STATS Router ControlPlaneProtection

Description: The statistics record generated by the Router ControlPlaneProtection component.

ATTRIBUTE Rtr Cpp isolatedDa

Description: This attribute indicates the ip address of the isolated locally destined DA.

Values: IP address

ATTRIBUTE Rtr Cpp isolatedLp

Description: This attribute indicates the LP number on which the locally destined address is being isolated.

Values: Decimal (0..15)

ATTRIBUTE Rtr Cpp isolatedCounts

Description: This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values: Decimal (0..65535)

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ATTRIBUTE Rtr Cpp averageFlowRate

Description	This attribute indicates the average flow rate of the isolated DA during the isolation period.
Values	Decimal (0..65535)

COMPONENT Rtr Cpp IsolatedDa

Instance	address [IP address] lp [Decimal (0..15)]
Groups	GROUP Rtr Cpp IsolatedDa Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Cpp IsolatedLocalAddress/<ipAddress>,<lp>* *Rtr/<string> Cpp IsolatedLocalAddress/<ipAddress>,<lp>* *Rtr/<string> Vrf/<string> Cpp IsolatedLocalAddress/<ipAddress>,<lp>* Each entry of this component represents a locally destined address being isolated. There is one instance of this component per isolated address per lp.
Mib	no_mib
Common Verbs	Help List Display

VERB Clear Rtr Cpp IsolatedDa

Impact	Service
Description	*Clear Vr/<string> Ip Cpp* IsolatedDa/< ipAddress> *Clear Rtr/<string> Cpp* IsolatedDa/<ipAddress> *Clear Rtr/<string> Vrf/<string> Cpp* IsolatedDa/<ipAddress> This command is intended for manually clearing the isolated address and resume traffic to the local address for all FPs.

GROUP Rtr Cpp IsolatedDa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *IsolatedLocalAddress* component.
Mib	no_mib

ATTRIBUTE Rtr Cpp IsolatedDa averageFlowRate

Access	Read only

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Description	This attribute indicates the average flow rate calculated over the grace period.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

COMPONENT Rtr MemoryManagement (Mm)

Groups	GROUP Rtr Mm Provisioned (Prov) GROUP Rtr Mm Operational (Oper)
Scope	Application
Description	*Vr/<string> MemoryManagement* *Rtr/<string> MemoryManagement* *Rtr/<string> Vrf/<string> MemoryManagement* This component represents a mechanism to control and monitor dynamic memory usage within a *VirtualRouter*, *Router*, or *VpnRouteForwarder*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Mm Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisioned attributes for the *MemoryManagement* component.
Mib	no_mib

ATTRIBUTE Rtr Mm vrMaxHeapSpace (vrMax)

Access	Read and write
Description	This attribute specifies the maximum percentage of the total system heap space that is allowed for use by this *VirtualRouter*, *Router*, or *VpnRouteForwarder*. Attempted memory allocation beyond this limit will cause a *VirtualRouter* or *VpnRouteForwarder* to automatically lock. If memory allocation for a *Router* exceeds this limit, an alarm is raised but the component is not locked.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	100

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GROUP Rtr Mm Operational (Oper)

Properties	Operational
Description	This group contains all operational attributes for the *MemoryManagement* component.
Mib	no_mib

ATTRIBUTE Rtr Mm vrHeapSpaceBytesAllocated (vrBytesAlloc)

Access	Read only
Description	This attribute indicates the number of bytes of system dynamic memory which has been allocated to this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Mm vrHeapSpaceAllocated (vrAlloc)

Access	Read only
Description	This attribute indicates the percentage of the maximum permitted heap space for this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component (as specified by *vrMaxHeapSpace* attribute) which is currently allocated.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Rtr DifferentiatedServicesDomain (Dsd)

Instance	multiservice (ms) classSelector (cs) assuredForwarding (af) packetVoice (pv) wirelessUmts (umts) custom (cu)
Groups	GROUP Rtr Dsd LocalSourcePackets (Local)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> Vrf/<string> DifferentiatedServicesDomain/<enum>* This component and its supcomponents represent a Differentiated Services administration domain for traffic management and congestion

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control.

The *DifferentiatedServicesDomain* component instance identifies the domain type. The following domain types are available:

Multiservice (ms)
ClassSelector (cs)
AssuredForwarding (af)
PacketVoice (pv)
WirelessUmts (umts)
Custom (cu)

The *DifferentiatedServicesDomain* component is an optional subcomponent of the *Router*, *VpnRouteForwarder* and *VirtualRouter* components.

The *Router*, *VpnRouteForwarder*, and *VirtualRouter* components can have at most one *DifferentiatedServicesDomain* subcomponent.

If a *Router* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *Router* operates as by default as follows. IP packets with Differentiated ServiceCode Point (DSCP) field value 48, and MPLS packets with Experimental Bits (EXP) field value 6, are treated with Per Hop Behavior (PHB) CS6; other IP and MPLS packets are treated with PHB DF for default forwarding. Locally generated routing control packets are treated with PHB CS6; other locally generated packets are treated with PHB DF. Per Hop Behaviors CS6 and DF are configured to provide the following values of scheduling class for 8, 4, 3, 2 queues, drop precedence, and EXP for MPLS encapsulation: (5, 2, 2, 0, low, 6) and (0, 0, 0, 0,, high, 0), respectively. This is equivalent to the default the configuration of the *DifferentiatedServicesDomain/custom* component instance.

If a *VpnRouteForwarder* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *VpnRouteForwarder* component uses the *DifferentiatedServicesDomain* configuration of the *Router.*

Mib: no_mib

Opt. Subcomp.:
COMPONENT Rtr Dsd MplsServiceMap (MplsMap)
COMPONENT Rtr Dsd VpnDscpMap (VpnDscpMap)
COMPONENT Rtr Dsd VpnCosMap (VpnCosMap)
COMPONENT Rtr Dsd PerHopBehavior (Phb)
COMPONENT Rtr Dsd TrafficClass (Tc)

Common Verbs:
Help
List
Display
Add
DELete

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GROUP Rtr Dsd LocalSourcePackets (Local)

Properties	Provisioned
Description	This group contains provisioned attributes of the *DifferentiatedServicesDomain* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd phbGeneralSource (phbG)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is not used for network routing control. For a locally-generated IP packet that is not used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value. For a locally-generated ICMP echo request packet, the DSCP field is overridden by the *-tos* or *-dscp* option of the *Ping* command. For a locally-generated ICMP echo reply packet, the DSCP field is set to the DSCP value contained in the IP header of the received request packet. In any case, the forwarding behavior of the ICMP packet controlled by the *PerHopBehavior* component instance that is equal to value of the DSCP field.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5

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	cs6 cs7
Default	df

ATTRIBUTE Rtr Dsd phbRoutingSource (phbR)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is used for network routing control. For a locally generated IP packet that is used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	cs6

ATTRIBUTE Rtr Dsd linkToVpnDscpMap (vpnMap)

Access	Read and write
Description	This attribute specifies a *VpnDscpMap* component instance that is used to translate the value of the DSCP field in an IP packet forwarded by a customer Virtual Router (cVr) to the value of the DSCP field in the IP header that encapsulates the packet when it is forwarded by a Virtual Connection Gateway (VCG).

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If no *VpnDscpMap* component is specified, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

This attribute is relevant only to a VR configured as a customer router in an IP VPN (RFC2764) network.

Mib no_mib

Values Link (Service, linkToVpnDscpMapUsers)

Default No default

COMPONENT Rtr Dsd MplsServiceMap (MplsMap)

Instance 0

Scope Application

Description *Vr/<string> Dsd/<enum> MplsServiceMap/<n>*
Rtr/<string> Dsd/<enum> MplsServiceMap/<n>

The subcomponents of the *MplsServiceMap* component specify mappings used to control how MPLS packets are forwarded over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The *MpslServiceMap/0* subcomponent instance is added automatically to a *DifferentiatedServicesDomain* subcomponent being added to a *Router* component where the *Ldp* subcomponent is already activated.

The *MpslServiceMap/0* subcomponent instance is not allowed under a *DifferentiatedServicesDomain* component whose immediate parent is a *VirtualRouter* component or a *VirtualRouteForwarder* component.

Mib no_mib

Opt. Subcomp. COMPONENT Rtr Dsd MplsMap ExperimentalBitsMap (ExpMap)
COMPONENT Rtr Dsd MplsMap PerHopBehaviorMap (PhbMap)
COMPONENT Rtr Dsd MplsMap MarkingPerformance

Common Verbs
- Help
- List
- Display
- Add
- DELete

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COMPONENT Rtr Dsd MplsMap ExperimentalBitsMap (ExpMap)

Instance	0 1 2 3 4 5 6 7
Groups	GROUP Rtr Dsd MplsMap ExpMap Provisioned (Prov) GROUP Rtr Dsd MplsMap ExpMap Operational (Oper)
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>* *Rtr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>* This component specifies a mapping from a three-bit Experimental (EXP) field value in an MPLS label to a *DifferentiatedServicesDomain PerHopBehavior* component instance value. This mapping controls how an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value is treated when the packet is forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The *MplsServiceMap* component must have eight *ExperimentalBitMap* subcomponents, each with a unique instance value in the range from **0** to **7**. These subcomponents are added automatically when the *MplsServiceMap* component is created.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Dsd MplsMap ExpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *ExperimentalBitsMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd MplsMap ExpMap perHopBehavior (phb)

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Access	Read and write
Description	This attribute specifies the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The value of this attribute must be equal to an exisiting *DifferentiatedServicesDomain PerHopBehavior* component instance value. A default value is set automatically according to a function of the *ExperimentalBitsMap* and *DifferentiatedServicesDomain* component instance values when the *ExperimentalBitsMap* component is created.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	No default

GROUP Rtr Dsd MplsMap ExpMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ExperimentalBitsMap* component.
Mib	no_mib

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ATTRIBUTE Rtr Dsd MplsMap ExpMap **operPerHopBehavior (operPhb)**

Access — Read only

Description — This attribute indicates the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *perHopBehavior* provisioned attribute value.

Mib — no_mib

Values — Decimal (0..63)
df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default — No default

ATTRIBUTE Rtr Dsd MplsMap ExpMap **trafficClass (tc)**

Access — Read only

Description — This attribute indicates the *TrafficClass* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *trafficClass* provisioned attribute

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value of the *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib: no_mib

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Rtr Dsd MplsMap ExpMap dropPrecedence (dp)

Access: Read only

Description: This attribute indicates the drop precedence value used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an LSP where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *dropPrecedence* provisioned attribute value of *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib: no_mib

Values:
low
medium
high

Default: No default

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COMPONENT Rtr Dsd MplsMap PerHopBehaviorMap (PhbMap)

Instance	0
	1
	2
	3
	4
	5
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df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

GROUP Rtr Dsd MplsMap PhbMap Provisioned (Prov)
GROUP Rtr Dsd MplsMap PhbMap Operational (Oper)

Scope

Application

Description

Vr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>
Rtr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>

This component specifies a mapping from a *PerHopBehavior* component instance value to a three-bit Experimental (EXP) field value.

This mapping controls how the EXP field in an MPLS label is marked when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

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The *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat the packet prior to label encapsulation is used to select the EXP value for the label. If the *PerHopBehavior* component instance value used to treat the packet is not included among the existing *PerHopBehaviorMap* component instances, then the EXP value indicated by the *PerHopBehaviorMap* component whose instance is equal to 0 is used.

Each *PerHopBehaviorMap* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehaviorMap* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32 ,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehaviorMap* subcomponent of the *MplsServiceMap* must have a unique instance value. A *PerHopBehaviorMap* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehaviorMap* subcomponents with instance values equal to the *DifferentiatedServicesDomain PerHopBehavior* subcomponent instance values is added automatically when the *MplsServiceMap*

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component is created.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Dsd MplsMap PhbMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PerHopBehaviorMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd MplsMap PhbMap experimentalBits (exp)

Access	Read and write
Description	This attribute specifies a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation. This attribute is set automatically to a default value according to a function of the *PerHopBehaviorMap* and *DifferentiatedServicesDomain* component instance values when the *PerHopBehaviorMap* component is created.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

GROUP Rtr Dsd MplsMap PhbMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehaviorMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd MplsMap PhbMap operExperimentalBits (operExp)

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Access	Read only
Description	This attribute indicates a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation. The value of this attribute is equal to the *experimentalBits* provisioned attribute.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Dsd MplsMap PhbMap **operExperimentalBitsAlternative (operExpAlt)**

Access	Read only
Description	This attribute is similar to the *operExperimentalBits* operational attribute, except that it used only on PQC-based access FPs with ASIC Version 2.0 when an IP packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) via a PQC-based trunk FP. In such situations only, the value of this attribute, instead of the *operExperimentalBits* operational attribute value, is used to mark the Experimental (EXP) field of the MPLS label. If the *MplsServiceMap* does not have a *MarkingPerformance* subcomponent, then the value of this attribute is equal to the *experimentalBits* provisioned attribute; otherwise the value of this attribute is determined as explained in the next paragraph. If "***x***" is the *schedulingClass4Queues* operational attribute value of the *DifferentiatedServicesDomain PerHopBehavior* component whose instance value is equal to the *PerHopBehaviorMap* component instance value, then the *PerHopBehaviorMap experimentalBitsAlternative* operational attribute value is equal to the "***x***th" element of the *MarkingPerformance experimentalBitsAlternative* provisioned attribute.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

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COMPONENT Rtr Dsd MplsMap MarkingPerformance

Groups	GROUP Rtr Dsd MplsMap MarkingPerformance Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance* *Rtr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance* This subcomponent is added to the *MplsServiceMap* component to enable high performance MPLS label encapsulation on some PQC-based ingress access FPs . IP packets that are forwarded from access FPs with PQC-ASIC Version 2.0 via PQC-based trunk FPs (any ASIC version) over an MPLS Label Switched Path (LSP) where the *MplsServiceMap* is applied are affected. Adding this component to the *MplsServiceMap* improves IP packet throughput on the affected access FPs but restricts how the three-bit Experimental (EXP) field of MPLS labels are marked, as explained in the description of the *operExperiementalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* component. Without the *MarkingPerformance* subcomponent, IP packets after being routed in hardware are encapsulated with MPLS labels by a software-assisted datapath that does not restrict how the EXP field of MPLS labels are marked. The *MarkingPerformance* subcomponent is added automatically to a *MpslServiceMap* subcomponent being added to a *DifferentiatedServicesDomain* component. This ensures that the high performance MPLS label encapsulation data path is used by default.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Dsd MplsMap MarkingPerformance Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *MarkingPerformance* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd MplsMap MarkingPerformance expermentalBitsAlternative (expAlt)

Access	Read and write

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Description	This attribute is an array of four values that specifies a mapping of scheduling class values for four queues to three-bit Experimental (EXP) field values for marking MPLS labels. This array controls the value of the *operExperimentalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* components, as explained in the description of that attribute. Each element of this attribute is set automatically to a default value according to a function of the *DifferentiatedServicesDomain* component instance value and the element index when the *MarkingPerformance* component is created. The default values are listed below. Default values for all domains, except *assuredForwarding (af)* and *custom(cu)* : --- *schedulingClass4Queues experimentalBitsAlternative* --- *3* ***5*** *2* ***6*** *1* ***1*** *0* ***0*** Default values for *assuredForwarding (af)* domain: --- *schedulingClass4Queues experimentalBitsAlternative* --- *3* ***7*** *2* ***5*** *1* ***3*** *0* ***0*** Default values for *custom(cu)* domain: --- *schedulingClass4Queues experimentalBitsAlternative* --- *3* ***0*** *2* ***6*** *1* ***0*** *0* ***0***
Mib	no_mib
Vector of	Decimal (0..7)
Index	Decimal (0..3)
Default	No default

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COMPONENT Rtr Dsd VpnDscpMap (VpnDscpMap)

Instance	String (1..20, ASCII)
Groups	GROUP Rtr Dsd VpnDscpMap Provisioned (Prov)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnDscpMap/<string>*

This component provides a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network.

When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network.

If the customer virtual router (cVr) has a *DifferentiatedServicesDomain* subcomponent where the *linkToVpnDscpMap* attribute is set, then the value of DSCP field in the IP packet forwarded by the customer Virtual Router (cVr) is translated by the mapping specified by the *assignedPhb* attribute of the associated *VpnDscpMap* to a DSCP value that is marked in the carrier IP header. If the customer *DifferentiatedServicesDomain linkToVpnDscpMap* attribute is not set, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnDscpMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***. It can be linked only to the *linkToVpnDscpMap* attribute of the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***customer***.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *DiffServDomain* component is not allowed to have more than eight *VpnDscpMap* subcomponents.

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	No more than one *DiffServDomain* component instance is allowed to have *VpnDscpMap* subcomponents
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Dsd VpnDscpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnDscpMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd VpnDscpMap linkToVpnDscpMapUsers (users)

Access	Read and write
Description	This attribute specifies all the customer virtual routers that use the *VpnDscpMap* component.
Mib	no_mib
List of	Link (Service, linkToVpnDscpMap)
List Size	256
Default	No default

ATTRIBUTE Rtr Dsd VpnDscpMap assignedPhb (phb)

Access	Read and write
Description	This attribute specifies a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnDscpMap* component for more information.

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Mib	no_mib
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Rtr Dsd VpnCosMap (VpnCosMap)

Groups	GROUP Rtr Dsd VpnCosMap Provisioned (Prov)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnCosMap* This component provides a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network. If the customer virtual router (cVr) does not have a *DifferentiatedServicesDomain* subcomponent and the Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain VpnCosMap* component, then the IP CoS value assigned to the packet by the customer virtual router is translated by the mapping specified by the *assignedPhb* attribute of the *VpnCosMap* to a DSCP value that is marked in the carrier

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IP header. If the *DifferentiatedServicesDomain* of the Virtual Connection Gateway (VCG) does not have a *VpnCosMap* subcomponent, then the value of the DSCP field in the carrier IP header is set to ***0*** unless the customer header DSCP value is ***48*** (which corresponds to PHB CS6 for IP network control packets). In the latter case the carrier header DSCP value is set to ***48*** also.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnCosMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***.

The *VpnCosMap* component is used to assist the migration of an IP VPN network without *DifferentiatedServicesDomain* components to an IP VPN network where every customer Virtual Router (cVr) and Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain* component. The *VpnCosMap* components can be removed once the CoS to DiffServ network migration is completed.
The VpnCosMap component controls how the DSCP field in the carrier IP header is marked when IP packets are forwarded by the Virtual Connection Gateway (VCG) only if the operational value of the Vr trafficManagementMode (tmMode) attribute for the customer VirtualRouter component is set to hybrid .

Mib no_mib

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Dsd VpnCosMap **Provisioned (Prov)**

Properties Provisioned

Description This group contains the provisionable attributes of the *VpnCosMap* component.

Mib no_mib

ATTRIBUTE Rtr Dsd VpnCosMap **assignedPhb (phb)**

Access Read and write

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Description	This attribute specifies a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnCosMap* component for more information.
Mib	no_mib
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..3)
Default	(0: 0, 1: 0, 2: 0, 3: 0)

COMPONENT Rtr Dsd PerHopBehavior (Phb)

Instance	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

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60
61
62
63
df
ef

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af11
af12
af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

GROUP Rtr Dsd Phb Provisioned (Prov)
GROUP Rtr Dsd Phb Operational (Oper)
GROUP Rtr Dsd Phb IpOperational (IpOper)

Scope

Application

Description

Vr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Vrf/<string> Dsd/<enum> PerHopBehavior/<phb>

The attributes of the *PerHopBehavior* component specify per-packet traffic management parameters that control how individual packets are forwarded.

A packet is associated with a *PerHopBehavior* component instance by a packet classification mechanism. For IP packets, the associated *PerHopBehavior* component instance is equal to the value of the six-bit Differentiated Services Code Point (DSCP) field in the IP header. For MPLS packets forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where an *MplsServiceMap* component is applied, the associated *PerHopBehavior* component instance is equal to value of the *perHopBehavior* attribute of the *MplsServiceMap ExperimentalBitsMap* component whose instance is equal to the value of the three-bit Experimental (EXP) field of the MPLS label.

If the *PerHopBehavior* component instance associated with a packet is not included among the existing *PerHopBehavior* subcomponents of the *DifferentiatedServicesDomain*, then the packet is treated according to the *PerHopBehavior* component whose instance is equal to 0.

Each *PerHopBehavior* component instance is equal to a decimal value in

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the range from 0 to 63. The following pairs of *PerHopBehavior* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehavior* subcomponent of the *DifferentiatedServicesDomain* must have a unique instance value. A *PerHopBehavior* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehavior* subcomponents is added automatically when the *DifferentiatedServicesDomain* component is created. The members of this set is a function of the *DifferentiatedServicesDomain* component instance as indicated below.

Multiservice (ms):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, EF, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22, AF23, AF11, AF12, AF13, DF

ClassSelector (cs):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, CS0

AssuredForwarding (af):
CS6, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22 AF23, AF11, AF12, AF13, DF

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Packet Voice (pv):
CS7, CS6, CS5, CS1, EF, AF11, AF12, AF13, DF

WirelessUmts (umts):
CS7, CS6, CS1, EF, AF31, AF32, AF33, AF21, AF22, AF23, DF

Custom (cu):
CS6, DF

Mib no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Dsd Phb Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes of the *PerHopBehavior* component.

Mib no_mib

ATTRIBUTE Rtr Dsd Phb trafficClass (tc)

Access Read and write

Description This attribute specifies the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that specify the same packet scheduling characteristics.

This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PeHopBehavior trafficClass

---*CS7 (56)*

critical
CS6 (48) ***network***
EF (46) ***premium***
CS5 (40) ***premium***
CS4 (32) ***platinum***
AF41 (34) ***platinum***
AF42 (36) ***platinum***

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AF43 (38)	***platinum***
CS3 (24)	***gold***
AF31 (26)	***gold***
AF32 (28)	***gold***
AF33 (30)	***gold***
CS2 (16)	***silver***
AF21 (18)	***silver***
AF22 (20)	***silver***
AF23 (22)	***silver***
CS1 (8)	***bronze***
AF11 (10)	***bronze***
AF12 (12)	***bronze***
AF13 (14)	***bronze***
CS0, DF (0)	***standard***
all others	***standard***

The value of this attribute must be equal to an existing *TrafficClass* subcomponent instance of the *DifferentiatedServicesDomain*.

If the *PerHopBehavior* component instance is ***0***, ***cs0***, or ***df***, then the value of this attribute must be ***standard***.

Mib: no_mib

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Rtr Dsd Phb dropPrecedence (dp)

Access: Read and write

Description: This attribute specifies the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

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This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PerHopBehavior *dropPrecedence*

CS7 (56) ***low***
CS6 (48) ***low***
EF (46) ***low***
CS5 (40) ***low***
CS4 (32) ***low***
AF41 (34) ***low***
AF42 (36) ***medium***
AF43 (38) ***high***
CS3 (24) ***low***
AF31 (26) ***low***
AF32 (28) ***medium***
AF33 (30) ***high***
CS2 (16) ***low***
AF21 (18) ***low***
AF22 (20) ***medium***
AF23 (22) ***high***
CS1 (8) ***low***
AF11 (10) ***low***
AF12 (12) ***medium***
AF13 (14) ***high***
CS0, DF (0) ***high***
all others ***high***

Mib no_mib

Values low
medium
high

Default No default

GROUP Rtr Dsd Phb Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *PerHopBehavior* component that control the relative forwarding behaviors of packets.

Mib no_mib

ATTRIBUTE Rtr Dsd Phb operTrafficClass (operTc)

Access Read only

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Description	This attribute indicates the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that indicate the same packet scheduling characteristics. The value of this attribute is equal to value of the *trafficClass* provisioned attribute of the *PerHopBehavior* component.
Mib	no_mib
Values	critical network premium platinum gold silver bronze standard
Default	No default

ATTRIBUTE Rtr Dsd Phb schedulingClass8Queues (sc8q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Dsd Phb schedulingClass4Queues (sc4q)

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Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Dsd Phb schedulingClass3Queues (sc3q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass3Queues* operational attribute of the *TrafficClass*

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component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib — no_mib

Values — Decimal (0..2)

Default — No default

ATTRIBUTE Rtr Dsd Phb schedulingClass2Queues (sc2q)

Access — Read only

Description — This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass2Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib — no_mib

Values — Decimal (0..1)

Default — No default

ATTRIBUTE Rtr Dsd Phb connectionClass (cos)

Access — Read only

Description — This attribute indicates the connection class value in the range from ***0*** to ***3*** that is associated with the Layer 2 connection used to forward a packet that uses the *PerHopBehavior* component instance when it is transmitted at an ATM or Frame Relay interface that has four Layer 2 connections, each with a different connection class value, to the next hop router.

See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information per-packet selection of egress connections.

The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass*

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component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib no_mib

Values Decimal (0..3)

Default No default

ATTRIBUTE Rtr Dsd Phb operDropPrecedence (operDp)

Access Read only

Description This attribute indicates the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

The value of this attribute is equal to value of the *dropPrecedence* provisioned attribute of the *PerHopBehavior* component.

Mib no_mib

Values low
medium
high

Default No default

GROUP Rtr Dsd Phb IpOperational (IpOper)

Properties Operational

Description This group contains *PerHopBehavior* operational attributes that pertain to IP packets only.

Mib no_mib

ATTRIBUTE Rtr Dsd Phb dscpDecimal (dscp)

Access Read only

Description This attribute indicates the decimal value of the six-bit Differentiated Services Code Point (DSCP) field of an IP packet that uses the *PerHopBehavior* component instance.

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Mib	no_mib
Values	Decimal (0..63)
Default	No default

ATTRIBUTE Rtr Dsd Phb tosDecimal (tos)

Access	Read only
Description	This attribute indicates the decimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Dsd Phb typeOfServiceFieldHex (hex)

Access	Read only
Description	This attribute indicates the hexadecimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	no_mib
Values	Hex (H.0..H.ff)
Default	No default

COMPONENT Rtr Dsd TrafficClass (Tc)

Instance	critical network premium platinum gold silver bronze standard
Groups	GROUP Rtr Dsd Tc Provisioned (Prov) GROUP Rtr Dsd Tc Operational (Oper)
Scope	Application

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Description	*Vr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Vrf/<string> Dsd/<enum> TrafficClass/<tc>* The attributes of the *TrafficClass* component specify per-packet traffic management parameters that control how individual packets are forwarded. A packet is associated with a *TrafficClass* component instance according to the *trafficClass* provisioned attribute of the *PerHopBehavior* component instance the packet is using. See the description of the *PerHopBehavior* component for an explanation of how *PerHopBehavior* component instances are associated with packets. The *DifferentiatedServicesDomain* must have a *TrafficClass/standard* subcomponent instance. Each of the *TrafficClass* component instances should be referenced by at least one of the *DifferentiatedServicesDomain PerHopBehavior* component instances.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Dsd Tc **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioned attributes of the *TrafficClass* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd Tc **schedulingClass8Queues (sc8q)**

Access	Read and write
Description	This attribute specifies a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay

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tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

TrafficClass *schedulingClass8Queues*

---

critical ***7***
premium ***6***
network ***5***
platinum ***4***
gold ***3***
silver ***2***
bronze ***1***
standard ***0***

Mib no_mib

Values Decimal (0..7)

Default No default

ATTRIBUTE Rtr Dsd Tc **schedulingClass4Queues (sc4q)**

Access Read and write

Description This attribute specifies a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at the interface where the packet is transmitted. Per-packet selection of egress connections is supported only if these conditions are all true:

i) for the *Vr* component, the value of the associated *mediaType* attribute under the *IpPort* component is ***frameRelay***, ***atmMpeLlcEncap***, or

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atmMpeVcEncap; for *Router* and *Vrf*, the media associated with the interface is *AtmMpe* or *IpoDlci*.
ii) more than one Layer 2 connection is configured to the next hop IP router, and
iii) each connection is configured with a different connection class value.

Normally the packet is transmitted on the connection whose connection class is equal to the *schedulingClass4Queues* value given to the packet. If that connection does not exist, then the connection having the next lower connection class is used. If that connection does not exist also, then the connection having the next higher connection class is used.

Locally generated IP multicast and IP broadcast packets are not eligible for per-packet selection of egress connections. Each of these packets is copied and transmitted individually on each of the available connections to the next hop IP router.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte* the connection class is specified by the *ipCos* attribute of the *StaticDlci* and *DynamicDlciDef* subcomponents. For *IpDlciGroup* and *IpoDlci* the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent.

If each Layer 2 connection is configured to provide different policing and scheduling characteristics, then the forwarding behaviors of IP and MPLS packets are differentiated as they transit through the Layer 2 network. In general, the scheduling characteristics of the connections should be configured to be better for numerically greater connection class values. For example, if four *AtmConnection* components are associated with *AtmIf* components configured for ATM service classes ***UBR***, ***nrtVBR***, ***rtVBR***, and ***CBR***, then the *ipCos* attributes of the *AtmConnection* components should be either ***0***,***1***,***2***, and ***3***, respectively, or ***0***,***1***,***3***, and ***2*** respectively.

The *schedulingClass4Queues* attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

Default values for all domains, except *assuredForwarding (af)*:

TrafficClass	*schedulingClass4Queues*
critical	***2***
premium	***3***
network	***2***
platinum	***1***
gold	***1***
silver	***1***
bronze	***1***
standard	***0***

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Default values for *assuredForwarding (af)* domain only:

TrafficClass	*schedulingClass4Queues*
critical	***2***
premium	***3***
network	***2***
platinum	***3***
gold	***2***
silver	***1***
bronze	***0***
standard	***0***

Mib no_mib

Values Decimal (0..3)

Default No default

GROUP Rtr Dsd Tc Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *TrafficClass* component.

Mib no_mib

ATTRIBUTE Rtr Dsd Tc operSchedulingClass8Queues (operSc8q)

Access Read only

Description This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component.

Mib no_mib

Values Decimal (0..7)

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Default	No default

ATTRIBUTE Rtr Dsd Tc **operSchedulingClass4Queues (operSc4q)**

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component.
Mib	no_mib
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Dsd Tc **operSchedulingClass3Queues (operSc3q)**

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

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The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3 or 2***, then the *operSchedulingClass3Queues* attribute value is ***2***; otherwise both values are equal.

Mib	no_mib
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Rtr Dsd Tc **operSchedulingClass2Queues (operSc2q)**

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3***, then the *operSchedulingClass2Queues* attribute value is ***1***; otherwise it is ***0***.
Mib	no_mib
Values	Decimal (0..1)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Rtr

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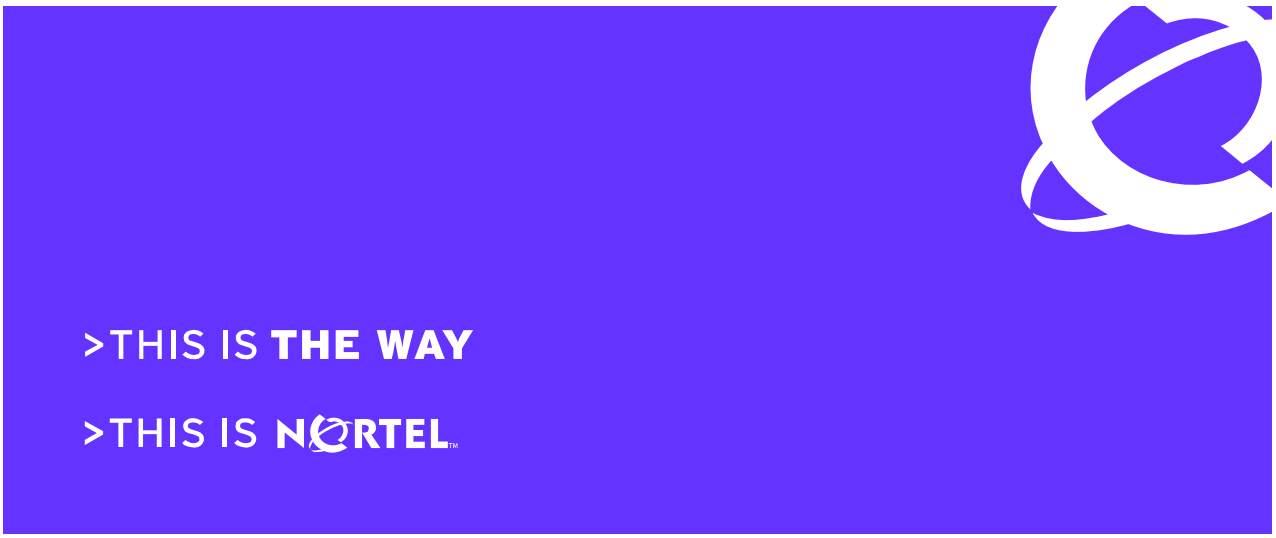

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Shelf

NN10600-060

Document status: Standard
Document issue: 7.2S1
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COMPONENT Shelf

Groups	GROUP Shelf Provisioned (Prov) GROUP Shelf Operational (Oper)
Scope	Device
Description	*Shelf* There is one *Shelf* component per module. It is the parent component of the hardware components (which include *Card* and *Bus* components).
Mib	BaseShelf
Subcomponents	COMPONENT Shelf Test
Opt. Subcomp.	COMPONENT Shelf Card
Dyn. Subcomp.	COMPONENT Shelf Bus COMPONENT Shelf FabricCard
Common Verbs	Help List Display

VERB RESET Shelf

Impact	Service
Description	This command is used to simultaneously reset all processor cards on the shelf. The system behaves as if the shelf had just been powered on.

VERB RESTART Shelf

Impact	Service
Description	This command restarts all processor cards on the shelf. A processor card restart reinitializes the software, making the card behave as if it has just been reloaded.

GROUP Shelf Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the provisionable attributes for the *Shelf* component.
Mib	BaseShelf

ATTRIBUTE Shelf commentText (text)

Access	Read and write
Description	This is an arbitrary string that can be used to specify the location of the module. It is not used by the system.
Mib	BaseShelf
Values	String (0..80, ASCII)
Default	""

ATTRIBUTE Shelf cpEquipmentProtection

Access	Read and write
Description	This attribute specifies the type of Equipment Protection support provided by a spared CP configuration. The valid values are: ***hot***, enables delivery of provisioning data to standby CP and on CPSO allows switching to the current view. ***cold***, the default value which supports switchover to the committed view. When the attribute is set to ***hot***, applications which provide hot or warm CP based services, receive the provisioning data during *activate prov.* The cold CP based services receive the provisioning data during CP switchover, when the standby CP is taking over as active. On CPSO, hot and warm services are activated first followed by the cold services. Hence the activation time of cold services is potentially extended which will increase the service outage, compared to when this attribute is set to ***cold***. It is important to note that this attribute does not make any service warm or hot; instead, CP based services are provided the ability to reduce or eliminate call-setup outage due to a CPSO and to ensure stable calls are unaffected by a CPSO. The standby CP will be reset when the value of this attribute is changed. To set this attribute to ***hot***, the *maxNumberJournalFiles* attribute under the *ProvisioningSystem* component must be set to a value other than ***none***.
Mib	BaseShelf
Values	cold hot
Default	cold

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ATTRIBUTE Shelf repeatFanAlarm

Access	Read and write
Description	On the Nortel Networks Multiservice Switch 15000 and the Nortel Networks Multiservice Switch 20000, there are three fans to cool the shelf. Because of a hardware limitation, it is not possible to determine how many fans are affected upon fan failure. Such fan failures are reported through a 7012 0051 alarm. This attribute specifies whether the 7012 0051 alarm should be set once or repeated on a regular basis: ***on*** - specifies that the fan alarm should be re-issued every eight hours until the alarm is cleared. Normally, the same alarm is never re-issued in order to minimize the number of alarms generated by a node. Nonetheless, selecting this option helps to compensate for the hardware limitation by providing a regular reminder (once per eight hour shift) that one or possibly more fans have failed on this node. In addition, if the alarm condition remains for more than 24 hours, the alarm severity is increased. That is, the first three alarms are issued with a severity of MAJOR, while all subsequent alarms have a severity of CRITICAL. ***off*** - specifies that the fan alarm be issued only once upon failure. This attribute is not applicable and is therefore ignored on the Nortel Networks Multiservice Switch 7400.
Mib	BaseShelf
Values	off on
Default	off

GROUP Shelf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Shelf* component.
Mib	BaseShelf

ATTRIBUTE Shelf hardwareFailures (hwFailures)

Access	Read only
Description	This attribute indicates which type of components have failed.The hardware's fault detection system can report the following kinds of component failures: card, power converter, cooling unit, terminator card, fan, input power feed or fabric card failures.

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card - The card has failed.
powerConverter - The power converter has failed.
coolingUnit - The cooling unit has failed.
terminatorCard - The terminator card has failed.

The following types only apply to a fabric-based shelf:
fan - The fan has failed.
inputPowerFeed - The input power feed has failed.
fabricCard - The fabric card has failed.
macAddressCard - The MAC address card has failed.
alarmBitsCard - The alarm/bit card has failed.

Mib	BaseShelf
Set of	card powerConverter coolingUnit terminatorCard fan powerSupply fabricCard macAddressCard alarmBitsCard
Default	No default

ATTRIBUTE Shelf numberOfSlots (slots)

Access	Read only
Description	This attribute specifies the number of slots for this shelf.
Mib	BaseShelf
Values	Decimal (1..16)
Default	No default

ATTRIBUTE Shelf shelfType

Access	Read only
Description	This attribute indicates the shelf type: ***busBasedShelf*** - bus-based backplane shelf. ***fabricBasedShelf -*** fabric-based backplane shelf. ***fabricBasedV2Shelf*** - dual-speed configurable fabric-based backplane shelf.
Mib	BaseShelf
Values	busBasedShelf fabricBasedShelf fabricBasedV2Shelf
Default	No default

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ATTRIBUTE Shelf backplaneOperatingMode (backplaneMode)

Access	Read only
Description	This attribute indicates the current backplane operating mode. On a fabric-based shelf: ***noFabric*** - No fabric is in service now. ***singleFabricX*** - The shelf is running on fabric X only. ***singleFabricY*** - The shelf is running on fabric Y only. ***dualFabric*** - The shelf is running on fabric X and fabric Y. ***dualFabricDegraded*** - The shelf is running on fabric X and fabric Y with some fabric ports disabled. On a bus-based shelf: ***noBus*** - No bus is in service now. ***singleBusX*** - The shelf is running on bus X only. ***singleBusY*** - The shelf is running on bus Y only. ***dualBus*** - The shelf is running on bus X and bus Y.
Mib	BaseShelf
Values	noBus singleBusX singleBusY dualBus noFabric singleFabricX singleFabricY dualFabric dualFabricDegraded
Default	No default

ATTRIBUTE Shelf slotConfiguration (sConf)

Access	Read only
Description	This attribute indicates the slot configuration of the shelf with its associated fabric cards. A value of ***40G*** indicates a configuration in which all slots can accommodate 2.5 Gbit/s cards. A value of ***70G*** indicates a configuration in which all slots can accommodate 2.5 Gbit/s cards, and where slots 6, 7, 14, and 15 can accommodate 10 Gbit/s cards. A value of ***mismatched*** indicates a shelf where the two fabric cards support different configurations. The mismatched configuration should only occur during in-service upgrades.

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This attribute is not displayed when the *shelfType* attribute has a value of ***busBasedShelf***.

Mib	BaseShelf
Values	mismatched 40G 70G
Default	No default

COMPONENT Shelf Card

Instance	Decimal (0..15)
Groups	GROUP Shelf Card Provisioned (Prov) GROUP Shelf Card OsiState (State) GROUP Shelf Card Operational (Oper) GROUP Shelf Card Properties (Prop) GROUP Shelf Card Utilization (Util) GROUP Shelf Card Capacity (Cap)
Scope	Device
Description	*Shelf Card/n* The *Card* component is a subcomponent of the *Shelf* component. There are a maximum of 16 *Card* components defined, one corresponding to each physical card slot. This is necessary in order to be able to reflect which processor card is present in each slot at any time. For a shelf that does not contain 16 slots, the *Card* components only need to be defined for each of their physical card slots. This can be accomplished via the StartUp initial provisioning system. It is possible to add a *Card* component since it may be desirable to move a CP to a shelf that contains more physical card slots. This CP move would result in adding the provisioning information associated with the other processor cards instead of starting over.

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It is not possible to delete a *Card* component, but its type can be changed to "None".

Mib	BaseShelf
Subcomponents	COMPONENT Shelf Card Diagnostics (Diag)
Dyn. Subcomp.	COMPONENT Shelf Card BusTap COMPONENT Shelf Card Test COMPONENT Shelf Card FabricPort COMPONENT Shelf Card SparedServices (SpServ) COMPONENT Shelf Card DaughterCard (Dcard) COMPONENT Shelf Card HwDiagnostics (HwDiag) COMPONENT Shelf Card Fpga
Common Verbs	Help List Display Add Unlock

VERB RESET Shelf Card

Impact	Service
Description	*Reset Shelf Card/n* *Reset -force Shelf Card/n* This command is used to reset a processor card. Resetting a processor card implies: (1) resetting the hardware (as if the card had just been powered on), (2) performing the card's self-tests, and (3) reloading the software (assuming an LP is configured to run on the card). A *Reset* command issued against the CP causes it to reload from the committed provisioning data file. A *Reset* command issued against an FP causes it to reload the same software it was already running. This is the software load that is derived from the provisioning data in the CP's current view (this may or may not be the committed view). **Options:** *-force* If the card number of the active CP is specified, this option causes the reset to occur against the active cp even if the current or edit view differs from the committed view, or if the standby OAM Ethernet port is not available, or if the standby CP is currently loading the committed provisioning data file. Use of this option would cause the loss of data in any unsaved view, and any FPs running uncommitted data would restart. On any card other than the active CP, -force has no meaning.

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VERB RESTART Shelf Card

Impact	Service
Description	*Restart Shelf Card/n* *Restart -force Shelf Card/n* This command is used to restart a processor card. Restarting a processor card causes the software to reinitialize itself and behave as if it had just been reloaded. A *Restart* command issued against a CP causes it to restart using the committed provisioning data. **Options:** *-force* If the card number of the active CP is specified, this option causes the restart to occur against the active CP even if the current or edit view differs from the committed view, or if the standby OAM Ethernet port is not available, or if the standby CP is currently loading the committed provisioning data file. Use of this option would cause the loss of data in any unsaved view, and any FPs running uncommitted data would restart. On any card other than the active CP, -force has no meaning.

VERB Lock Shelf Card

Impact	Service
Description	Lock [-force] [-Test] Shelf Card/n This command is used to lock the processor card. The card is reset and enters the OSI locked administrative state. If any clients are registered for the lock notification of this card then they are notified before resetting the card and the card is reset when it has finished providing service to those clients. Options: -force If this option is present, service to existing clients is terminated and the locked state is entered immediately. -test If this option is present, the card enters the OSI shuttingDown administrative state. While shutting down, the card continues to provide service to the existing clients but rejects any new requests for service. When the card is no longer providing service, it enters the OSI locked administrative state. The options force and test are mutually exclusive.

GROUP Shelf Card **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the Card component.
Mib	BaseShelf

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ATTRIBUTE Shelf Card **cardType (card)**

Access	Read and write
Description	This is the type of card expected in this slot. Specifying a card type here has the effect of configuring a card to run in this slot. A value of ***none*** means that no card is configured to run in this slot.
Mib	BaseShelf
Values	CP V11 V35 DS1 DS1V DS3 E1 E1V E3 none 1pFddiMultiMode (FDDI) 4pTokenRing (TokenRing) 6pEth10BaseT (Ethernet) DS1C E1C 3pE3Atm (E3A) 3pDS3Atm (DS3A) 3pOC3MmAtm (OC3M) 3pOC3SmAtm (OC3S) 3pE1Atm 3pDS1Atm J2MV 4pEthAui 1pFddiSingleMode 1pDS1V 1pE1V 2pJ6MAtm HSSI 8pDS1 CFP1 DEV1 CFP2 DEV2 4pDS1Aal1 4pE1Aal1 1pDS3C IlsForwarder 8pDS1Atm 8pE1Atm 1pE1Mvp 1pDS1Mvp

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1pTTC2mMvp
1pDS3cAal
2pDS3cAal
12mVspAal
2pEth100BaseT (Eth100BaseT)
2pOC3MmAtm2
2pOC3SmAtm2
3pDS3Atm2
3pE3Atm2
CPeD
CPeE
4pOC3SmIrAtm
4pOC3MmAtm
12pDS3Atm
12pE3Atm
1pOC12SmLrAtm
1pE1Mvpe
1pDS1Mvpe
1pTTC2mMvpe
32pDS1Msa
32pDS1MsaMt
32pDS1MsaMtp
32pDS1MsaSt
32pDS1MsaStp
32pE1Aal
1pOC48SmSrAtm
4pDS3Ch
4pDS3ChAtm
1pSTM1ChSmIr
1pSTM1ChSmIrAtm
4pOC12SmIrAtm
4pOC12SmLrAtm
12mPcusp
32pE1Msa
32pE1MsaMt
32pE1MsaMtp
32pE1MsaSt
32pE1MsaStp
1pOC48ChSmIrAtm
16pOC3SmIrAtm
1pOC48SmIrAtm
4pDS3ChAal1
Vsp2
VpnAccelerator
24pBCNW
6mPktServSP
2pGPDsk
WPDS
11pMSW
1pOC48SmSrPos
1pOC48SmIrPos

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2mPktServSP
1pOC48Pos
4pOC12Pos
16pOC3PosAtm
4pDS1Mvpe
4pE1Mvpe
4pOC3ChSmIr
1pOC12SmSrPos
1pOC12SmIrPos
4pOC3SmSrPos
4pOC3SmIrPos
2pSTM1eAtm
VpnXc
2pGeMmSrVsp3
4pGe
2pSTM1eCh
2pOC3ChSmIrVsp3
Vsp2W
34pGeLxTdmVsp
3pGeLxOC3SmIrVsp
6mAppServ
2pVS
2pOC3ChSmIrVsp4
8pEth100BaseT
4pMRPosAtm
4pEth100BaseT
PcuspE2
2pSTM1Ch
8pDS1Msa
8pE1Msa
4pOC3ChSmIrVsp4e
PktServSP2
AppServ2
2pOC3ChSmIrVsp4e

Default: none

ATTRIBUTE Shelf Card sparingConnection (sc)

Access: Read and write

Description: This attribute contains the identification of the 1 for N sparing panel group of connectors to which the card is connected. This identification should coincide with the label located on the sparing panel.

Mib: BaseShelf

Values:
notApplicable
mainA
mainB
mainC
mainD
mainE

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mainF
mainG
mainH
mainI
mainJ
mainK
mainL
mainM
spare

Default notApplicable

ATTRIBUTE Shelf Card commentText (text)

Access Read and write

Description

This is an arbitrary string that can be used to specify the location of the sparing panel.

Mib BaseShelf

Values String (0..80, ASCII)

Default ""

ATTRIBUTE Shelf Card configuredProductCode (cprc)

Access Read and write

Description This attribute specifies the product engineering code of the card. The default value for this attribute is empty. The operator can provision a substring or the complete product engineering code.
When this attribute is provisioned for the active CP, it is validated against the inserted product engineering code of the card during semantic check. Provisioning this attribute for the standy CP might reset the card. When the inserted product engineering code of the card does not match the provisioned value, then that card is put into rejected state.

Mib BaseShelf

Values String (0..12, ASCII)

Default No default

ATTRIBUTE Shelf Card configuredLPs

Access Read only

Description

This is a read-only attribute that shows which LPs are currently configured to run on this card (it is the opposite side of the LP component's *mainCard* and *spareCard* link attributes). Note that there is only one case where more than one LP can be configured to run on a card. This is when the card is configured as an N+1 spare. If this is not the case, the card is

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	configured as a main card or as a 1for1 spare, only one LP can appear in this list.
Mib	BaseShelf
List of	Link
List Size	16
Default	No default

GROUP Shelf Card OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	BaseShelf

ATTRIBUTE Shelf Card adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Shelf Card **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf Card **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf Card **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	BaseShelf
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Shelf Card proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	BaseShelf
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Shelf Card controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	BaseShelf
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Shelf Card alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	BaseShelf
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Shelf Card standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	BaseShelf
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Card unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	BaseShelf
Values	false true
Default	false

GROUP Shelf Card Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes that reflect the current status of the card.
Mib	BaseShelf

ATTRIBUTE Shelf Card failureCause

Access	Read only
Description	This attribute indicates why the card has failed. This attribute is meaningful when the OSI *AvailabilityStatus* attribute is set to ***failed***. ***none*** - The card is operational. ***wrongCardType*** - The wrong card type has been inserted. ***notConfigured*** - The card is not configured. ***cannotLoadSoftware*** - The card can not load software. ***failedSelfTests*** - The card failed itself test. ***notResponding*** - The card is not responding. ***backplaneConnectivityProblem*** - The card is not properly connected to the backplane. ***unsupportedPecCode*** - The card with unsupported PEC code is inserted.

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Mib	BaseShelf
Values	none wrongCardType notConfigured cannotLoadSoftware failedSelfTests notResponding backplaneConnectivityProblem unsupportedPecCode
Default	No default

ATTRIBUTE Shelf Card selfTestFault

Access	Read only
Description	This attribute indicates the result of the processor card's self-tests that were performed when it initially came up.
Mib	BaseShelf
Values	none
Default	No default

ATTRIBUTE Shelf Card sparingConnectionStatus (scstat)

Access	Read only
Description	This attribute indicates if the control signal received from a 1forN sparing panel or a 1for1 sparing panel is properly terminated. ***notApplicable*** - The card is not provisioned as part of a sparing configuration, and is not connected to any sparing panel. ***1for1Ok*** -The card is provisioned correctly for 1for1 sparing and is connected to the active relay of a 1for1 sparing panel. ***1forNOk*** -The card is provisioned correctly for either 1for1 or 1forN sparing and is connected to either the standby or active relay of a 1forN sparing panel. ***unconfirmed*** -The card is provisioned as part of a sparing configuration, but its connection status cannot be determined. This is expected for the standby card in a 1for1 sparing configuration. To determine if the card is connected to a sparing panel, perform a switchover of the LP to see if the card will grab a relay when it is active. If the card has grabbed the relay, the sparing connection status should change from, ***unconfirmed***, to ***1for1Ok*** and the LED on the sparing panel corresponding to that relay should be illuminated. Please note: Performing the switchover will disrupt traffic on the other card and this test should be conducted when no traffic is running on the active card. ***notConnected*** - The card is provisioned as part of a sparing configuration, but is not connected to a sparing panel. Remedial Action: Check the cable connectivity between the card and the

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sparing panel.
incorrectlyConnected - The card is provisioned as part of a sparing configuration, but is connected to the wrong port on a 1forN panel, or is connected to a 1for1 sparing panel while configured for 1forN.
Remedial Action: Connect the cable to the port that was specified by the *sparingConnection* attribute.
inconsistentlyConnected - The card is provisioned as part of a 1forN sparing configuration, but is connected to a sparing panel which is not the same as the other cards sharing the same spare card.
Remedial Action: Ensure all cards that share the same spare card are connected to the same sparing panel.
This value is also used to indicate that two sparing panels with the same sparing panel IDs are being used by cards on the same shelf.
Remedial Action: Replace one of the sparing panels with another panel that has a different sparing panel ID. Sparing panel IDs are assigned at the time of manufacture and cannot be changed by the user.

Mib: BaseShelf

Values:
notApplicable
1for1Ok
1forNOk
unconfirmed
notConnected
incorrectlyConnected
inconsistentlyConnected

Default: No default

ATTRIBUTE Shelf Card hardwareAlarm (hwAlarm)

Access: Read only

Description: This attribute indicates whether and why the card is generating a hardware alarm.

Mib: BaseShelf

Values:
none
batteryFeedFailure

Default: No default

ATTRIBUTE Shelf Card currentLP

Access: Read only

Description:
This attribute indicates which LPs are currently associated with this card. A card configured as a 1forN spare may be associated with more than one LP.

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Mib	BaseShelf
List of	The name of the component
List Size	16
Default	No default

ATTRIBUTE Shelf Card cardUpTime

Access	Read only
Description	This attribute indicates the uptime of a particular card.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Index	days hours minutes seconds useconds
Default	No default

GROUP Shelf Card Properties (Prop)

Properties	Operational
Description	This group contains the operational attributes that specify the fixed characteristics of the card.
Mib	BaseShelf

ATTRIBUTE Shelf Card insertedCardType

Access	Read only
Description	This attribute indicates the type of card that is currently inserted in this slot. A value of ***none*** means that no card is configured to run in this slot. A value of ***unsupported*** means that the card type of the inserted card was not recognized and that this type of card is therefore not supported with the current release of software.
Mib	BaseShelf
Values	CP V11 V35 DS1 DS1V DS3 E1 E1V

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E3
none
1pFddiMultiMode (FDDI)
4pTokenRing (TokenRing)
6pEth10BaseT (Ethernet)
DS1C
E1C
3pE3Atm (E3A)
3pDS3Atm (DS3A)
3pOC3MmAtm (OC3M)
1pOC3MmAtm (OC3P)
3pOC3SmAtm (OC3S)
3pE1Atm
3pDS1Atm
J2MV
4pEthAui
1pFddiSingleMode
1pDS1V
1pE1V
2pJ6MAtm
HSSI
8pDS1
CFP1
DEV1
CFP2
DEV2
4pDS1Aal1
4pE1Aal1
1pDS3C
IlsForwarder
8pDS1Atm
8pE1Atm
1pE1Mvp
1pDS1Mvp
1pTTC2mMvp
1pDS3cAal
2pDS3cAal
12mVspAal
2pEth100BaseT (Eth100BaseT)
2pOC3MmAtm2
2pOC3SmAtm2
3pDS3Atm2
3pE3Atm2
CPeD
CPeE
4pOC3SmIrAtm
4pOC3MmAtm
12pDS3Atm
12pE3Atm
1pOC12SmLrAtm
1pE1Mvpe

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1pDS1Mvpe
1pTTC2mMvpe
32pDS1Msa
32pDS1MsaMt
32pDS1MsaMtp
32pDS1MsaSt
32pDS1MsaStp
32pE1Aal
1pOC48SmSrAtm
4pDS3Ch
4pDS3ChAtm
1pSTM1ChSmIr
1pSTM1ChSmIrAtm
4pOC12SmIrAtm
4pOC12SmLrAtm
12mPcusp
32pE1Msa
32pE1MsaMt
32pE1MsaMtp
32pE1MsaSt
32pE1MsaStp
1pOC48ChSmIrAtm
16pOC3SmIrAtm
1pOC48SmIrAtm
4pDS3ChAal1
Vsp2
VpnAccelerator
24pBCNW
6mPktServSP
2pGPDsk
WPDS
11pMSW
unsupported
1pOC48SmSrPos
1pOC48SmIrPos
2mPktServSP
1pOC48Pos
4pOC12Pos
16pOC3PosAtm
4pDS1Mvpe
4pE1Mvpe
4pOC3ChSmIr
1pOC12SmSrPos
1pOC12SmIrPos
4pOC3SmSrPos
4pOC3SmIrPos
2pSTM1eAtm
VpnXc
2pGeMmSrVsp3
4pGe
2pSTM1eCh

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2pOC3ChSmIrVsp3
Vsp2W
34pGeLxTdmVsp
3pGeLxOC3SmIrVsp
6mAppServ
2pVS
2pOC3ChSmIrVsp4
8pEth100BaseT
4pMRPosAtm
4pEth100BaseT
PcuspE2
2pSTM1Ch
8pDS1Msa
8pE1Msa
4pOC3ChSmIrVsp4e
PktServSP2
AppServ2
2pOC3ChSmIrVsp4e

Default — No default

ATTRIBUTE Shelf Card pmRevisionCode

Access — Read only

Description — This attribute indicates the hardware revision level of the Processor Module (PM).

Mib — BaseShelf

Values — String (0..16, ASCII)

Default — No default

ATTRIBUTE Shelf Card imRevisionCode

Access — Read only

Description — This attribute indicates the hardware revision level of the Interface Module (IM).

Mib — BaseShelf

Values — String (0..16, ASCII)

Default — No default

ATTRIBUTE Shelf Card serialNumber

Access — Read only

Description — This attribute indicates the processor card's serial number.

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Mib	BaseShelf
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Shelf Card activeFirmwareVersion

Access	Read only
Description	This attribute indicates the firmware version of the currently active flash memory bank.
Mib	BaseShelf
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Shelf Card inactiveFirmwareVersion

Access	Read only
Description	This attribute indicates the firmware version of the currently inactive flash memory bank.
Mib	BaseShelf
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Shelf Card productCode (prc)

Access	Read only
Description	This attribute indicates the product ordering code and release of the card.
Mib	BaseShelf
Values	String (0..12, ASCII)
Default	No default

GROUP Shelf Card Utilization (Util)

Properties	Operational
Description	This group contains the operational attributes that specify the processor's utilization levels. When this group exists for an LP component, the attributes are representative of the active card.
Mib	BaseShelf

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ATTRIBUTE Shelf Card **timeInterval**

Access	Read only
Description	This attribute indicates the time period for which the average, minimum, and maximum utilization values are calculated. This attribute is reset to 0 every 15 minutes.
Mib	BaseShelf
Values	Decimal (0..15)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card **cpuUtil**

Access	Read only
Description	This attribute indicates an approximation of the current processor utilization level (expressed as a percentage).
Mib	BaseShelf
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Card **cpuUtilAvg**

Access	Read only
Description	This attribute indicates an average processor utilization level over the specified time period, *timeInterval*. This average is calculated based on one minute CPU utilization averages.
Mib	BaseShelf
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Card **cpuUtilAvgMin**

Access	Read only
Description	This attribute indicates the minimum processor utilization level over a specified time period, *timeInterval*. This is based on one minute CPU utilization averages.

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Mib	BaseShelf
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Card cpuUtilAvgMax

Access	Read only
Description	This attribute indicates the maximum processor utilization level over a specified time period, *timeInterval*. This is based on one minute CPU utilization averages.
Mib	BaseShelf
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Card sharedMsgBlockUsage

Access	Read only
Description	This attribute indicates the processor's current shared message block memory utilization.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card sharedMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this average memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

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ATTRIBUTE Shelf Card **sharedMsgBlockUsageAvgMin**

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this minimum memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card **sharedMsgBlockUsageAvgMax**

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this maximum memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card **localMsgBlockUsage**

Access	Read only
Description	This attribute indicates the processor's current memory utilization of message blocks which are used for local messaging on the card.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card **localMsgBlockUsageAvg**

Access	Read only

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Description	This attribute indicates the processor's average memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this average memory utilization is reset to the current usage, *localMsgBlockUsage.*
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card localMsgBlockUsageMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is updated at 15 second intervals. At the start of each *timeInterval*, this minimum memory utilization is reset to the current usage, *localMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card localMsgBlockUsageMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is updated at 15 second intervals. At the start of each *timeInterval*, this maximum memory utilization is reset to the current usage, *localMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card memoryUsage

Access	Read only

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Description	This attribute indicates the processor's current memory utilization for each type of memory.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Shelf Card memoryUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Shelf Card memoryUsageAvgMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

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ATTRIBUTE Shelf Card **memoryUsageAvgMax**

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

GROUP Shelf Card **Capacity (Cap)**

Properties	Operational
Description	This group contains the operational attributes that specify the processor's capacity levels. When this group exists for an *LP* component, the attributes are representative of the active *Card*.
Mib	BaseShelf

ATTRIBUTE Shelf Card **sharedMsgBlockCapacity**

Access	Read only
Description	This attribute indicates the processor card's shared message block memory capacity.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card **localMsgBlockCapacity**

Access	Read only
Description	This attribute indicates the processor card's local message block memory capacity. These message blocks are used for local messaging on the card.
Mib	BaseShelf

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Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card memoryCapacity

Access	Read only
Description	This attribute indicates the processor card's memory capacity for each type of memory.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

COMPONENT Shelf Card BusTap

Instance	x y
Groups	GROUP Shelf Card BusTap OsiState (State) GROUP Shelf Card BusTap Operational (Oper) GROUP Shelf Card BusTap Errors
Scope	Device
Description	*Shelf Card/n BusTap/b* A *BusTap* component represents a physical bus tap on a card. A bus tap is a card's interface to a bus; it provides a pathway for the card to send cells over the bus to the other cards in the module, and to receive cells sent to it over the bus by the other cards in the module. A card's *BusTap* components are created automatically whenever the card begins acting as an active or standby LP, and remain in existence as long as the card remains operational; *BusTap* components cannot be added or deleted.
Mib	Bus
Common Verbs	Help List Display

GROUP Shelf Card BusTap OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bus

ATTRIBUTE Shelf Card BusTap adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Bus
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf Card BusTap operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Bus

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf Card BusTap usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Bus

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Shelf Card BusTap availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

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The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Bus
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **Shelf Card BusTap** **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Bus
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Shelf Card BusTap controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

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The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — Bus

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Shelf Card BusTap **alarmStatus (osiAlarm)**

Access — Read only

Description

If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — Bus

Set of
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

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Default	No default

ATTRIBUTE Shelf Card BusTap **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Bus
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Card BusTap **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Bus
Values	false true
Default	false

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GROUP Shelf Card BusTap **Operational (Oper)**

Properties	Operational
Description	This attribute group contains operational attributes of a bus tap. This information outlines what the bus tap is doing and why it is doing it, and is primarily intended for use in diagnosing the cause of a bus-related problem reported by the module.
Mib	Bus

ATTRIBUTE Shelf Card BusTap **failuresInEffect**

Access	Read only
Description	This attribute records the hardware problems that prevent the bus tap from using the associated bus. It may contain any combination of the following values. ***selfTest***: the bus tap has failed its self-test ***clockSignal***: the bus tap is not receiving clock signals from the bus ***parityError***: the bus tap has detected too many parity errors on the bus
Mib	Bus
Set of	selfTest clockSignal parityError
Default	No default

ATTRIBUTE Shelf Card BusTap **dependenciesInEffect**

Access	Read only
Description	This attribute records the non-hardware problems that prevent the bus tap from using the associated bus. It may contain any combination of the following values. ***busLocked***: the bus is locked ***busDisabled***: the bus is disabled
Mib	Bus
Set of	busLocked busDisabled
Default	No default

ATTRIBUTE Shelf Card BusTap **cardsAvailable**

Access	Read only
Description	This attribute records the slot numbers of the cards that the bus tap considers available on the bus—that is, the cards that have an operational bus tap connected to the bus. The value of this attribute is determined automatically by the bus tap by monitoring signals generated by each bus tap on the bus; it cannot be changed by the operator. Normally, every card in the module signals its availability on both buses; if a card does not

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	signal its availability on a bus this indicates that the card is not present or that its bus tap has failed. By examining this attribute for both of a card's *BusTap* components, it is possible to determine which cards are present in the module and which buses each can use. Note: If *failuresInEffect* contains either ***selfTest*** or ***clockSignal*** the bus tap is unable to monitor the availability of the bus taps on the bus; *cardsAvailable* will indicate that no bus taps are available on the bus.
Mib	Bus
Set of	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card BusTap **cardsTxTo**

Access	Read only
Description	This attribute records the slot numbers of the cards which the bus tap is currently configured to transmit cells to. This configuration is managed automatically, and cannot be changed by the operator. By examining this attribute for both of a card's *BusTap* components, it is possible to determine which bus (if any) the card uses when it needs to transmits cells to a specific card in the module.
Mib	Bus
Set of	Decimal (0..15)
Default	No default

GROUP Shelf Card BusTap **Errors**

Properties	Operational
Description	This attribute group records errors that the bus tap has detected since the card was last rebooted. This information is intended for use in detecting and diagnosing bus-related problems within a module.
Mib	Bus

ATTRIBUTE Shelf Card BusTap **selfTestErrorCode**

Access	Read only
Description	This attribute records the error code generated by the most recent self-test of the bus tap. The value zero indicates that the self-test was successful. A non-zero value indicates that the self-test failed, and is used by the service technician when a defective card is returned for repair.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap **clockErrors**

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Access	Read only
Description	This attribute records the number of times that the bus tap has detected a loss of the fundamental clock signal used by the bus. Each occurrence may result in the loss of one or more cells or frames. This type of event may occur during normal operation of the module, for example when switching from one of the bus's clock sources to the other; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap endOfCellErrors

Access	Read only
Description	This attribute records the number of times that the bus tap has detected a loss of the end-of-cell timing signal used by the bus. Each occurrence may result in the loss of one or more cells or frames. This type of event may occur during normal operation of the module, for example switching the bus's clock source from one card to another; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap parityErrors

Access	Read only
Description	This attribute records the number of times that the bus tap has detected a cell with invalid parity on the bus. Each occurrence may result in the loss of one or more cells or frames. This type of event may occur during normal operation of the module, for example when a card is inserted, removed, or reboots; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmCongestionErrors

Access	Read only

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Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because all of its bus receive channels were in use. Each occurrence results in the loss of the frame. This type of event may occur during normal operation of the module, for example when the module is operating in single bus mode; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmCollisionErrors

Access	Read only
Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because it did not receive the last cell of the frame before the first cell of the following frame from the same source. Each occurrence results in the loss of both frames. This type of event may occur during normal operation of the module, for example when a card reboots; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmTimeoutErrors

Access	Read only
Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because the delay between two successive cells in that frame exceeded the maximum allowable duration. Each occurrence results in the loss of the frame. This type of event may occur during normal operation of the module, for example when the module changes bus mode; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmDeliveryErrors

Access	Read only

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Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because it was destined for a bus transmit queue; that is, the frame would have been immediately retransmitted over a bus. Each occurrence results in the loss of the frame. This type of event should never occur during normal operation of the module and indicates the occurrence of a hardware or software fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmSizeErrors

Access	Read only
Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because it required more than 255 blocks of shared memory. Each occurrence results in the loss of the frame. This type of event should never occur during normal operation of the module and indicates improper configuration of the card or the occurrence of a hardware or software fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Shelf Card Test

Groups	GROUP Shelf Card Test OsiState (State) GROUP Shelf Card Test Setup GROUP Shelf Card Test Results
Scope	Device
Description	*Shelf Card/n Test* This component is used to verify the operation of a module's card*s*. A card test may be run when new hardware or services are commissioned, as part of a routine maintenance program, or to diagnose the cause of card- or bus-related problems. The *Test* component is created automatically for each card that is running as an active or standby LP; *Test* components cannot be added or deleted. A card test allows the operator to stress test new or existing cards under controlled conditions. The test circulates frames over the bus between the card under test and a distinct "target card", thereby exercising both cards and consuming bus bandwidth. The test frames follow the same route to their destination as normal frames. If the node is in dual bus mode, each

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card test that is activated consumes bandwidth from both backplane buses in equal amounts; if the module is in single bus mode, only the bus in service is utilized.

The test frames generated by the card under test are grouped into two independent streams.
1) The loading frame stream circulates a set of “loading frames” between the card under test and the target card as rapidly as possible. The intent of this stream is to verify the operation of the cards and the backplane buses under a controlled load.
2) The verification stream transmits a series of “verification frames” from the card under test to the target card; as each frame is returned, its contents are verified and the next verification frame in the series is transmitted. The intent of this stream is to verify that frames are not being corrupted during transfer from card to card.
The card test can be configured to send frames from either or both streams. The priority, size, and content of the test frames can also be controlled.

Each card can run the card test independently. The operator can run the card test on any subset of the cards simultaneously and can specify different test frame configurations for each test. It is also possible for a card to act as the target card for more than one card under test, and for a card to act as a target card while it is itself under test. The flexibility provided by the card test allows the operator to tailor a set of card tests according to the testing to be performed.

Mib: BaseShelf

Common Verbs:
Help
List
Display

VERB START **Shelf Card Test**

Impact: Service

Description: *Start Shelf Card/n Test*
This verb initiates the card test. If the card test is already running, the command has no effect and the test continues. The *Test* component on the target card must exist before the test can be run.

VERB STOP **Shelf Card Test**

Impact: Service

Description: *STOP Shelf Card/n Test*
This verb terminates the card test. If the card test is not running, the command has no effect.

GROUP **Shelf Card Test** **OsiState (State)**

Properties: Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	BaseShelf

ATTRIBUTE Shelf Card Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	BaseShelf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf Card Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	BaseShelf
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Shelf Card Test **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	BaseShelf
Values	idle active (activ) busy
Default	idle

GROUP Shelf Card Test **Setup**

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a card test. These attributes cannot be changed while a card test is running.
Mib	BaseShelf

ATTRIBUTE Shelf Card Test **targetCard (card)**

Access	Read and write
Description	This attribute specifies the slot number of the card to which frames are sent during the card test. There is no single default value for this attribute—it defaults to the slot number of the *Test* component's own card and must be changed to a different value before the test can be started.
Mib	BaseShelf
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card Test **frmTypes (types)**

Access	Read and write
Description	This attribute specifies the types of frames that are sent during the card test. It must contain at least one of the following values. ***loading***: A set of "loading frames" is circulated between the *Test* component and the *Test* component on the target card as rapidly as possible. This frame type should be selected when the test is intended to

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	verify the operation of the cards and the backplane buses under a specified load. ***verification***: A single “verification frame” is transmitted to the *Test* component on the target card; when the frame is returned, its contents are verified and the next verification frame in the series is transmitted. This frame type should be selected when the test is intended to verify that frames are not being corrupted as they pass from card to card.
Mib	BaseShelf
Set of	loading verification
Default	(loading, verification)

ATTRIBUTE Shelf Card Test frmPriorities (priorities)

Access	Read and write
Description	This attribute specifies the priorities of the frames that are sent during the card test. It must contain at least one of the following values. ***lowPriority***: Low priority frames are sent. ***highPriority***: High priority frames are sent.
Mib	BaseShelf
Set of	lowPriority highPriority
Default	(lowPriority)

ATTRIBUTE Shelf Card Test frmPatternType (fpt)

Access	Read and write
Description	This attribute specifies the bit sequence to fill the frames used in the card test. It must contain one of the following values. ***ccitt32kBitPattern***: a pseudo-random sequence of 32 kbit is used ***ccitt8MBitPattern***: a pseudo-random sequence of 8 Mbit is used ***customizedPattern***: the pattern defined by the *customizedPattern* attribute is used
Mib	BaseShelf
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Shelf Card Test customizedPattern (cp)

Access	Read and write

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Description	This attribute specifies a 32 bit sequence used to fill frames when the *framePatternType* attribute has a value of ***customizedPattern***. The default value gives a pattern of alternating 0 and 1 bits.
Mib	BaseShelf
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Shelf Card Test **duration**

Access	Read and write
Description	This attribute specifies the maximum length of time that the card test is allowed to run. The value is expressed in minutes. The maximum allowed value permits the card test to be run for up to 30 days.
Mib	BaseShelf
Values	Decimal (1..43200)
Units	minutes
Default	60

ATTRIBUTE Shelf Card Test **frmSize (size)**

Access	Read and write
Description	This attribute specifies for each priority level the number of data bytes in each frame sent during the card test. (The value specified does not include the 4-byte header that is automatically added to a frame when it is transmitted over the backplane.)
Mib	BaseShelf
Vector of	Decimal (16..16000)
Units	bytes
Index	lowPriority highPriority
Default	(lowPriority: 1024, highPriority: 56)

GROUP Shelf Card Test **Results**

Properties	Operational
Description	This attribute group contains the results of the card test that is currently running; if no test is running, the attribute group contains the results of the most recently completed card test. The attributes of the *Results* group are reset to their initial values whenever a card test is started or any attribute of the *Setup* group is set.

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Mib	BaseShelf

ATTRIBUTE Shelf Card Test **elapsedTime**

Access	Read only
Description	This attribute records the length of time that the card test has been running.
Mib	BaseShelf
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card Test **timeRemaining**

Access	Read only
Description	This attribute records the maximum length of time that the card test will continue to run before stopping.
Mib	BaseShelf
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card Test **causeOfTermination**

Access	Read only
Description	This attribute records the reason the card test ended. It contains one of the following values: ***neverStarted***: the card test has not been started. ***testRunning***: the card test is currently running. ***testTimeExpired***: the card test ran for the specified duration. ***stoppedByOperator***: a *Stop* command was issued. ***targetFailed***: the target card became non-operational. ***becameActive***: the source card became the active card for some LP.
Mib	BaseShelf
Values	neverStarted testRunning testTimeExpired stoppedByOperator targetFailed becameActive
Default	No default

ATTRIBUTE Shelf Card Test **loadingFrmData**

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Access	Read only
Description	This attribute records information about the loading frames that have been transmitted to the *Test* component on the target card. The following data is shown for each priority level: — the number of frames that have been transmitted, — the number of frames that were not returned successfully. The attribute's value wraps to zero when they exceed the maximum permitted value. Note: A loading frame is considered to have been successfully returned even if it contains bit errors. Frame error statistics are recorded in the *verificationFrmData* attribute.
Mib	BaseShelf
Array of	Decimal (0..4294967295)
Row	results [framesSent framesLost]
Column	priority [low high]
Default	No default

ATTRIBUTE Shelf Card Test verificationFrmData

Access	Read only
Description	This attribute records information about the verification frames that have been transmitted to the *Test* component on the target card. The following data is shown for each priority level: — the number of frames that have been tested, — the number of frames that had incorrect bits when returned. The attribute's values wrap around to zero when they exceed the maximum permitted value. Note: Verification frames that are not returned at all, or are returned too late, are considered "lost" and are not counted in either of the above values. Frame loss statistics are recorded in the *loadingFrmData* attribute.
Mib	BaseShelf
Array of	Decimal (0..4294967295)
Row	results [framesTested framesBad]
Column	priority [low high]
Default	No default

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COMPONENT Shelf Card Diagnostics (Diag)

Scope	Device
Description	*Shelf Card/n Diagnostics* This component manages all diagnostic information for a specific card. The diagnostic information under this component is intended to be used by Nortel Networks technical support.
Mib	BaseShelf
Subcomponents	COMPONENT Shelf Card Diag TrapData COMPONENT Shelf Card Diag RecoverableError (RecErr)
Common Verbs	Help List Display

COMPONENT Shelf Card Diag TrapData

Scope	Device
Description	Shelf Card/n Diag TrapData On control and function processors, information about hardware- or software-detected critical faults is preserved on the card until the power is lost. These critical faults lead to the reboot of the card and the captured trap data survives the rebooting of the card. This component manages trap data stored in the persistent memory on the card. The trap data can be retrieved from the card to determine the cause of the fault.
Mib	BaseShelf
Dyn. Subcomp.	COMPONENT Shelf Card Diag TrapData Line
Common Verbs	Help List Display

COMPONENT Shelf Card Diag TrapData Line

Instance	Decimal (1..500)
Groups	GROUP Shelf Card Diag TrapData Line Operational (Oper)
Scope	Device

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Description	*Shelf Card/m Diag TrapData Line/n* This component represents one line of trap data report.
Mib	BaseShelf
Common Verbs	Help List Display

GROUP Shelf Card Diag TrapData Line **Operational (Oper)**

Properties	Operational
Description	This attribute group contains operational attributes for one line of trap data or recoverable error report.
Mib	BaseShelf

ATTRIBUTE Shelf Card Diag TrapData Line **data**

Access	Read only
Description	This attribute contains one line of trap data or recoverable error report.
Mib	BaseShelf
Values	String (0..512, Extended ASCII)
Default	No default

COMPONENT Shelf Card Diag **RecoverableError (RecErr)**

Scope	Device
Description	Shelf Card/n Diag RecoverableError This component manages recoverable errors stored in the persistent memory that are preserved on the card until the power is lost. Recoverable errors do not cause the reboot of a card. Information about the errors can be retrieved from the card to determine the cause of the fault.
Mib	BaseShelf
Dyn. Subcomp.	COMPONENT Shelf Card Diag RecErr Line
Common Verbs	Help List Display

COMPONENT Shelf Card Diag RecErr **Line**

Instance	Decimal (1..500)
Groups	GROUP Shelf Card Diag RecErr Line Operational (Oper)
Scope	Device

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Description	*Shelf Card/m Diag RecErr Line/n* This component represents one line of recoverable error report.
Mib	BaseShelf
Common Verbs	Help List Display

GROUP Shelf Card Diag RecErr Line **Operational (Oper)**

Properties	Operational
Description	This attribute group contains operational attributes for one line of trap data or recoverable error report.
Mib	BaseShelf

ATTRIBUTE Shelf Card Diag RecErr Line **data**

Access	Read only
Description	This attribute contains one line of trap data or recoverable error report.
Mib	BaseShelf
Values	String (0..512, Extended ASCII)
Default	No default

COMPONENT Shelf Card **FabricPort**

Instance	x y
Groups	GROUP Shelf Card FabricPort OsiState (State) GROUP Shelf Card FabricPort Operational (Oper) GROUP Shelf Card FabricPort Errors
Scope	Device
Description	*Shelf Card/n FabricPort/f* This component represents a physical fabric port on a card. A fabric port is a card's interface to a fabric card; it provides a pathway for the card to send cells over the fabric card to the other cards in the module, and to receive cells sent to it over the fabric card by the other cards in the module. A card's *FabricPort* components are created automatically whenever the card begins acting as an active or standby LP. They remain in existence as

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long as the card remains operational. *FabricPort* components cannot be added or deleted.

Mib	Fabric
Dyn. Subcomp.	COMPONENT Shelf Card FabricPort Test
Common Verbs	Help List Display LOCK Unlock

GROUP Shelf Card FabricPort OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Fabric
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

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Default	unlocked

ATTRIBUTE Shelf Card FabricPort **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Fabric
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf Card FabricPort **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Fabric
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf Card FabricPort **availabilityStatus (osiAvail)**

Access	Read only

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Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	Fabric
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **Shelf Card FabricPort** **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Fabric
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Shelf Card FabricPort controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Fabric
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Shelf Card FabricPort alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Fabric
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Shelf Card FabricPort **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Fabric
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Card FabricPort unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Fabric
Values	false true
Default	false

GROUP Shelf Card FabricPort Operational (Oper)

Properties	Operational
Description	This attribute group contains operational attributes of a fabric port. This information outlines what the fabric port is doing and why it is doing it. It is primarily intended for use in diagnosing the cause of a fabric-related problem reported by the module.
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort failuresInEffect

Access	Read only
Description	This attribute indicates the failures that prevent the fabric port from using the associated fabric. It may contain any combination of the following values: ***selfTest***: The port has failed its self-test. ***hardwareError***: An unrecoverable critical error has occurred on the hardware of the processor card which exchanges cells with fabric card. ***portProtocolError:*** Errors have occurred which violate the protocol between components of the fabric port in datapath. ***switchClockError***: The fabric card clock is no longer detected by the processor card. ***livelinessError***: A non-fatal hardware error has occurred on the component which exchanges cells with the fabric card. Excessive numbers of these errors on the fabric port may be indicating a serious hardware

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problem.
dataCorruptionError: Cell payloads or headers are detected as being corrupted at the fabric port level.
linkLivelinessError: The link between the fabric port and the fabric card is not indicating liveliness.

Operator action: Run the fabric test to clear these errors.

Mib	Fabric
Set of	selfTest hardwareError portProtocolError switchClockError livelinessError dataCorruptionError linkLivelinessError
Default	No default

ATTRIBUTE Shelf Card FabricPort **dependenciesInEffect**

Access	Read only
Description	This attribute indicates the non-hardware problems that prevent the fabric port from using the associated fabric. It may be a combination of the following values: ***fabricLocked***: The fabric card is locked. ***fabricDisabled***: The fabric card is disabled. ***portDisabled***: The corresponding card port on the fabric is disabled.
Mib	Fabric
Set of	fabricLocked fabricDisabled portDisabled
Default	No default

ATTRIBUTE Shelf Card FabricPort **cardsAvailable**

Access	Read only
Description	This attribute indicates the slot numbers of the cards that the fabric port considers available through the fabric; that is, the cards that have an operational port connected to the fabric. The value of this attribute is determined automatically by the fabric port by monitoring signals generated by each fabric port connected to the fabric card. Normally, every card in the module signals its availability on both fabrics. If a card does not signal its availability on a fabric, then the card is not present or its fabric port has failed. By examining this attribute for both of a card's *FabricPort* components, it is possible to determine which cards are present in the module and which fabric each can use. Note: If *failuresInEffect* has a value of ***selfTest***, ***signalLoss***,

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synchronizationLoss, or ***protocolError***, the fabric port is unable to monitor the availability of the fabric ports on the fabric. In such cases, *cardsAvailable* indicates that no fabric port is available on the fabric.

Mib	Fabric
Set of	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card FabricPort **cardsTxTo**

Access	Read only
Description	This attribute indicates the slot number of the cards to which the fabric port is currently configured to transmit cells. This configuration is managed automatically, and cannot be changed by the operator. By examining this attribute for both of a card's *FabricPort* components, it is possible to determine which fabric (if any) the card uses when it needs to transmits cells to a specific card in the module.
Mib	Fabric
Set of	Decimal (0..15)
Default	No default

GROUP Shelf Card FabricPort **Errors**

Properties	Operational
Description	This attribute group indicates errors that the fabric port has detected since the card was last rebooted. This information is intended for use in detecting and diagnosing fabric-related problems within a module.
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort **selfTestErrorCode**

Access	Read only
Description	This attribute indicates the error code generated by the most recent self-test of the port. Zero indicates that the self-test was successful. A non-zero value indicates that the self-test failed. This information is used by the service technician when a defective card is returned for repair.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort **livelinessErrors**

Access	Read only
Description	This attribute counts the liveliness errors detected on the port. Liveliness errors are failures to receive yellow cells within a certain period of time.

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The value wraps to zero when it exceeds the maximum value.

Note: **Yellow cells** are special types of packets which are generated by the fabric port and detected by the fabric card and the fabric port in order to check the link liveness with the fabric card.

Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort **switchClockErrors**

Access	Read only
Description	This attribute counts the clock errors which have occurred on this port. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort **portHardwareErrors**

Access	Read only
Description	This attribute counts the errors which have occurred on the hardware which exchanges cells with the fabric card. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort **portProtocolErrors**

Access	Read only
Description	This attribute counts the number of errors which affect the protocol between components of the fabric port datapath. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort **dataCorruptionErrors**

Access	Read only

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Description	This attribute counts the errors which have occurred on the corrupted cell payloads or headers at fabric port level. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort **linkLivelinessErrors**

Access	Read only
Description	This attribute counts the errors which occurred on the link between the fabric port and the fabric card. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Shelf Card FabricPort **Test**

Groups	GROUP Shelf Card FabricPort Test OsiState (State) GROUP Shelf Card FabricPort Test Setup GROUP Shelf Card FabricPort Test Results
Scope	Device
Description	*Shelf Card/n Fabric/f Test* This component is used to verify the operation of a fabric port. A fabric port test may be run as part of a regular maintenance program or to diagnose the cause of a *FabricPort*-related problem. The *Test* component is created automatically, and cannot be added or deleted. The fabric port test ensures that the fabric port on a specific card is functioning properly at minimal utilization rates. The fabric port to be tested must be locked while testing is in progress. The test only involves the fabric port on the specified card. The results of the test can help to determine which portions of the fabric port system are faulty, if any. A fabric port test comprises several different tests. The tests are performed in the following order: **port test:** The fabric port selfTest **broadcast test:** The fabric port ensures that it can receive a broadcast frame over the fabric card from every operational card (including itself). **ping test:** The fabric port ensures that it can receive a low priority non-broadcast frame over the backplane from every operational card (including itself).

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Once all of the tests have been performed, the ping test is repeated continuously until the fabric port test is terminated; this repetition helps to detect transient fabric card and fabric port faults. The fabric port test stops automatically after a specified time interval, or if it detects a port test failure, or a broadcast test failure.

Mib — Fabric

Common Verbs — Help, List, Display

VERB START Shelf Card FabricPort Test

Impact — Service

Description — *Start Shelf Card/n Fabric/f Test*
This verb initiates the fabric port test. If the fabric port test is already running, the command has no effect and the test continues. The fabric port must be locked before the test can be run.

VERB STOP Shelf Card FabricPort Test

Impact — Service

Description — *Stop Shelf Card/n Fabric/f Test*
This verb terminates the fabric port test. If the fabric port test is not running, the command has no effect.

GROUP Shelf Card FabricPort Test **OsiState (State)**

Properties — Operational

Description — This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — Fabric

ATTRIBUTE Shelf Card FabricPort Test **adminState (osiAdmin)**

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Fabric

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Shelf Card FabricPort Test **operationalState (osiOper)**

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Fabric

Values
enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Shelf Card FabricPort Test **usageState (osiUsage)**

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Fabric

Values
idle
active (activ)
busy

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Default	idle

GROUP Shelf Card FabricPort Test **Setup**

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a fabric card or fabric port test. These attributes cannot be changed while the fabric card or fabric port test is running.
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort Test **duration**

Access	Read and write
Description	This attribute specifies the maximum length of time that the fabric card test is allowed to run. The maximum allowed value permits the fabric card test to be run for up to 30 days.
Mib	Fabric
Values	Decimal (1..43200)
Units	minutes
Default	2

ATTRIBUTE Shelf Card FabricPort Test **type**

Access	Read and write
Description	This attribute specifies the type of the test to be run. When this attribute is set to ***main***, a subsequent fabric card test verifies that the fabric ports on this card and the corresponding cards ports are functioning properly. When this attribute is set to ***scbPoll***, a subsequent fabric card test exercises all the secondary control bus (SCB) bus taps in the system corresponding to the fabric card under test.
Mib	Fabric
Values	main scbPoll
Default	main

GROUP Shelf Card FabricPort Test **Results**

Properties	Operational
Description	This attribute group contains the results of the fabric port test that is currently running; if no fabric port test is running, the attribute group contains the results of the most recently completed fabric port test. The attributes of the *Results* group are reset to their initial values, whenever a fabric card test is started or any attribute in the *Setup* group is set

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Mib	Fabric

ATTRIBUTE Shelf Card FabricPort Test elapsedTime

Access	Read only
Description	This attribute indicates the length of time that the fabric port test has been running.
Mib	Fabric
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card FabricPort Test timeRemaining

Access	Read only
Description	This attribute indicates the maximum length of time that the fabric port test runs before stopping.
Mib	Fabric
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card FabricPort Test causeOfTermination

Access	Read only
Description	This attribute indicates the reason the fabric port test ended. It contains one of the following values: ***neverStarted***: The fabric port test has not been started. ***testRunning***: The fabric port test is currently running. ***testTimeExpired***: The fabric port test ran for the specified duration. *stoppedByOperator*: A *Stop* command was issued. ***portTestFailure***: A failure was detected during the port test. ***fabricSelfTestFailure***: A failure was detected during the fabric self test. ***broadcastFailure***: A failure was detected during the broadcast test.
Mib	Fabric
Values	neverStarted testRunning testTimeExpired stoppedByOperator portTestFailure fabricSelfTestFailure broadcastFailure
Default	No default

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ATTRIBUTE Shelf Card FabricPort Test **testsDone**

Access	Read only
Description	This attribute indicates the tests that have been performed during the fabric port test. It contains zero or more of the following values: ***portTest***: The port test has been performed. ***broadcastTest***: The broadcast test has been performed. ***pingTest***: At least one ping test has been performed.
Mib	Fabric
Set of	portTest broadcastTest pingTest
Default	No default

ATTRIBUTE Shelf Card FabricPort Test **portTestResults**

Access	Read only
Description	This attribute indicates the results of the fabric port tested. The entry contains one of the following values. ***+***: the port passed its test ***X***: the port failed its test **.**: the port was not tested The fabric port test terminates automatically if a failure is detected.
Mib	Fabric
Values	+ (pass) X (fail) . (noTest)
Default	No default

ATTRIBUTE Shelf Card FabricPort Test **broadcastPortTestResults**

Access	Read only
Description	This attribute indicates the results of the broadcast test of this fabric port. This test verifies that the fabric port can send a broadcast message to other operational cards in the shelf. The entry contains one of the following values. ***+***: a broadcast message was successfully sent from the transmitting fabric port to the receiving fabric port ***X***: a broadcast message was not successfully sent from the transmitting fabric port to the receiving fabric port **.**: the associated pair of fabric ports was not tested The fabric port test terminates automatically if a failure is detected.

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Mib	Fabric
Vector of	+ (pass) X (fail) . (noTest)
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card FabricPort Test **pingTests**

Access	Read only
Description	This attribute indicates the number of ping tests performed. Each test attempts to transmit a single low-priority frame from this fabric port to the fabric ports of other operational cards in the shelf.
Mib	Fabric
Vector of	Decimal (0..4294967295)
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card FabricPort Test **pingTestFailures (pingFailures)**

Access	Read only
Description	This attribute indicates the number of ping test failures detected. Each failure represents a single low-priority frame that was not successfully transmitted from the fabric port to the fabric ports of other operational cards in the shelf. The fabric port test does *not* terminate automatically if a failure is detected.
Mib	Fabric
Vector of	Decimal (0..4294967295)
Index	Decimal (0..15)
Default	No default

COMPONENT Shelf Card **SparedServices (SpServ)**

Groups	GROUP Shelf Card SpServ OsiState (State)
Scope	Application
Description	*Shelf Card/n SparedServices* This component represents the rolled-up view of spared services which exist on the parent *Card*. The existence of this component is dependent on whether the parent *Card* has a mate *Card*, either in a single LP or multi-LP sparing configuration. The spared services themselves may be providing service or they may be operating in a standby mode. For an FP, the standby mode (cold or hot) is

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dependent on the applications present on the *Lp* component linked to the parent *Card* component. For an CP, the standby mode (cold or hot) is dependent on the provisioning of the *cpEquipmentProtection* attribute in the *Shelf* component. If *cpEquipmentProtection* is provisioned as ***hot/cold***, then the standby mode of the spared services for the standby CP is hot/cold respectively.

The *SparedServices* component itself reflects the overall sparing status via its OSI *operationalState*, *availabilityStatus*, and *standbyStatus* attributes.

An *operationalState* of ***enabled*** on a card with active service instances, indicates that the spared services are configured and running. On a card with standby service instances, ***enabled*** indicates that they are able to take over from the active instances if the corresponding card fails.

An *operationalState* of ***disabled*** indicates that spared services are configured but are not yet running on this card. Also, on the card with standby instances of spared services, this state is entered while an activation is in progress for any components (spared service instances or any other components, for that matter) on the card. For the standby CP, this state can also be entered if the *journaling* attribute in the *ProvisioningSystem* component becomes operationally ***disabled***. If Switchover occurs in this ***disabled*** state, then the *standby card* will reset before taking over for the *active card*. If *CP Switchover* occurs in this ***disabled*** state when the *standbyStatus* is ***hotStandby***, then the whole shelf will be reset.

An empty value for the *availabilityStatus* indicates that all instances of spared services are either providing service or are ready to take over with their normal level of switchover support, as indicated by the *standbyStatus* attribute.

An *availabilityStatus* of ***degraded*** indicates that at least one standby service instance is not ready to take over with its normal level of switchover support. This value is valid only when the *standbyStatus* attribute has a value of ***hotStandby***. Refer to alarms from the *Shelf Card SparedServices* component to determine specific applications and their problems. For the standby CP, the value of *availailityStatus* attribute can be ***degraded*** when the file systems are out of synchronization, or when the *Provisioning* system has not finished synchronizing the active CP's configuration data. Note that ***degraded*** can appear even when the value of the *operationalState* attribute is ***disabled*** due to an activation.

A *standbyStatus* of ***providingService*** indicates that all spared service instances are active.

A *standbyStatus* of ***coldStandby*** indicates that all spared service instances are standby, and the normal or expected level of switchover support for the current combination of services on this card is cold. That is, there can be extended service outage on a switchover.

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A *standbyStatus* of ***hotStandby*** indicates that all spared service instances are standby, and the normal or expected level of switchover support on an FP is either warm or hot, depending on the applications involved. That is, there is no service outage on switchover for the applications that are hot, and minimal service outage for the applications which are warm. The normal or expected level of switchover support on an CP is application dependent. Some applications can have warm or hot switchover support, other applications can have cold switchover support.

Mib BaseShelf

Common Verbs
Help
List
Display

GROUP Shelf Card SpServ **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib BaseShelf

ATTRIBUTE Shelf Card SpServ **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib BaseShelf

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf Card SpServ **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf Card SpServ **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	idle active (activ) busy
Default	idle

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ATTRIBUTE Shelf Card SpServ **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	BaseShelf
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Shelf Card SpServ **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	BaseShelf
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Shelf Card SpServ controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	BaseShelf
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Shelf Card SpServ alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — BaseShelf

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Shelf Card SpServ **standbyStatus (osiStby)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	BaseShelf
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Card SpServ unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	BaseShelf
Values	false true
Default	false

COMPONENT Shelf Card DaughterCard (Dcard)

Instance	Decimal (1..15)
Groups	GROUP Shelf Card Dcard DcardOper
Scope	Device
Description	*DaughterCard/n* The *DaughterCard* component contains the information of a daughter card located on a card. The instance value of the *daughterCard* indicates the physical location of its socket on the card.
Mib	BaseShelf
Common Verbs	Help List Display

GROUP Shelf Card Dcard DcardOper

Properties	Operational
Description	This group contains the operational attributes of the *DaughterCard* component.
Mib	BaseShelf

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ATTRIBUTE Shelf Card Dcard **type**

Access	Read only
Description	This attributes indicates the type of a daughter card.
Mib	BaseShelf
Values	unknown ram aqm pqc aqmpqc processor
Default	No default

ATTRIBUTE Shelf Card Dcard **memorySize**

Access	Read only
Description	This attribute indicates the memory size in megabytes of the daughter card.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	Mbyte
Default	No default

ATTRIBUTE Shelf Card Dcard **productCode**

Access	Read only
Description	This attribute indicates the product equipment code of the daughter card.
Mib	BaseShelf
Values	String (0..12, ASCII)
Default	No default

COMPONENT Shelf Card **HwDiagnostics (HwDiag)**

Groups	GROUP Shelf Card HwDiag OsiState (State) GROUP Shelf Card HwDiag Setup GROUP Shelf Card HwDiag Results
Scope	Device
Description	*Shelf Card/n HwDiagnostics* The *Shelf Card/n HwDiagnostics* component allows automated tests of the individual cards on Nortel Networks Multiservice Switch 15000 and Nortel Networks Multiservice Switch 20000. Only one FP card can be tested at a time, testing of CP cards is not supported. The performed tests are comprehensive and allow the testing of all devices and data paths on the

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targeted card. The performed test are a large subset of the tests conducted during manufacturing testing.

In order to perform the tests the card to be tested must first be locked. This will result in a service outage for the card being tested. Once the test has completed the card can be placed back in service by unlocking it.

Hardware diagnostics are not provided for standby cards that make use of single *Lp*, however diagnostics are provided for standby cards that make use of Dual Lp Equipment Protection (*Dlep*).

Mib HwDiagnostics

Common Verbs
Help
List
Display

VERB START **Shelf Card HwDiag**

Impact Service

Description *Start Shelf Card/n HwDiag*
This verb initiates the hardware diagnostic test on the card.

The card to be tested must first be locked prior to starting the test. Only one FP card can be tested at any one time.

VERB STOP **Shelf Card HwDiag**

Impact Service

Description *Stop Shelf Card/n HwDiag*
This verb terminates the hardware diagnostic test and displays the results of the test. Once the test has completed the card may be placed in-service by unlocking it.

GROUP **Shelf Card HwDiag** **OsiState (State)**

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib HwDiagnostics

ATTRIBUTE **Shelf Card HwDiag** **adminState (osiAdmin)**

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — HwDiagnostics

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Shelf Card HwDiag operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — HwDiagnostics

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Shelf Card HwDiag usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	HwDiagnostics
Values	idle active (activ) busy
Default	idle

GROUP Shelf Card HwDiag **Setup**

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of the hardware diagnostic test. These attributes cannot be changed while a hardware diagnostic test is running.
Mib	HwDiagnostics

ATTRIBUTE Shelf Card HwDiag **diagType**

Access	Read and write
Description	This attribute specifies the type of hardware diagnostics that will be performed on the targeted FP. The selections enable the testing of devices, internal data paths (data paths that do not require an external loop-back), external data paths (data paths that require external loop-backs), or both devices and internal data paths as a single test. The default value is set to test both devices and internal data paths (***devPlusIntDatapaths***).
Mib	HwDiagnostics
Values	devPlusIntDatapaths devices internalDatapaths externalDatapaths
Default	devPlusIntDatapaths

ATTRIBUTE Shelf Card HwDiag **displayInterval (displnt)**

Access	Read and write
Description	This attribute specifies the display of results interval while the test is running. The units are in minutes and the default value is 5 minutes. There will be no display of results if the displayInterval attribute is set to 0. This attribute can be changed anytime.
Mib	HwDiagnostics
Values	Decimal (0..30240)
Units	minutes

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Default	5

GROUP Shelf Card HwDiag **Results**

Properties	Operational
Description	This attribute group contains the results of the hardware diagnostic test that is currently running; if no test is running, the attribute group contains the results of the most recently completed hardware diagnostic test. The attributes of the *Results* group are reset to their initial values whenever a hardware diagnostic test is started or any attribute of the *Setup* group is set.
Mib	HwDiagnostics

ATTRIBUTE Shelf Card HwDiag **status**

Access	Read only
Description	This attribute records the current status of the hardware diagnostic test. ***passed*** - indicates that the hardware diagnostic test passed. ***failed*** - indicates that the hardware diagnostic test failed. ***running*** - indicates that the hardware diagnostic test is currently running. ***notYetRun*** - indicates that hardware diagnostic have not yet run on this card. ***notSupported*** - indicates that the card does not support the running of the hardware diagnostic test.
Mib	HwDiagnostics
Values	passed failed running notYetRun notSupported
Default	notYetRun

ATTRIBUTE Shelf Card HwDiag **causeOfTermination**

Access	Read only
Description	This attribute records the reason the hardware diagnostic test ended. It contains one of the following values: ***neverStarted***: the hardware diagnostics test has never been run on the targeted card. ***testRunning***: the hardware diagnostics test is currently running. ***testRanToCompletion***: the hardware diagnostic test ran to completion. ***stoppedByOperator***: a *Stop* command was issued. ***targetFailed***: the targeted card became non-operational as a result of some unknown problem.
Mib	HwDiagnostics
Values	neverStarted testRunning

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	testRanToCompletion stoppedByOperator targetFailed
Default	neverStarted

ATTRIBUTE Shelf Card HwDiag **startTime**

Access	Read only
Description	This attribute records the time at which the test was started.
Mib	HwDiagnostics
Values	Time (DHMS)
Default	No default

ATTRIBUTE Shelf Card HwDiag **elapsedTime**

Access	Read only
Description	This attribute displays the number of minutes that the test has been running.
Mib	HwDiagnostics
Values	Decimal (0..1440)
Units	minutes
Default	0

COMPONENT Shelf Card **Fpga**

Groups	GROUP Shelf Card Fpga FpgaOper
Scope	Device
Description	This component exists only on cards that support an FPGA flash.
Mib	BaseShelf
Common Verbs	Help List Display

GROUP Shelf Card Fpga **FpgaOper**

Properties	Operational
Description	This operational group holds all the attributes for the fpga component
Mib	BaseShelf

ATTRIBUTE Shelf Card Fpga **dynamicFlashVersion**

Access	Read only

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Description	This attribute indicates the version number of the FPGA file stored in the dynamic flash bank
Mib	BaseShelf
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Shelf Card Fpga staticFlashVersion

Access	Read only
Description	This attribute indicates the version number of the FPGA file stored in the static flash bank
Mib	BaseShelf
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Shelf Card Fpga activeFlashBank

Access	Read only
Description	This attribute indicates which flask bank was used to program the devices that support upgrades via the flash on the card. The value notApplicable is the default value at which time the flash bank from which the FPGAs booted from is not known yet.
Mib	BaseShelf
Values	notApplicable dynamic static
Default	notApplicable

ATTRIBUTE Shelf Card Fpga prefix

Access	Read only
Description	This attribute indicates the prefix of the FPGA file stored on disk. Note that this string is never empty.
Mib	BaseShelf
Values	String (0..20, ASCII)
Default	No default

COMPONENT Shelf Bus

Instance	x y
Groups	GROUP Shelf Bus OsiState (State) GROUP Shelf Bus Operational (Oper)

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Scope	Device
Description	*Shelf Bus/b* A *Bus* component represents a hardware resource within a module that card*s* can use to communicate with each other. Each frame (or other data) to be transferred between cards is broken up into one or more cells by the sending card, placed on the bus, and reassembled by the receiving card(s). A module's *Bus* components are created automatically, and cannot be added or deleted.
Mib	Bus
Dyn. Subcomp.	COMPONENT Shelf Bus Test
Common Verbs	Help List Display LOCK Unlock

GROUP Shelf Bus OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bus

ATTRIBUTE Shelf Bus adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Bus

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Shelf Bus operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Bus

Values
enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Shelf Bus usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Bus

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Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf Bus availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

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The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Bus
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Shelf Bus proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Bus
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Shelf Bus controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Bus
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Shelf Bus alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Bus

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Shelf Bus standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Bus
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Bus unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Bus
Values	false true
Default	false

GROUP Shelf Bus Operational (Oper)

Properties	Operational
Description	This attribute group contains operational attributes of a bus.
Mib	Bus

ATTRIBUTE Shelf Bus clockSource

Access	Read only
Description	This attribute records the source of the fundamental clock signal and end-of-cell synchronization signal used by the bus. It contains one of the following values. ***activeCP***: the card which is the active control processor (CP) is providing clock signals ***alternate***: the card at the opposite end of the module from the active CP is providing clock signals
Mib	Bus
Values	activeCP alternate
Default	No default

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ATTRIBUTE Shelf Bus utilization

Access	Read only
Description	This attribute records how much of the available bus bandwidth was actually used during the most recently sampled 1 second interval. The value is expressed as a percentage.
Mib	Bus
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Bus busTapStatus

Access	Read only
Description	This attribute records the operability of each bus tap on the bus, as reported by the associated *BusTap* component; the entries are indexed by slot number of the card. Each entry contains one of the following values. ***ok***: the bus tap is operational ***failed***: the bus tap has failed ***none***: the bus tap status is not available—the associated *BusTap* component does not currently exist
Mib	Bus
Vector of	ok failed none
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Bus clockSourceStatus

Access	Read only
Description	This vector attribute, indexed with ***activeCP*** or ***alternate***, represents the state of the bus clock sources. It can be set to one of the following values: ***ok***: all operational cards can receive signals from the clock source. ***failed***: at least one operational card is unable to receive signals from the clock source. ***unknown***: status of a clock source is unknown. To determine the status of the clock source, a test must be run. ***testInProgress***: the clock source is currently being tested. ***notApplicable***: the LP state of the clock source's card is down or not provisioned.

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Mib	Bus
Vector of	ok failed unknown testInProgress notApplicable
Index	activeCP alternate
Default	No default

COMPONENT Shelf Bus Test

Groups	GROUP Shelf Bus Test OsiState (State) GROUP Shelf Bus Test Setup GROUP Shelf Bus Test Results
Scope	Device
Description	*Shelf Bus/b Test* The *Test* component is used to verify the operation of a bus. A bus test may be run as part of a regular maintenance program, or to diagnose the cause of a bus-related problem. The *Test* component is created automatically, and cannot be added or deleted. The bus test ensures that the bus taps on a specific bus are functioning properly at minimal utilization rates. The bus to be tested must be locked while testing is in progress. The test only involves bus taps on operational cards (active and standby LPs). If an operational card becomes non-operational or fails to respond during the test, it is dropped from the test and is not allowed to rejoin; however, the results of any tests on its bus tap up to that point are preserved. The results of the test can help to determine which portions of the bus system are faulty, if any. A bus test is composed of several different tests. The tests are performed in the following order. 1) Bus tap self-test: Each bus tap executes its self-test. 2) Clock source test: Each bus tap ensures that it can receive clock signals from the active control processor clock source and the alternate clock source (if present). 3) Broadcast test: Each bus tap ensures that it can receive a broadcast frame over the backplane from every operational card (including itself). 4) Ping test: Each bus tap ensures that it can receive a low priority non-broadcast frame over the backplane from every operational card (including itself). Once all of the tests have been performed, the ping test is repeated continuously until the bus test is terminated; this repetition helps to detect transient bus faults. The bus test stops automatically after a specified time

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interval, or if it detects a bus tap self-test failure, an active control processor clock source test failure, or a broadcast test failure.

Mib: Bus

Common Verbs: Help, List, Display

VERB START Shelf Bus Test

Impact: Service

Description: *START Shelf Bus/b Test*
This verb initiates the bus test. If the bus test is already running, the command has no effect and the test continues. The bus must be locked before the test can be run.

VERB STOP Shelf Bus Test

Impact: Service

Description: *STOP Shelf Bus/b Test*
This verb terminates the bus test. If the bus test is not running, the command has no effect.

GROUP Shelf Bus Test **OsiState (State)**

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Bus

ATTRIBUTE Shelf Bus Test **adminState (osiAdmin)**

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Bus

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Shelf Bus Test operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Bus

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Shelf Bus Test usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Bus

Values — idle
active (activ)
busy

Default — idle

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GROUP Shelf Bus Test **Setup**

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a bus test. These attributes cannot be changed while the bus test is running.
Mib	Bus

ATTRIBUTE Shelf Bus Test **duration**

Access	Read and write
Description	This attribute specifies the maximum length of time that the bus test is allowed to run. The value is expressed in minutes. The maximum allowed value permits the bus test to be run for up to 30 days.
Mib	Bus
Values	Decimal (1..43200)
Units	minutes
Default	1

GROUP Shelf Bus Test **Results**

Properties	Operational
Description	This attribute group contains the results of the bus test that is currently running; if no bus test is running, the attribute group contains the results of the most recently completed bus test. The attributes of the *Results* group are reset to their initial values whenever a bus test is started or any attribute in the *Setup* group is set.
Mib	Bus

ATTRIBUTE Shelf Bus Test **elapsedTime**

Access	Read only
Description	This attribute records the length of time (in minutes) that the bus test has been running.
Mib	Bus
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Bus Test **timeRemaining**

Access	Read only
Description	This attribute records the maximum length of time (in minutes) that the bus test will continue to run before stopping.

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Mib	Bus
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Bus Test causeOfTermination

Access	Read only
Description	This attribute records the reason the bus test ended. It contains one of the following values. ***neverStarted***: the bus test has not been started ***testRunning***: the bus test is currently running ***testTimeExpired***: the bus test ran for the specified duration ***stoppedByOperator***: a *STOP* command was issued ***selfTestFailure***: a failure was detected during the bus tap self-test ***clockSourceFailure***: a failure was detected during the test of the active control processor (CP) clock source ***broadcastFailure***: a failure was detected during the broadcast test
Mib	Bus
Values	neverStarted testRunning testTimeExpired stoppedByOperator selfTestFailure clockSourceFailure broadcastFailure
Default	No default

ATTRIBUTE Shelf Bus Test testsDone

Access	Read only
Description	This attribute records the tests that have been performed during the bus test. It may contain zero or more of the following values. ***selfTest***: the bus tap self-test has been performed ***clockSourceTest***: the clock source test has been performed ***broadcastTest***: the broadcast test has been performed ***pingTest***: at least one ping test has been performed
Mib	Bus
Set of	selfTest clockSourceTest broadcastTest pingTest
Default	No default

ATTRIBUTE Shelf Bus Test selfTestResults

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Access	Read only
Description	This attribute records the results of the bus tap self-test, indexed by the slot number of the card containing the bus tap tested. Each entry contains one of the following values. +: the bus tap passed its self-test X: the bus tap failed its self-test .: the bus tap was not tested The bus test terminates automatically if a failure is detected.
Mib	Bus
Vector of	+ (pass) X (fail) . (noTest)
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Bus Test clockSourceTestResults

Access	Read only
Description	This attribute records the results of the clock source test, indexed by the clock source and the slot number of the card containing the bus tap tested. Each entry contains one of the following values. +: the bus tap was able to receive clock signals from the clock source X: the bus tap was unable to receive clock signals from the clock source .: the bus tap was not tested against the clock source The bus test terminates automatically if a failure is detected involving the active control processor (CP) clock source.
Mib	Bus
Array of	+ (pass) X (fail) . (noTest)
Row	source [activeCP alternate]
Column	card [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf Bus Test broadcastTestResults

Access	Read only
Description	This attribute records the results of the broadcast test, indexed by the slot numbers of the card*s* containing the bus taps tested. Each entry contains one of the following values. +: a broadcast message was successfully sent from the transmitting bus tap to the receiving bus tap X: a broadcast message was not successfully sent from the transmitting

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	bus tap to the receiving bus tap .: the associated pair of bus taps was not tested The bus test terminates automatically if a failure is detected.
Mib	Bus
Array of	+ (pass) X (fail) . (noTest)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf Bus Test pingTests

Access	Read only
Description	This attribute records the number of ping tests performed, indexed by the slot numbers of the card*s* containing the bus taps involved. Each test attempts to transmit a single low-priority frame from the transmitting bus tap to the receiving bus tap.
Mib	Bus
Array of	Decimal (0..4294967295)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf Bus Test pingTestFailures (pingFailures)

Access	Read only
Description	This attribute records the number of ping test failures detected, indexed by the slot numbers of the card*s* containing the bus taps involved. Each failure represents a single low-priority frame that was not successfully transmitted from the transmitting bus tap to the receiving bus tap. The bus test does *not* terminate automatically if a failure is detected.
Mib	Bus
Array of	Decimal (0..4294967295)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

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COMPONENT Shelf Test

Groups	GROUP Shelf Test Provisioned (Prov) GROUP Shelf Test Setup GROUP Shelf Test Results
Scope	Device
Description	*PcsTest* The *PcsTest* component allows automated tests of the *Shelf* to be controlled for regular execution.
Mib	Bus
Common Verbs	Help List Display

VERB RUN Shelf Test

Impact	Service
Description	*RUN Shelf Test* This verb initiates the shelf test. It executes the test specified by *type* attribute.

GROUP Shelf Test Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes of the *Test* component.
Mib	Bus

ATTRIBUTE Shelf Test automaticBusClockTest (clockTest)

Access	Read and write
Description	This attribute specifies whether or not a bus clock source test is automatically executed after a clock source's LP state changes, and after failure or recovery of the active CP bus clock source. Since tests of an alternate bus clock source may cause a minor loss of traffic, the attribute is set to ***disabled*** by default. If set to ***enabled,*** a bus clock source test is automatically executed. If the status of the corresponding *Shelf Bus clockSourceStatus* is changed after the test, an alarm is issued if the status is one of the following: ***ok, failed,*** or ***unknown***. If set to ***disabled***, no bus clock source test is automatically executed. However, a test can be executed by the *RUN* command. If the status is changed after the test, an alarm is issued if the status is one of the following: ***ok***, or ***failed***.
Mib	Bus

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Values	enabled disabled
Default	disabled

GROUP Shelf Test Setup

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a shelf test.
Mib	Bus

ATTRIBUTE Shelf Test type

Access	Read and write
Description	type The attribute determines the test to be executed when the *RUN* command is applied to the component. Note that running a ***busClock*** test may cause a minor loss of traffic.
Mib	Bus
Values	busClock
Default	busClock

GROUP Shelf Test Results

Properties	Operational
Description	This attribute group contains the results of the *Shelf Test* that is currently running; if no test is running, the attribute group contains the results of the most recently completed *Shelf Test*. The attributes of the *Results* group are reset to their initial values whenever a corresponding *Shelf Test* is run or the corresponding attribute of the *Setup* group is set.
Mib	Bus

ATTRIBUTE Shelf Test busClockTestResult (busClock)

Access	Read only
Description	busClockTestResult This attribute records the result of the bus clock manual test. The result can be one of the following values. ***pass*** : the test passed ***fail*** : the test failed ***noTest*** : the test was not executed when *RUN* command is issued, because the shelf was in single bus mode.
Mib	Bus

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Values	pass fail noTest
Default	No default

COMPONENT Shelf FabricCard

Instance	x y
Groups	GROUP Shelf FabricCard OsiState (State) GROUP Shelf FabricCard Property (Prop) GROUP Shelf FabricCard Operational (Oper) GROUP Shelf FabricCard Errors GROUP Shelf FabricCard Banks
Scope	Device
Description	*Shelf FabricCard/f* This component represents a hardware resource within a module that cards can use to communicate with each other. Data to be transferred between cards is broken up into one or more cells by the sending card, and reassembled by the receiving card. A module's *FabricCard* components are created automatically, and cannot be added or deleted.
Mib	Fabric
Dyn. Subcomp.	COMPONENT Shelf FabricCard Test COMPONENT Shelf FabricCard CardPort
Common Verbs	Help List Display LOCK Unlock

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VERB INSTALL **Shelf FabricCard**

Impact	Service
Description	*Install* -file(***s***) *Shelf FabricCard*/***n*** This verb initiates loading new software in to the writable bank of the fabric card. If the fabric card is already loading, the command has no effect and the loading continues. The fabric card must be locked and the fixed bank must be active before the loading of the writable bank can be started. Loading should only take a few seconds. The software to be loaded must first be downloaded from the SDS site using *Sw Dld*. Software loading of the fabric card is rare and does not need to be done on every upgrade. All software running on this node will be compatible with any software running in the fabric card. However later releases of the fabric card software contain enhancements, robustness features, and new functionality. An alarm is raised whenever a newer version of the fabric card software is available than that which is active in the fabric card. The alarm indicates which software should be loaded onto the fabric card. Again, it is not necessary to upgrade the software on the fabric card, but the switch will run more efficiently if it is. Any failures in loading the software either indicates corrupt software, bad hardware on the fabric card, or a malfunctioning secondary control bus (SCB). On failure repeat the *Install* and look for errors and alarms indicating faulty hardware. As a general rule, it is best to perform fabric card software loading when the switch is most idle. Both fabric cards should always be running the same software. If one fabric card is loaded with new software then the other fabric card should also be loaded with this new software. An alarm is raised when there is a mismatch in the software running on the two fabric cards.

GROUP **Shelf FabricCard** **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Fabric

ATTRIBUTE **Shelf FabricCard** **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Fabric

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Shelf FabricCard operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Fabric

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf FabricCard usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — Fabric

Values — idle
active (activ)
busy

Default — idle

ATTRIBUTE Shelf FabricCard availabilityStatus (osiAvail)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions,

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the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — Fabric

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Shelf FabricCard proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Fabric

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Shelf FabricCard controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Fabric

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

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Default	No default

ATTRIBUTE Shelf FabricCard alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Fabric
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Shelf FabricCard standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

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The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Fabric
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf FabricCard unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Fabric
Values	false true
Default	false

GROUP Shelf FabricCard Property (Prop)

Properties	Operational
Description	This attribute group indicates property attributes of a fabric card.
Mib	Fabric

ATTRIBUTE Shelf FabricCard productCode

Access	Read only
Description	This attribute indicates the product code (that is the PEC and revision codes) of the fabric card.
Mib	Fabric

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Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Shelf FabricCard serialNumber

Access	Read only
Description	This attribute indicates the serial number of the fabric card.
Mib	Fabric
Values	String (0..16, ASCII)
Default	No default

GROUP Shelf FabricCard Operational (Oper)

Properties	Operational
Description	This attribute group contains operational attributes of a *FabricCard* component.
Mib	Fabric

ATTRIBUTE Shelf FabricCard failureCause

Access	Read only
Description	This attribute indicates why the *fabric card* has failed. This attribute is meaningful when the OSI *availabilityStatus* attribute is set to ***failed***. Possible values are: ***queueFull***: The fabric card buffers are full. ***notInserted***: The fabric card is not inserted. ***failedSelfTest***: The fabric card has failed its self test. ***internalFailure***: The fabric card has internal ASIC failure. ***notResponding***: The fabric card is not responding. ***highTemperature***: The fabric card is running at high temperature. ***powerProblem***: The fabric card has a power problem. ***fabricStateUnknown***: The fabric card is inserted, but it is in an unknown state.
Mib	Fabric
Set of	queueFull notInserted failedSelfTest internalFailure notResponding highTemperature powerProblem fabricStateUnknown
Default	No default

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ATTRIBUTE Shelf FabricCard utilization

Access	Read only
Description	This attribute indicates an approximation of the current fabric utilization.
Mib	Fabric
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf FabricCard operatingTemperature

Access	Read only
Description	This attribute indicates the current fabric operating temperature. When the temperature reaches the value specified by the *temperatureThreshold* attribute, the fabric card generates an alarm.
Mib	Fabric
Values	Decimal (0.1..64.0) zeroOrLessDegreeC
Units	degreeC
Default	No default

ATTRIBUTE Shelf FabricCard secondaryControlBusStatus

Access	Read only
Description	This attribute indicates the state of the fabric's secondary control bus (SCB). It may contain any combination of the following values: ***operational*** - The SCB is operational. ***locked*** - The SCB is being manually prevented from operating. ***noBus*** - The bus is down. ***failed*** - The SCB is disabled due to fault. ***bestEffort*** - The SCB is ignoring faults to allow a single channel to be operational. ***hardwareFailure*** - The bus failed due to an HSCX hardware error. ***parityOrCrcError*** - The bus failed due to a CRC error or a parity error. ***timeOutError*** - The bus failed due to an SSC message time-out. ***txOrRxError*** - The bus failed due to Tx or Rx problems. ***pollError*** - The bus failed an SCB poll. ***testMessageError*** - The bus failed a fabric card test.

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Mib	Fabric
Set of	operational locked noBus failed bestEffort hardwareFailure parityOrCrcError timeOutError txOrRxError pollError testMessageError
Default	No default

ATTRIBUTE Shelf FabricCard selfTestResults

Access	Read only
Description	This attribute indicates the result of the most recent execution of the fabric card's self-tests, performed either when it initially came up, or during operation. A value of 0 indicates success, and a non-zero value indicates a failure or and absent fabric card.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard dependencyInEffect

Access	Read only
Description	This attribute indicates why the fabric card has failed. This attribute is meaningful when the OSI *availabilityStatus* attribute is set to ***depend***. Possible values are: ***portDisabled***: Card port or fabric port is disabled. ***fabricCardLocked***: The fabric card is locked.
Mib	Fabric
Set of	portDisabled fabricCardLocked
Default	No default

ATTRIBUTE Shelf FabricCard voltageAFeedDetected

Access	Read only
Description	This attribute indicates if the fabric card is detecting current on power feed A. If it is not, check that the breaker is not turned off.
Mib	Fabric

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Values	yes no
Default	No default

ATTRIBUTE Shelf FabricCard voltageBFeedDetected

Access	Read only
Description	This attribute indicates if the fabric card is detecting current on power feed B. If it is not, check that the breaker is not turned off.
Mib	Fabric
Values	yes no
Default	No default

ATTRIBUTE Shelf FabricCard temperatureThreshold

Access	Read only
Description	This attributes indicates at which temperature the fabric card generates a temperature alarm.
Mib	Fabric
Values	Decimal (0.1..100.0)
Units	degreeC
Default	No default

ATTRIBUTE Shelf FabricCard secondaryControlBusCardBustaps

Access	Read only
Description	Each processor card has a bus tap on both of the system's secondary control buses. This indicates the state of each processor card's bus tap onto the secondary control bus for which clocking is supplied by this fabric card. Possible values are: ***ok*** - The SCB is operational. ***hardwareFailure - The bus failed due to an HSCX hardware error.*** ***parityOrCrcErrors - The bus failed due to a CRC error or a parity error.*** ***timeOutError - The bus failed due to an SSC message time-out.*** ***txOrRxError - The bus failed due to Tx or Rx problems.*** ***pollError - The bus failed an SCB poll.*** ***none*** - The processor card is not available.

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Mib	Fabric
Vector of	ok hardwareFailure parityOrCrcErrors timeOutError txOrRxError pollError none
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf FabricCard secondaryControlBusFabricBustaps

Access	Read only
Description	Each fabric card has a bus tap on both of the system's secondary control buses. This indicates the state of each fabric card's bus tap onto the secondary control bus for which clocking is supplied by this fabric card. The enumerated values describe the state of the each bus tap. Possible values are: ***ok*** - The SCB is operational. ***txOrRxError*** - The bus failed due to Tx or Rx problems. ***pollError*** - The bus failed an SCB poll. ***testMessageError - The bus failed a fabric card test.*** ***none - The processor card is not available.*** ***unknown - The state cannot be determined due to faulty bustap on CP.***
Mib	Fabric
Vector of	ok txOrRxError pollError testMessageError none unknown
Index	x y
Default	No default

GROUP Shelf FabricCard Errors

Properties	Operational
Description	This attribute group indicates errors that the fabric card has detected since the card was last rebooted. This information is intended for use in detecting and diagnosing the fabric-related problems within a module.
Mib	Fabric

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ATTRIBUTE Shelf FabricCard **voltageErrors**

Access	Read only
Description	This attribute counts the voltage errors detected on the fabric. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard **temperatureErrors**

Access	Read only
Description	This attribute counts the temperature errors encountered on the fabric card. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard **fabricInternalErrors**

Access	Read only
Description	This attribute counts the internal errors encountered on the fabric card. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard **fabricInterfaceCrcErrors**

Access	Read only
Description	This attribute counts the CRC errors detected by the fabric card when receiving data from other cards. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

GROUP Shelf FabricCard **Banks**

Properties	Operational

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Description	This group contains the attributes that govern the operation of a fabric card banks. These attributes cannot be changed while the fabric card writable bank is loading.
Mib	Fabric

ATTRIBUTE Shelf FabricCard fixedBankVersion

Access	Read only
Description	This attribute indicates what the fabric card software version in the fixed bank is. It is zero during start-up. After start-up it is queried from the fabric card.
Mib	Fabric
Values	Decimal (0.0..99.9)
Default	No default

ATTRIBUTE Shelf FabricCard writableBankVersion

Access	Read only
Description	This attribute indicates the software version that is loaded on the writable bank. It is zero if there is no version loaded.
Mib	Fabric
Values	Decimal (0.0..99.9)
Default	No default

ATTRIBUTE Shelf FabricCard recommendedVersionToInstall

Access	Read only
Description	This attribute indicates the recommended fabric application version to install using the *Install* command. If the current active software is up-to-date, it indicates no version is needed to install.
Mib	Fabric
Values	String (0..49, ASCII)
Default	No default

ATTRIBUTE Shelf FabricCard activeBank

Access	Read and write
Description	This attribute indicates which bank is the currently running. The writable bank can only be made active if it has been installed using the *Install* command at least once. ***writable***: Indicates the writable bank is the active bank. ***fixed***: Indicates the fixed bank is the active bank.

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unknown: The software has not yet determined which is the active bank. This normally takes a few seconds when the software is first activated.

Mib — Fabric

Values — fixed
writable
unknown

Default — No default

ATTRIBUTE Shelf FabricCard bankOnShelfRestart

Access — Read only

Description — This attribute indicates which bank will be running when the shelf is reset or powered-down and then powered-up.

writable: Indicates the writable bank will be the bank on the next power up or reset.
fixed: Indicates the fixed bank will be the bank on the next power up or reset.
unknown: The software has not yet determined which is the bank on shelf restart. This normally takes a few seconds when the software is first activated.

Mib — Fabric

Values — fixed
writable
unknown

Default — No default

ATTRIBUTE Shelf FabricCard writableBankStatus

Access — Read only

Description — This attribute specifies the current status of the writable bank. It is set to ***unknown*** until the status is determined by the software. It takes a few seconds at software activation time to determine the status of the writable bank.

unknown: The switch has not yet determined the state of the writable bank. This happens only within the first few seconds the software is activated.
empty: No (valid) software is loaded in the writable bank.
loading: Software is currently loading into the writable bank.
loaded: The software has successfully loaded.

An example of a transition sequence for the writable bank status is: ***unknown*** -> ***empty***-> ***loading*** -> ***loaded***-> ***loading***.

On a failure, the status reverts to the previous status that was successful.

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For example if the ***loading*** fails, the status returns to ***empty***.

Mib	Fabric
Values	unknown empty loading loaded
Default	No default

ATTRIBUTE Shelf FabricCard downloadProgressPercent

Access	Read only
Description	This attribute indicates relative progress of a fabric software download as a percentage. When ***writableBankStatus*** is loading the value is between 0 and 100 inclusive. When ***writableBankStatus*** is ***empty*** or ***unknown*** the value is 0. When ***writableBankStatus*** is loaded it is 100.
Mib	Fabric
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Shelf FabricCard Test

Groups	GROUP Shelf FabricCard Test OsiState (State) GROUP Shelf FabricCard Test Setup GROUP Shelf FabricCard Test Results
Scope	Device
Description	*Shelf FabricCard/b Test* This component is used to verify the operation of a fabric card. A fabric card test may be run as part of a regular maintenance program, or to diagnose the cause of a fabric-related problem. The *Test* component is created automatically, and cannot be added or deleted. When the *type* attribute is set to ***main***, the fabric card test ensures that the fabric ports on a specific fabric card are functioning properly at minimal utilization rates. The fabric card to be tested must be locked while testing is in progress. The test only involves fabric ports on operational cards (active and standby LPs). If an operational card becomes non-operational or fails to respond during the test, it is dropped from the test and is not allowed to rejoin; however, the results of any tests on its fabric port up to that point are preserved. The results of the test can help to determine which portions of the fabric card system are faulty, if any. A ***main*** type of fabric card test comprises several different tests. The tests are performed in the following order:

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self test: The fabric card performs its self-test.
port test: The fabric port
broadcast test: Each fabric port ensures that it can receive a broadcast frame over the fabric card from every operational card (including itself).
ping test: Each fabric port ensures that it can receive a low priority non-broadcast frame over the backplane from every operational card (including itself).

Once all of the tests have been performed, the ping test is repeated continuously until the fabric card test is terminated; this repetition helps to detect transient fabric faults.

When the *type* attribute is set to ***scbPoll,*** the fabric card test ensures that the X and Y fabric bus taps and the function processor bus taps on a corresponding secondary control bus (SCB) are functioning properly. The test can be run without locking the fabric card. This test only involves SCB bus taps on operational cards (active and standby LPs) and the SCB bus taps on the fabric cards. If an operational card becomes non-operational or fails to respond during the test, it is removed from the test. The results of the test can help to determine which portions of the SCB are faulty, if any.

A ***scbPoll*** type of fabric card test comprises several SCB poll queries which run continuously for the duration of the test. At the reception of a poll query, each SCB bus tap ensures that it can receive a frame over the SCB from every operational card, including itself and the fabrics.

The fabric test stops automatically after a specified time interval, or if it detects a self-test failure, a port test failure, or a broadcast test failure.

Mib	Fabric
Common Verbs	Help List Display

VERB START Shelf FabricCard Test

Impact	Service
Description	*start Shelf FabricCard/f Test* This verb initiates the fabric card test. If the fabric card test is already running, the command has no effect and the test continues. The fabric card must be locked before the test can be run.

VERB STOP Shelf FabricCard Test

Impact	Service
Description	*stop Shelf FabricCard/b Test* This verb terminates the fabric card test. If the fabric card test is not running, the command has no effect.

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GROUP Shelf FabricCard Test **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Fabric

ATTRIBUTE Shelf FabricCard Test **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Fabric
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf FabricCard Test **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Fabric
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf FabricCard Test **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Fabric
Values	idle active (activ) busy
Default	idle

GROUP Shelf FabricCard Test **Setup**

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a fabric card or fabric port test. These attributes cannot be changed while the fabric card or fabric port test is running.
Mib	Fabric

ATTRIBUTE Shelf FabricCard Test **duration**

Access	Read and write
Description	This attribute specifies the maximum length of time that the fabric card test is allowed to run. The maximum allowed value permits the fabric card test to be run for up to 30 days.
Mib	Fabric
Values	Decimal (1..43200)
Units	minutes
Default	2

ATTRIBUTE Shelf FabricCard Test **type**

Access	Read and write

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Description	This attribute specifies the type of the test to be run. When this attribute is set to ***main***, a subsequent fabric card test verifies that the fabric ports on this card and the corresponding cards ports are functioning properly. When this attribute is set to ***scbPoll***, a subsequent fabric card test exercises all the secondary control bus (SCB) bus taps in the system corresponding to the fabric card under test.
Mib	Fabric
Values	main scbPoll
Default	main

GROUP **Shelf FabricCard Test** **Results**

Properties	Operational
Description	This attribute group contains the results of the fabric card test that is currently running; if no fabric card test is running, the attribute group contains the results of the most recently completed fabric card test. The attributes of the *Results* group are reset to their initial values whenever a fabric card test is started or any attribute in the *Setup* group is set.
Mib	Fabric

ATTRIBUTE **Shelf FabricCard Test** **elapsedTime**

Access	Read only
Description	This attribute indicates the length of time that the fabric card test has been running.
Mib	Fabric
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE **Shelf FabricCard Test** **timeRemaining**

Access	Read only
Description	This attribute indicates the maximum length of time that the fabric card test runs before stopping.
Mib	Fabric
Values	Decimal (0..43200)
Units	minutes
Default	No default

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ATTRIBUTE Shelf FabricCard Test **causeOfTermination**

Access	Read only
Description	This attribute indicates the reason the fabric card test ended. It contains one of the following values: ***neverStarted***: The fabric card test has not been started. ***testRunning***: The fabric card test is currently running. ***testTimeExpired***: The fabric card test ran for the specified duration. ***stoppedByOperator***: A stop command was issued. ***portTestFailure***: A failure was detected during the port test. ***fabricSelfTestFailure***: A failure was detected during the fabric card self-test. ***broadcastFailure***: A failure was detected during the broadcast test.
Mib	Fabric
Values	neverStarted testRunning testTimeExpired stoppedByOperator portTestFailure fabricSelfTestFailure broadcastFailure
Default	No default

ATTRIBUTE Shelf FabricCard Test **testsDone**

Access	Read only
Description	This attribute indicates the tests that have been performed during the fabric card test. It contains zero or more of the following values: ***selfTest***: The fabric card self-test has been performed. ***portTest***: The port test has been performed. ***broadcastTest***: The broadcast test has been performed. ***pingTest***: At least one ping test has been performed. This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Set of	selfTest portTest broadcastTest pingTest
Default	No default

ATTRIBUTE Shelf FabricCard Test **fabricSelfTestResults**

Access	Read only
Description	This attribute indicates the results of the fabric's self test. The fabric test terminates automatically if a failure is detected.

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ok: The fabric self test is passed.
failed: The fabric self test is failed.
noTest: The default value indicates no self test is performed.

This attribute is displayed only when the *type* attribute is set to ***main***

Mib	Fabric
Values	ok failed noTest
Default	No default

ATTRIBUTE Shelf FabricCard Test **numberOfScbPolls**

Access	Read only
Description	This attribute indicates the number of times the secondary control bus taps are polled since the start of the fabric card test. This attribute is displayed only when the *type* attribute is set to ***scbPoll***
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard Test **portTestResults**

Access	Read only
Description	This attribute indicates the results of the fabric port, indexed by the slot number of the card containing the fabric port tested. Each entry contains one of the following values. ***+***: the port passed its test ***X***: the port failed its test **.**: the port was not tested The fabric card test terminates automatically if a failure is detected. This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Vector of	+ (pass) X (fail) . (noTest)
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf FabricCard Test **broadcastTestResults**

Access	Read only

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Description	This attribute indicates the results of the broadcast test, indexed by the slot numbers of the cards containing the fabric port tested. Each entry contains one of the following values. ***+***: a broadcast message was successfully sent from the transmitting fabric port to the receiving fabric port ***X***: a broadcast message was not successfully sent from the transmitting fabric port to the receiving fabric port **.**: the associated pair of fabric ports was not tested The fabric card test terminates automatically if a failure is detected. This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Array of	+ (pass) X (fail) . (noTest)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE **Shelf FabricCard Test** **pingTests**

Access	Read only
Description	This attribute indicates the number of ping tests performed, indexed by the slot numbers of the cards containing the fabric ports involved. Each test attempts to transmit a single low-priority frame from the transmitting fabric port to the receiving fabric port. This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Array of	Decimal (0..4294967295)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE **Shelf FabricCard Test** **pingTestFailures (pingFailures)**

Access	Read only
Description	This attribute indicates the number of ping test failures detected, indexed by the slot numbers of the cards containing the fabric ports involved. Each failure represents a single low-priority frame that was not successfully transmitted from the transmitting fabric port to the receiving fabric port. The fabric card test does *not* terminate automatically if a failure is detected.

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	This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Array of	Decimal (0..4294967295)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf FabricCard Test scbCardBustapsFailures (scbFailures)

Access	Read only
Description	This attribute indicates the number of secondary control bus (SCB) card bus tap failures, indexed by the slot numbers of the cards containing the bus tap involved. The SCB test does *not* terminate automatically if a failure is detected. This attribute is displayed only when the *type* attribute is set to ***scbPoll***
Mib	Fabric
Vector of	Decimal (0..4294967295)
Index	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	No default

ATTRIBUTE Shelf FabricCard Test scbFabricBustapsFailures

Access	Read only
Description	This attribute indicates the number of times the secondary control bus (SCB) fabric bus tap failures of the corresponding fabric card. The SCB test does *not* terminate automatically if a failure is detected This attribute is displayed only when the *type* attribute is set to ***scbPoll***

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Mib	Fabric
Vector of	Decimal (0..4294967295)
Index	x y
Default	No default

COMPONENT Shelf FabricCard CardPort

Instance	Decimal (0..15)
Groups	GROUP Shelf FabricCard CardPort OsiState (State) GROUP Shelf FabricCard CardPort Operational (Oper) GROUP Shelf FabricCard CardPort CardPortErrors
Scope	Device
Description	*Shelf FabricCard/f cardPort/n* This component represents a physical port on a fabric card. A card port is the interface to the cards; it provides a pathway for the fabric card to send cells to the processor cards in the module and to receive cells sent to it from the processor cards. A fabric card's *CardPort* components are created automatically, can not be added or deleted.
Mib	Fabric
Common Verbs	Help List Display

GROUP Shelf FabricCard CardPort OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Fabric

ATTRIBUTE Shelf FabricCard CardPort adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock*

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command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Fabric

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Shelf FabricCard CardPort operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Fabric

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf FabricCard CardPort usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — Fabric

Values — idle
active (activ)
busy

Default — idle

ATTRIBUTE Shelf FabricCard CardPort **availabilityStatus (osiAvail)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

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The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — Fabric

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Shelf FabricCard CardPort **proceduralStatus (osiProc)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is

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not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — Fabric

Set of
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Shelf FabricCard CardPort **controlStatus (osiCntrl)**

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — Fabric

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

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ATTRIBUTE Shelf FabricCard CardPort **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Fabric
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Shelf FabricCard CardPort **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service

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but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib — Fabric

Values
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default — notSet

ATTRIBUTE Shelf FabricCard CardPort **unknownStatus (osiUnknw)**

Access — Read only

Description — This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib — Fabric

Values
false
true

Default — false

GROUP Shelf FabricCard CardPort **Operational (Oper)**

Properties — Operational

Description — This attribute group contains operational attributes of a card port. This information outlines what the card port is doing and why it is doing it and is primarily intended for use in diagnosing the cause of a port-related problem reported by the module.

Mib — Fabric

ATTRIBUTE Shelf FabricCard CardPort **failuresInEffect**

Access — Read only

Description — This attribute indicates the hardware problems that prevent the *CardPort* from using the fabric. It may contain any combination of the following

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values.
selfTest: The port has failed its self-test.
crcError: The port has detected too many CRC errors.
signalLoss: The serial link receiver is not receiving a signal. That is, the electrical connection to the far end transmitter is not valid.
flowControlViolation: An unacceptable number of flow control violation errors have occurred.
synchronizationLoss: The serial link's phase or alignment is lost. Therefore, the port's synchronization is lost.
queueFull: The output queue is full.
syncLoss: The card port has lost synchronization with the fabric port.

Mib	Fabric
Set of	selfTest crcError signalLoss flowControlViolation synchronizationLoss queueFull syncLoss
Default	No default

ATTRIBUTE Shelf FabricCard CardPort **dependenciesInEffect**

Access	Read only
Description	This attribute indicates the non-hardware problems that prevent the port from using the associated fabric. It may contain the following values: ***fabricLocked*** - The fabric card is locked. ***fabricDisabled*** - The fabric card is disabled. ***portDisabled*** - The corresponding fabric port is disabled. ***cardNotInserted*** - The corresponding processor card is not inserted.
Mib	Fabric
Set of	fabricLocked fabricDisabled portDisabled cardNotInserted
Default	No default

GROUP Shelf FabricCard CardPort **CardPortErrors**

Properties	Operational
Description	This attribute group indicates errors that the card port has detected since the fabric card was last rebooted. This information is intended for use in detecting and diagnosing port-related problems within a module.
Mib	Fabric

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ATTRIBUTE Shelf FabricCard CardPort **selfTestErrorCode**

Access	Read only
Description	This attribute indicates the error code generated by the most recent self-test of the port.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard CardPort **dataOrAddressCrcErrors**

Access	Read only
Description	This attribute indicates the packet data or address CRC errors encountered on the port. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard CardPort **flowControlViolationErrors**

Access	Read only
Description	This attribute counts the flow control violations (that is “threshold exceeded errors”) detected on the port. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard CardPort **livelinessErrors**

Access	Read only
Description	This attribute counts the liveliness errors detected on the card port. Liveliness errors are failures to receive yellow cells within a certain period of time. The value wraps to zero when it exceeds the maximum value. *Note*: **Yellow cells** are special types of packets which are generated by the fabric port and detected by the fabric card and the fabric port in order to check the link liveness with the fabric card.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Shelf FabricCard CardPort **lossOfSignalOrSyncErrors**

Access	Read only
Description	This attribute counts the loss of signal or loss of synchronization errors on the port that caused the port to fail. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Shelf

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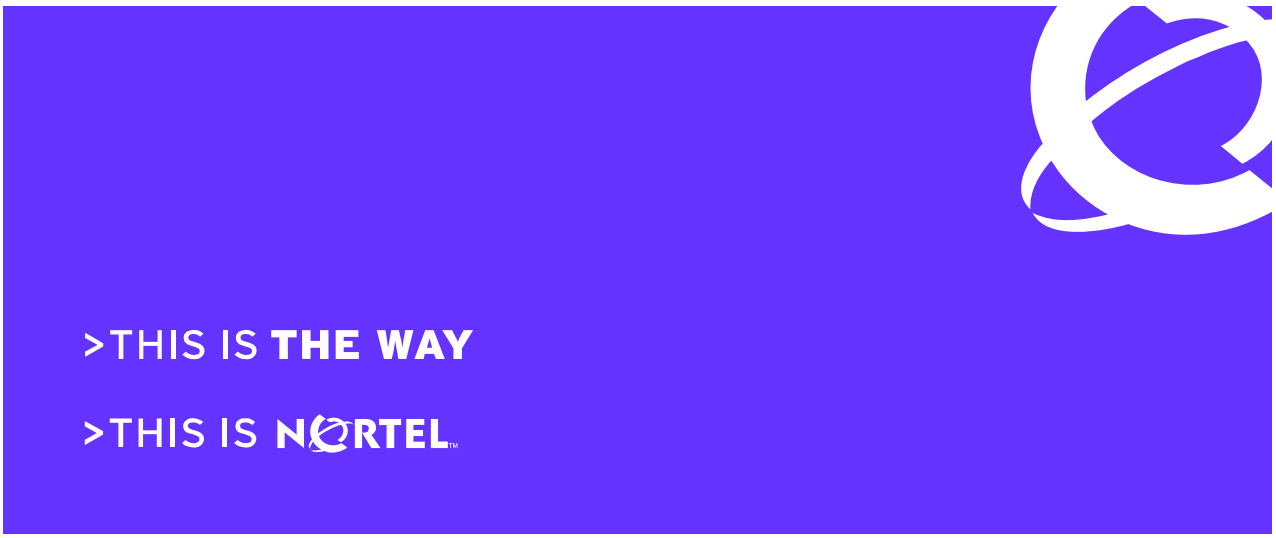

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - SigChan

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COMPONENT SignallingChannel (SigChan)

Instance	Decimal (1..153)
Groups	GROUP SigChan CustomerIdentifierData (CidData) GROUP SigChan IfEntryProv (IfEntry) GROUP SigChan OperationalStatus (OperStatus) GROUP SigChan OsiState (State) GROUP SigChan Provisioned (Prov) GROUP SigChan Operational (Oper)
Scope	Application
Description	*SigChan/n* The *SigChan* component defines the signalling characteristics of the connection to the external equipment.
Mib	VoiceNetworking
Opt. Subcomp.	COMPONENT SigChan E1Cas COMPONENT SigChan Ds1Cas COMPONENT SigChan J2Cas (J2) COMPONENT SigChan EtsiQsig (EQsig) COMPONENT SigChan NisSig (Nis) COMPONENT SigChan EuroIsdn (EIsdn) COMPONENT SigChan McdnSig (Mcdn) COMPONENT SigChan InternalCauseMap (ICmap)
Dyn. Subcomp.	COMPONENT SigChan Bchannel (Bch) COMPONENT SigChan Gateway (Gw) COMPONENT SigChan NcaSession (Ncas)
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP SigChan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VoiceNetworking

ATTRIBUTE SigChan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	VoiceNetworking
Values	Decimal (0; 1..8191)
Default	0

GROUP SigChan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	VoiceNetworking

ATTRIBUTE SigChan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing

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Default	up

ATTRIBUTE SigChan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VoiceNetworking
Values	Decimal (1..65535)
Default	No default

GROUP SigChan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VoiceNetworking

ATTRIBUTE SigChan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

GROUP SigChan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

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ATTRIBUTE SigChan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

GROUP SigChan Provisioned (Prov)

Properties	Provisioned
Description	This group represents the provisionable attributes of a *SigChan*.
Mib	VoiceNetworking

ATTRIBUTE SigChan commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, this attribute specifies the name of the customer that is using this *SigChan*.
Mib	VoiceNetworking
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE SigChan octothorpeEod (eod)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the octothorpe (number sign) should be used as an end of dialling indication. When this character is received, only the digits that have been received to that point will be used for address resolution. All subsequent digits will be forwarded to the far-end, but they will not be used. The octothorpe will not be sent to the far-end.
Mib	VoiceNetworking
Values	yes no

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Default	no

ATTRIBUTE SigChan forceNpiTon (fnt)

Access	Read: All Write: All
Description	This attribute, together with the *defaultNpiTon* attribute, controls Numbering Plan Identifier (NPI) and Type Of Number (TON) values to be used by the *SigChan* component for egress calls (if applicable). If set to ***yes***, NPI and TON values defined by the *defaultNpiTon* attribute unconditionally overwrite values received in the call setup message from the subnet.
Mib	VoiceNetworking
Values	yes no
Default	no

ATTRIBUTE SigChan defaultNpiTon (dnt)

Access	Read: All Write: All
Description	This attribute, together with the *forceNpiTon* attribute, controls Numbering Plan Identifier (NPI) and Type Of Number (TON) values to be used by the *SigChan* component for egress calls (if applicable). The combination of NPI and TON values defined by the *defaultNpiTon* attribute is used for an egress call whenever: - the call setup message received from subnet indicates that NPI or TON information is not supplied or doesn't make sense, or - attribute *forceNpiTon* is set to ***yes*** Mapping between values of the *defaultNpiTon* attribute and associated combinations of NPI and TON values follows: ***casUnknown***: NPI=unknown (0) TON=unknown (0) ***unknown***: NPI=E.164 (1) TON=unknown (0) ***international***: NPI=E.164 (1) TON=international (1) ***national***: NPI=E.164 (1) TON=national (2) ***subscriber***: NPI=E.164 (1) TON=subscriber (4) ***p0***: NPI=private(9) TON=0 ***p1***: NPI=private(9) TON=1 ***p2***: NPI=private(9) TON=2 ***p3***: NPI=private(9) TON=3 ***p4***: NPI=private(9) TON=4 ***p5***: NPI=private(9) TON=5 ***p6***: NPI=private(9) TON=6 ***p7***: NPI=private(9) TON=7
Mib	VoiceNetworking
Values	unknown international

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	national subscriber p0 p1 p2 p3 p4 p5 p6 p7 casUnknown
Default	casUnknown

ATTRIBUTE SigChan subroutes

Access	Read: All Write: All
Description	This attribute identifies all of the *VoiceSubroute*s which are associated with this signalling channel.
Mib	VoiceNetworking
List of	Link (Service, signallingChannel)
List Size	4
Default	No default

GROUP SigChan Operational (Oper)

Properties	Operational
Description	This group provides the operational components for the *SigChan* component.
Mib	VoiceNetworking

ATTRIBUTE SigChan degradedSubroutes

Access	Read: All Write: Illegal
Description	This attribute lists all of the *VoiceSubroute* components that do not have all of their *SwitchedVoiceService* subcomponents available for use.
Mib	VoiceNetworking
List of	The name of the component
List Size	4
Default	No default

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COMPONENT SigChan E1Cas

Groups	GROUP SigChan E1Cas Provisioned (Prov) GROUP SigChan E1Cas AbcdProv GROUP SigChan E1Cas TimerProv GROUP SigChan E1Cas LinkCallStatistics
	COLLECTED STATS SignallingChannel E1Cas
Scope	Application
Description	*SigChan/n E1Cas* This component defines the A,AB or ABCD bits, Digit reception and transmission and tone generation for a E1 Cas link.
Mib	VoiceNetworking
Subcomponents	COMPONENT SigChan E1Cas Framer (Framer)
Opt. Subcomp.	COMPONENT SigChan E1Cas Dtmf
Dyn. Subcomp.	COMPONENT SigChan E1Cas TimeSlotStatus (Tslot)
Common Verbs	Help List Display Add DELete

GROUP SigChan E1Cas Provisioned (Prov)

Properties	Provisioned
Description	This group conatins attirbutes that defines various settings that do not fall under any other group.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas toneTableSelection

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which tone table to select when a call is to receive a given tone. 0 for North America 1 for Japan 2 for United Kingdom 3 for Germany 4 for France 5 for Central America (Brazil, Mexico) 6 for Chile 7 for Autralia

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Mib	VoiceNetworking
Values	Decimal (0..7)
Default	2

GROUP SigChan E1Cas AbcdProv

Properties	Provisioned
Description	This group specifies the attributes that define what the A,AB or ABCD pattern for a particular signal should be.The input is a 1 or 2 or 4 bit (0 or 1) format of ABCD. Depending on the framing format of the E1, some bits may be ignored.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas signallingBits

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which bits are to be used for interpretation. (A,AB or ABCD).
Mib	VoiceNetworking
Values	A AB ABCD
Default	ABCD

ATTRIBUTE SigChan E1Cas idleTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the idle signal is when transmitted. This signal must be different from the *connectTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010

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0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 1001

ATTRIBUTE SigChan E1Cas idleRx

Access
Read: All
Write: All

Criticality
Process

Description
This attribute specifies what the value is, in ABCD terms, of the idle signal when received. This signal must be different from the *connectRx* signal.

Mib
VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 1001

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ATTRIBUTE SigChan E1Cas faultTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when transmitted. It is transmitted when the timeslot is undefined or locked. This signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	1101

ATTRIBUTE SigChan E1Cas faultRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when received. When received, the channel status for the timeslot goes to a lockout state. This signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1 00

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01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 1101

ATTRIBUTE SigChan E1Cas seizeTx

Access
Read: All
Write: All

Criticality
Process

Description
This attribute specifies what the value is, in ABCD terms, of the seize signal when transmitted. There is no Voice or Data call distinction unless it is provided by a leading *Discrimination* digit. This signal can not be defined if the *seizeVoiceTx* or *seizeVoiceRx* or *seizeDataTx* or *seizeDataRx* signals are defined. The *seizeRx* must also be defined along with this signal. If defined, the signal must be different from the *idleTx* signal.

Mib
VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111

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1000
1001
1010
1011
1100
1101
1110
1111
unused

Default 0001

ATTRIBUTE SigChan E1Cas seizeRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize signal when received. There is no Voice or Data call distinction unless it is provided by a leading *Discrimination* digit. This signal can not be defined if the *seizeVoiceTx* or *seizeVoiceRx* or *seizeDataTx* or *seizeDataRx* signals are defined. The *seizeTx* must also be defined along with this signal. If defined, the signal must be different from the *idleRx* signal.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

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Default	0001

ATTRIBUTE SigChan E1Cas seizeVoiceTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when transmitted. This signal when transmitted identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceRx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan E1Cas seizeVoiceRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when received. This signal when received identifies

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	the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceTx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataRx* and *idleRx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan E1Cas seizeDataTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when transmitted. This signal when transmitted identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataRx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01

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10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan E1Cas seizeDataRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize Data signal when received. This signal when received identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataTx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceRx* and *idleRx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000

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1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan E1Cas seizeAckTx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment signal when transmitted. If defined, the value of the signal must be different from the *idleTx* and the *connectTx* signals.

Mib VoiceNetworking

Values 0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default 1101

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ATTRIBUTE SigChan E1Cas seizeAckRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment when received. If defined, the value of the signal must be different from the *idleRx* and the *connectRx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	1101

ATTRIBUTE SigChan E1Cas winkTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the wink signal when transmitted. This is a pulsed signal of *winkTime* duration. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A, AB or ABCD pattern before the start of transmission.
Mib	VoiceNetworking
Values	P PX

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XP
PXXX
XPXX
XXPX
XXXP
unused
PP
PPXX
PXPX
PXXP
XPPX
XPXP
XXPP
PPPX
PPXP
PXPP
XPPP
PPPP

Default unused

ATTRIBUTE SigChan E1Cas winkRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the wink signal when received. This pulsed signal must be within the *winkMinTime* and *winkMaxTime* before it is considered as valid. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A, AB or ABCD pattern before the start of reception.

Mib VoiceNetworking

Values
P
PX
XP
PXXX
XPXX
XXPX
XXXP
unused
PP
PPXX
PXPX
PXXP
XPPX
XPXP
XXPP
PPPX
PPXP

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PXPP
XPPP
PPPP

Default unused

ATTRIBUTE SigChan E1Cas connectTx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when transmitted. The value of the signal must be different from the *idleTx* signal.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 0101

ATTRIBUTE SigChan E1Cas connectRx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when received. The value of the signal must be different from the *idleRx* signal.

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Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	0101

ATTRIBUTE SigChan E1Cas clearBackTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear back signal when transmitted. This signal is sent, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* and *connectTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100

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0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default 1101

ATTRIBUTE SigChan E1Cas clearBackRx

Access
Read: All
Write: All

Criticality
Process

Description
This attribute specifies what the value is, in ABCD terms, of the clear back signal when received. This signal is received, if defined, on an outgoing call to the link when the link side first initiates the disconnect sequence. This value, if used, must be different from the *idleRx* and *connectRx* signal.

Mib
VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

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Default	1101

ATTRIBUTE SigChan E1Cas clearFwdTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear forward signal when transmitted. This signal is sent, if defined, on an outgoing call to the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* signal and any transmitted seize signal defined.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan E1Cas clearFwdRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear forward signal when received. This signal is received, if defined, on an incoming call from the link when the network side first

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	initiates the disconnect sequence. This value, if used, must be different from *idleRx* signal and any transmitted seize signal defined.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

GROUP SigChan E1Cas TimerProv

Properties	Provisioned
Description	This group contains the various timers used by *Ds1Cas* component to handle a particular timing events.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas guardTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time needed after a channel is idled before it is made available for the next outgoing call to the link.
Mib	VoiceNetworking
Values	Decimal (50..30000)
Units	msec

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Default	1000

ATTRIBUTE SigChan E1Cas winkTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time that a *winkTx* signal is transmitted. This attribute is only referenced if the *winkTx* signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	220

ATTRIBUTE SigChan E1Cas winkMinTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the minimum time that a *winkRx* signal, when received, must persist before being considered as a valid wink. Anything less is ignored. This value must be less than *winkMaxTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	130

ATTRIBUTE SigChan E1Cas winkMaxTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a *winkRx* signal, when received, may persist before it is interpreted as a GLARE condition. This value must be larger than the *winkMinTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	300

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ATTRIBUTE SigChan E1Cas seizeAckDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the delay, after receiving any particular seize signal, before responding with a *seizeAckTx* or *winkTx* signal
Mib	VoiceNetworking
Values	Decimal (30..3000)
Units	msec
Default	180

ATTRIBUTE SigChan E1Cas seizeAckSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time, on an outgoing call to the link, the network will wait to receive a *seizeAckRx* or a *winkRx* signal. Should this timer time-out, the call is considered as a seize failure. This timer is not started unless either the *seizeAckRx* or a *winkRx* signals are defined.
Mib	VoiceNetworking
Values	Decimal (1000..15000)
Units	msec
Default	4000

ATTRIBUTE SigChan E1Cas outpulseDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of delay, after transmitting any seize signal, before digit transmission begins. If the *seizeAckRx* or *winkRx* signal is defined, the timer is started upon complete reception of the signal. If the *seizeAckRx* or *winkRx* signal are not defined, the timer is started immediately after sending any particular seize signal.
Mib	VoiceNetworking
Values	Decimal (100..30000)
Units	msec

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Default	400

ATTRIBUTE SigChan E1Cas endOfDialTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed between digits after which any more digits are to be ignored.
Mib	VoiceNetworking
Values	Decimal (1000..30000)
Units	msec
Default	9000

ATTRIBUTE SigChan E1Cas disconnectTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time that a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) must persist before it is interpreted as a valid disconnect signal.
Mib	VoiceNetworking
Values	Decimal (10..30000)
Units	msec
Default	500

ATTRIBUTE SigChan E1Cas disconnectSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed for the link to respond with a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) once the network has already started the disconnect sequence.
Mib	VoiceNetworking
Values	Decimal (1000..60000)
Units	msec
Default	35000

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GROUP SigChan E1Cas LinkCallStatistics

Properties	Operational
Description	This group contains the operational statistics on various call events on the link.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas totalCallsOutgoing

Access	Read only
Description	This attribute counts the outgoing node call attempts made to this link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas totalCallsIncoming

Access	Read only
Description	This attribute counts the incoming link call attempts made to this node. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas outgoingAnsweredCalls

Access	Read only
Description	This attribute counts the outgoing node calls to this link that were answered by the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas incomingAnsweredCalls

Access	Read only
Description	This attribute counts the incoming link calls that were answered by this node. That is a connect signal was transmitted by this node out to the link.

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The counter wraps to zero when it exceeds its maximum value.

Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas seizeFailures

Access	Read only
Description	This attribute counts the outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal. That is, no seizure acknowledgment or wink was returned from link. This attribute does not count calls that encountered glare. Glare situations are counted via the *glareCalls* attribute. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas releaseFailures

Access	Read only
Description	This attribute counts the times that the link failed to respond correctly during the disconnect sequence of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas activeChannels

Access	Read only
Description	This attribute counts the current number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE SigChan E1Cas peakActiveChannels

Access	Read only
Description	This attribute counts the peak number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas glareCalls

Access	Read only
Description	This attribute counts the outgoing node call attempts to the link that encountered glare. Glare occurs when an outgoing node call attempt and an incoming link call attempt occur on the same channel simultaneously. Priority is given to the incoming call and the outgoing call is reattempted on another channel. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

COLLECTED STATS SignallingChannel E1Cas

Description	The statistics record generated by the SignallingChannel E1Cas component.

ATTRIBUTE SigChan E1Cas totalCallsOutgoing

Description	This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas totalCallsIncoming

Description	This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas seizeFailures

Description	This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

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Values Decimal (0..65535)

ATTRIBUTE SigChan E1Cas releaseFailures

Description This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan E1Cas outgoingAnsweredCalls

Description This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan E1Cas incomingAnsweredCalls

Description This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan E1Cas peakActiveChannels

Description This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values Decimal (0..30)

COMPONENT SigChan E1Cas Framer (Framer)

Groups GROUP SigChan E1Cas Framer Provisioned (Prov)
GROUP SigChan E1Cas Framer OsiState (State)

Scope Application

Description *SigChan/n Ds1Cas Framer*
SigChan/n E1Cas Framer
SigChan/n J2Cas Framer
The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface

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datapath statistics (such as frame counts and aborts).

Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan E1Cas Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VoiceNetworking
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan E1Cas Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas Framer adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan E1Cas Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan E1Cas Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib VoiceNetworking

Values
idle
active (activ)
busy

Default idle

COMPONENT SigChan E1Cas Dtmf

Groups GROUP SigChan E1Cas Dtmf Provisioned (Prov)

Scope Application

Description
SigChan/n Ds1Cas Dtmf
SigChan/n E1Cas Dtmf
SigChan/n J2Cas Dtmf
This component defines attributes that defines what settings are need to recognize and transmit DTMF tones.

Mib VoiceNetworking

Common Verbs
Help
List
Display
Add
DELete

GROUP SigChan E1Cas Dtmf Provisioned (Prov)

Properties Provisioned

Description This group contains attributes that defines what settings are needed to transmit and recognize DTMF tones.

Mib VoiceNetworking

ATTRIBUTE SigChan E1Cas Dtmf burstTime

Access
Read: All
Write: All

Criticality Process

Description
This attribute specifies the length of time a tone persists for digit transmission.
When a 50ms burst is selected, the inter-digit time is 50ms.
When a 60ms burst is selected, the inter-digit time is 90ms.
When a 70ms burst is selected, the inter-digit time is 80ms.
When a 100ms burst is selected, the inter-digit time is 100ms.

Mib VoiceNetworking

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Values	Decimal (50; 60; 70; 100)
Units	msec
Default	100

COMPONENT SigChan E1Cas TimeSlotStatus (Tslot)

Instance	Decimal (1..31)
Groups	GROUP SigChan E1Cas Tslot Channels
Scope	Application
Description	*SigChan/n Ds1Cas Tslot/n* *SigChan/n E1Cas Tslot/n* *SigChan/n J2Cas Tslot/n* This component contains replicated attribute which displays operational attributes of individual time slots.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan E1Cas Tslot Channels

Properties	Operational
Description	This group contains various operational attributes of every channel which is serviced by a CAS Signalling Channel.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas Tslot maintenanceStatus

Access	Read only
Description	This attribute specifies what the internal current channel status is. The attribute “Status” may have the following values: UnDefined, time slot has not yet been configured Locked, time slot has been locked by the operator LockOut, time slot is busied out due to some protocol failure Incoming, time slot is currently being used for a call incoming to the node Outgoing, time slot is currently being used for a call outgoing from the network Idle, time slot is currently available for use.
Mib	VoiceNetworking
Values	IDLE BUSY LCKO MBUSY

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DSBL
UNEQ
UNKNOWN
INVALID

Default — No default

ATTRIBUTE SigChan E1Cas Tslot receivedBits

Access — Read only

Description — This attribute specifies what are the raw A, AB or ABCD bits being received.

Mib — VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default — No default

ATTRIBUTE SigChan E1Cas Tslot receivedSignal

Access — Read only

Description — This attribute indicates what signal the *rxBits* are being interpreted as.

Mib — VoiceNetworking

Values
IDLE
FAULT
SEIZE
SEIZEV
SEIZED
SEZACK

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	WINK CONN CLRBCK CLRFWD BUSY UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan E1Cas Tslot transmitedBits

Access	Read only
Description	This attribute indicates what are the raw A, AB or ABCD bits being transmitted.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	No default

ATTRIBUTE SigChan E1Cas Tslot transmitedSignal

Access	Read only
Description	This attribute indicates what signal the *txBits* are being interpreted as.
Mib	VoiceNetworking
Values	IDLE FAULT SEIZE

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SEIZEV
SEIZED
SEZACK
WINK
CONN
CLRBCK
CLRFWD
BUSY
UNKNOWN
INVALID

Default — No default

COMPONENT SigChan Ds1Cas

Groups
GROUP SigChan Ds1Cas Provisioned (Prov)
GROUP SigChan Ds1Cas AbcdProv
GROUP SigChan Ds1Cas TimerProv
GROUP SigChan Ds1Cas LinkCallStatistics
GROUP SigChan Ds1Cas Discrimination (Discr)

COLLECTED STATS SignallingChannel Ds1Cas

Scope — Application

Description — *SigChan/n Ds1Cas*
This component defines the A,AB or ABCD bits, Digit reception and transmission and tone generation for a Ds1 Cas link.

Mib — VoiceNetworking

Subcomponents — COMPONENT SigChan Ds1Cas Framer (Framer)

Opt. Subcomp. — COMPONENT SigChan Ds1Cas Dtmf

Dyn. Subcomp. — COMPONENT SigChan Ds1Cas TimeSlotStatus (Tslot)

Common Verbs
Help
List
Display
Add
DELete

GROUP SigChan Ds1Cas Provisioned (Prov)

Properties — Provisioned

Description — This group conatins attirbutes that defines various settings that do not fall under any other group.

Mib — VoiceNetworking

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ATTRIBUTE SigChan Ds1Cas toneTableSelection

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which tone table to select when a call is to receive a given tone. 0 for North America 1 for Japan 2 for United Kingdom 3 for Germany 4 for France 5 for Central America (Brazil, Mexico) 6 for Chile 7 for Autralia
Mib	VoiceNetworking
Values	Decimal (0..7)
Default	0

GROUP SigChan Ds1Cas AbcdProv

Properties	Provisioned
Description	This group specifies the attributes that define what the A,AB or ABCD pattern for a particular signal should be.The input is a 1 or 2 or 4 bit (0 or 1) format of ABCD. Depending on the framing format of the DS1 some bits may be ignored.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas signallingBits

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which bits are to be used for interpretation. (A,AB or ABCD).
Mib	VoiceNetworking
Values	A AB ABCD
Default	AB

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ATTRIBUTE SigChan Ds1Cas idleTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the idle signal is when transmitted. This signal must be different from the *connectTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	00

ATTRIBUTE SigChan Ds1Cas idleRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the idle signal when received. This signal must be different from the *connectRx* signal.
Mib	VoiceNetworking
Values	0 1 00 01

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10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 00

ATTRIBUTE SigChan Ds1Cas faultTx

Access
Read: All
Write: All

Criticality
Process

Description
This attribute specifies what the value is, in ABCD terms, of the fault signal when transmitted. It is transmitted when the timeslot is undefined or locked. This signal must be different from the *idleTx* signal.

Mib
VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100

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1101
1110
1111

Default 11

ATTRIBUTE SigChan Ds1Cas faultRx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the fault signal when received. When received, the channel status for the timeslot goes to a lockout state. This signal must be different from the *idleRx* signal.

Mib VoiceNetworking

Values 0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 11

ATTRIBUTE SigChan Ds1Cas seizeTx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize signal when transmitted. There is no Voice or Data call distinction unless it is provided by a leading *Discrimination* digit. This

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signal can not be defined if the *seizeVoiceTx* or *seizeVoiceRx* or *seizeDataTx* or *seizeDataRx* signals are defined. The *seizeRx* must also be defined along with this signal. If defined, the signal must be different from the *idleTx* signal.

Mib: VoiceNetworking

Values:
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default: 11

ATTRIBUTE SigChan Ds1Cas seizeRx

Access: Read: All
Write: All

Criticality: Process

Description: This attribute specifies what the value is, in ABCD terms, of the seize signal when received. There is no Voice or Data call distinction unless it is provided by a leading *Discrimination* digit. This signal can not be defined if the *seizeVoiceTx* or *seizeVoiceRx* or *seizeDataTx* or *seizeDataRx* signals are defined. The *seizeTx* must also be defined along with this signal. If defined, the signal must be different from the *idleRx* signal.

Mib: VoiceNetworking

Values:
0
1
00
01

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10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default 11

ATTRIBUTE SigChan Ds1Cas seizeVoiceTx

Access
Read: All
Write: All

Criticality
Process

Description
This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when transmitted. This signal when transmitted identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceRx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataTx* and *idleTx* signals.

Mib
VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111

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1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas seizeVoiceRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when received. This signal when received identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceTx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataRx* and *idleRx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

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ATTRIBUTE SigChan Ds1Cas seizeDataTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when transmitted. This signal when transmitted identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataRx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan Ds1Cas seizeDataRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when received. This signal when received identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataTx*, *seizeVoiceRx* and *seizeVoiceTx*

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must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceRx* and *idleRx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas seizeAckTx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment signal when transmitted. If defined, the value of the signal must be different from the *idleTx* and the *connectTx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011

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0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas seizeAckRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment when received. If defined, the value of the signal must be different from the *idleRx* and the *connectRx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

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Default	unused

ATTRIBUTE SigChan Ds1Cas winkTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the wink signal when transmitted. This is a pulsed signal of *winkTime* duration. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A, AB or ABCD pattern before the start of transmission.
Mib	VoiceNetworking
Values	P PX XP PXXX XPXX XXPX XXXP unused PP PPXX PXPX PXXP XPPX XPXP XXPP PPPX PPXP PXPP XPPP PPPP
Default	unused

ATTRIBUTE SigChan Ds1Cas winkRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the wink signal when received. This pulsed signal must be within the *winkMinTime* and *winkMaxTime* before it is considered as valid. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A, AB or ABCD pattern before the start of reception.
Mib	VoiceNetworking

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Values	P PX XP PXXX XPXX XXPX XXXP unused PP PPXX PXPX PXXP XPPX XPXP XXPP PPPX PPXP PXPP XPPP PPPP
Default	unused

ATTRIBUTE SigChan Ds1Cas connectTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when transmitted. The value of the signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010

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1011
1100
1101
1110
1111

Default 11

ATTRIBUTE SigChan Ds1Cas connectRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when received. The value of the signal must be different from the *idleRx* signal.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 11

ATTRIBUTE SigChan Ds1Cas clearBackTx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the clear back signal when transmitted. This signal is sent, if defined, on

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an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* and *connectTx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas clearBackRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the clear back signal when received. This signal is received, if defined, on an outgoing call to the link when the link side first initiates the disconnect sequence. This value, if used, must be different from the *idleRx* and *connectRx* signal.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000

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0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas clearFwdTx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the clear forward signal when transmitted. This signal is sent, if defined, on an outgoing call to the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* signal and any transmitted seize signal defined.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100

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1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas clearFwdRx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the clear forward signal when received. This signal is received, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from *idleRx* signal and any transmitted seize signal defined.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

GROUP SigChan Ds1Cas TimerProv

Properties Provisioned

Description This group contains the various timers used by *Ds1Cas* component to handle a particular timing events.

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Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas guardTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time needed after a channel is idled before it is made available for the next outgoing call to the link.
Mib	VoiceNetworking
Values	Decimal (50..30000)
Units	msec
Default	1000

ATTRIBUTE SigChan Ds1Cas winkTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time that a *winkTx* signal is transmitted. This attribute is only referenced if the *winkTx* signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	220

ATTRIBUTE SigChan Ds1Cas winkMinTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the minimum time that a *winkRx* signal, when received, must persist before being considered as a valid wink. Anything less is ignored. This value must be less than *winkMaxTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	130

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ATTRIBUTE SigChan Ds1Cas winkMaxTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a *winkRx* signal, when received, may persist before it is interpreted as a GLARE condition. This value must be larger than the *winkMinTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	300

ATTRIBUTE SigChan Ds1Cas seizeAckDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the delay, after receiving any particular seize signal, before responding with a *seizeAckTx* or *winkTx* signal
Mib	VoiceNetworking
Values	Decimal (30..3000)
Units	msec
Default	1000

ATTRIBUTE SigChan Ds1Cas seizeAckSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time, on an outgoing call to the link, the network will wait to receive a *seizeAckRx* or a *winkRx* signal. Should this timer time-out, the call is considered as a seize failure. This timer is not started unless either the *seizeAckRx* or a *winkRx* signals are defined.
Mib	VoiceNetworking
Values	Decimal (1000..15000)
Units	msec
Default	4000

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ATTRIBUTE SigChan Ds1Cas outpulseDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of delay, after transmitting any seize signal, before digit transmission begins. If the *seizeAckRx* or *winkRx* signal is defined, the timer is started upon complete reception of the signal. If the *seizeAckRx* or *winkRx* signal are not defined, the timer is started immediately after sending any particular seize signal.
Mib	VoiceNetworking
Values	Decimal (100..30000)
Units	msec
Default	400

ATTRIBUTE SigChan Ds1Cas endOfDialTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed between digits after which any more digits are to be ignored.
Mib	VoiceNetworking
Values	Decimal (1000..30000)
Units	msec
Default	9000

ATTRIBUTE SigChan Ds1Cas disconnectTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time that a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) must persist before it is interpreted as a valid disconnect signal.
Mib	VoiceNetworking
Values	Decimal (10..30000)
Units	msec
Default	500

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ATTRIBUTE SigChan Ds1Cas disconnectSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed for the link to respond with a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) once the network has already started the disconnect sequence.
Mib	VoiceNetworking
Values	Decimal (1000..60000)
Units	msec
Default	35000

GROUP SigChan Ds1Cas LinkCallStatistics

Properties	Operational
Description	This group contains the operational statistics on various call events on the link.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas totalCallsOutgoing

Access	Read only
Description	This attribute counts the outgoing node call attempts made to this link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas totalCallsIncoming

Access	Read only
Description	This attribute counts the incoming link call attempts made to this node. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas outgoingAnsweredCalls

Access	Read only

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Description	This attribute counts the outgoing node calls to this link that were answered by the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas incomingAnsweredCalls

Access	Read only
Description	This attribute counts the incoming link calls that were answered by this node. That is a connect signal was transmitted by this node out to the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas seizeFailures

Access	Read only
Description	This attribute counts the outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal. That is, no seizure acknowledgment or wink was returned from link. This attribute does not count calls that encountered glare. Glare situations are counted via the *glareCalls* attribute. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas releaseFailures

Access	Read only
Description	This attribute counts the times that the link failed to respond correctly during the disconnect sequence of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE SigChan Ds1Cas activeChannels

Access	Read only
Description	This attribute counts the current number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas peakActiveChannels

Access	Read only
Description	This attribute counts the peak number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas glareCalls

Access	Read only
Description	This attribute counts the outgoing node call attempts to the link that encountered glare. Glare occurs when an outgoing node call attempt and an incoming link call attempt occur on the same channel simultaneously. Priority is given to the incoming call and the outgoing call is reattempted on another channel. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

GROUP SigChan Ds1Cas Discrimination (Discr)

Properties	Provisioned
Description	This group provides the attributes necessary to implement voice and data call discrimination via the first received or transmitted digit of a call.
Mib	VoiceNetworking

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ATTRIBUTE SigChan Ds1Cas voiceDataDiscr

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether voice and data calls are to be identified via the *voiceCallDigit* or *dataCallDigit*.
Mib	VoiceNetworking
Values	off on
Default	off

ATTRIBUTE SigChan Ds1Cas voiceCallDigit

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the digit that will identify a call to be a voice call via the first digit. This value must be different than *dataCallDigit*.
Mib	VoiceNetworking
Values	Decimal (0..9)
Default	1

ATTRIBUTE SigChan Ds1Cas dataCallDigit

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the digit that will identify a call to be a data call via the first digit. This value must be different than *voiceCallDigit*.
Mib	VoiceNetworking
Values	Decimal (0..9)
Default	2

COLLECTED STATS SignallingChannel Ds1Cas

Description	The statistics record generated by the SignallingChannel Ds1Cas component.

ATTRIBUTE SigChan Ds1Cas totalCallsOutgoing

Description	This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.

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Values Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas totalCallsIncoming

Description This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas seizeFailures

Description This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

Values Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas releaseFailures

Description This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas outgoingAnsweredCalls

Description This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas incomingAnsweredCalls

Description This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas peakActiveChannels

Description This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values Decimal (0..30)

COMPONENT SigChan Ds1Cas Framer (Framer)

Groups GROUP SigChan Ds1Cas Framer Provisioned (Prov)
GROUP SigChan Ds1Cas Framer OsiState (State)

Scope Application

Description *SigChan/n Ds1Cas Framer*
SigChan/n E1Cas Framer

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SigChan/n J2Cas Framer
The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib VoiceNetworking

Common Verbs
Help
List
Display

GROUP SigChan Ds1Cas Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib VoiceNetworking

ATTRIBUTE SigChan Ds1Cas Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib VoiceNetworking

Values Link (Hardware, applicationFramerName)

Default No default

GROUP SigChan Ds1Cas Framer OsiState (State)

Properties Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Ds1Cas Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE SigChan Ds1Cas Framer **usageState (osiUsage)**

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT SigChan Ds1Cas **Dtmf**

Groups	GROUP SigChan Ds1Cas Dtmf Provisioned (Prov)
Scope	Application
Description	*SigChan/n Ds1Cas Dtmf* *SigChan/n E1Cas Dtmf* *SigChan/n J2Cas Dtmf* This component defines attributes that defines what settings are need to recognize and transmit DTMF tones.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP SigChan Ds1Cas Dtmf **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains attributes that defines what settings are needed to transmit and recognize DTMF tones.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas Dtmf **burstTime**

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Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time a tone persists for digit transmission. When a 50ms burst is selected, the inter-digit time is 50ms. When a 60ms burst is selected, the inter-digit time is 90ms. When a 70ms burst is selected, the inter-digit time is 80ms. When a 100ms burst is selected, the inter-digit time is 100ms.
Mib	VoiceNetworking
Values	Decimal (50; 60; 70; 100)
Units	msec
Default	100

COMPONENT SigChan Ds1Cas TimeSlotStatus (Tslot)

Instance	Decimal (1..24)
Groups	GROUP SigChan Ds1Cas Tslot Channels
Scope	Application
Description	*SigChan/n Ds1Cas Tslot/n* *SigChan/n E1Cas Tslot/n* *SigChan/n J2Cas Tslot/n* This component contains replicated attribute which displays operational attributes of individual time slots.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan Ds1Cas Tslot Channels

Properties	Operational
Description	This group contains various operational attributes of every channel which is serviced by a CAS Signalling Channel.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas Tslot maintenanceStatus

Access	Read only
Description	This attribute specifies what the internal current channel status is. The attribute “Status” may have the following values: UnDefined, time slot has not yet been configured

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	Locked, time slot has been locked by the operator LockOut, time slot is busied out due to some protocol failure Incoming, time slot is currently being used for a call incoming to the node Outgoing, time slot is currently being used for a call outgoing from the network Idle, time slot is currently available for use.
Mib	VoiceNetworking
Values	IDLE BUSY LCKO MBUSY DSBL UNEQ UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan Ds1Cas Tslot receivedBits

Access	Read only
Description	This attribute specifies what are the raw A, AB or ABCD bits being received.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	No default

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ATTRIBUTE SigChan Ds1Cas Tslot receivedSignal

Access	Read only
Description	This attribute indicates what signal the *rxBits* are being interpreted as.
Mib	VoiceNetworking
Values	IDLE FAULT SEIZE SEIZEV SEIZED SEZACK WINK CONN CLRBCK CLRFWD BUSY UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan Ds1Cas Tslot transmitedBits

Access	Read only
Description	This attribute indicates what are the raw A, AB or ABCD bits being transmitted.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101

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1110
1111

Default — No default

ATTRIBUTE SigChan Ds1Cas Tslot transmitedSignal

Access — Read only

Description — This attribute indicates what signal the *txBits* are being interpreted as.

Mib — VoiceNetworking

Values
IDLE
FAULT
SEIZE
SEIZEV
SEIZED
SEZACK
WINK
CONN
CLRBCK
CLRFWD
BUSY
UNKNOWN
INVALID

Default — No default

COMPONENT SigChan J2Cas (J2)

Groups
GROUP SigChan J2 Provisioned (Prov)
GROUP SigChan J2 AbcdProv
GROUP SigChan J2 TimerProv
GROUP SigChan J2 LinkCallStatistics

COLLECTED STATS SignallingChannel J2Cas

Scope — Application

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Description	*SigChan/n J2Cas* This component defines the A,AB or ABCD bits, Digit reception and transmission and tone generation for a J2 Cas link.
Mib	VoiceNetworking
Subcomponents	COMPONENT SigChan J2 Framer (Framer)
Opt. Subcomp.	COMPONENT SigChan J2 Dtmf
Dyn. Subcomp.	COMPONENT SigChan J2 TimeSlotStatus (Tslot)
Common Verbs	Help List Display Add DELete

GROUP SigChan J2 Provisioned (Prov)

Properties	Provisioned
Description	This group conatins attirbutes that defines various settings that do not fall under any other group.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 toneTableSelection

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which tone table to select when a call is to receive a given tone. 0 for North America 1 for Japan 2 for United Kingdom 3 for Germany 4 for France 5 for Central America (Brazil, Mexico) 6 for Chile 7 for Autralia
Mib	VoiceNetworking
Values	Decimal (0..7)
Default	1

GROUP SigChan J2 AbcdProv

Properties	Provisioned

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Description	This group specifies the attributes that define what the A bit pattern for a particular signal should be. The input is a 1 bit (0 or 1) format.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 signallingBits

Access	Read only
Criticality	Process
Description	This attribute specifies which bits are to be used for interpretation. (A,AB or ABCD).
Mib	VoiceNetworking
Values	A AB ABCD
Default	A

ATTRIBUTE SigChan J2 idleTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the idle signal is when transmitted. This signal must be different from the *connectTx* signal.
Mib	VoiceNetworking
Values	0 1
Default	1

ATTRIBUTE SigChan J2 idleRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the idle signal when received. This signal must be different from the *connectRx* signal.
Mib	VoiceNetworking
Values	0 1
Default	1

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ATTRIBUTE SigChan J2 faultTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when transmitted. It is transmitted when the timeslot is undefined or locked. This signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 faultRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when received. When received, the channel status for the timeslot goes to a lockout state. This signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 seizeTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the seize signal when transmitted. This signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

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ATTRIBUTE SigChan J2 seizeRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the seize signal when received. This signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 seizeVoiceTx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when transmitted. This signal when transmitted identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceRx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 seizeVoiceRx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when received. This signal when received identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceTx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataRx* and *idleRx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

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ATTRIBUTE SigChan J2 seizeDataTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when transmitted. This signal when transmitted identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataRx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 seizeDataRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when received. This signal when received identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataTx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceRx* and *idleRx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 seizeAckTx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment signal when transmitted. If defined, the value of the signal must be different from the *idleTx* and the *connectTx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

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ATTRIBUTE SigChan J2 seizeAckRx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment when received. If defined, the value of the signal must be different from the *idleRx* and the *connectRx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 winkTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the wink signal when transmitted. This is a pulsed signal of *winkTime* duration. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A bit pattern before the start of transmission.
Mib	VoiceNetworking
Values	P unused
Default	P

ATTRIBUTE SigChan J2 winkRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the wink signal when received. This pulsed signal must be within the *winkMinTime* and *winkMaxTime* before it is considered as valid. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A bit pattern before the start of reception.
Mib	VoiceNetworking
Values	P unused
Default	P

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ATTRIBUTE SigChan J2 connectTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when transmitted. The value of the signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 connectRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when received. The value of the signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 clearBackTx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear back signal when transmitted. This signal is sent, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* and *connectTx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

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ATTRIBUTE SigChan J2 clearBackRx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear back signal when received. This signal is received, if defined, on an outgoing call to the link when the link side first initiates the disconnect sequence. This value, if used, must be different from the *idleRx* and *connectRx* signal.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 clearFwdTx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear forward signal when transmitted. This signal is sent, if defined, on an outgoing call to the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* signal and any transmitted seize signal defined.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 clearFwdRx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear forward signal when received. This signal is received, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from *idleRx* signal and any transmitted seize signal defined.
Mib	VoiceNetworking
Values	unused
Default	unused

GROUP SigChan J2 TimerProv

Properties	Provisioned

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Description	This group contains the various timers used by *Ds1Cas* component to handle a particular timing events.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 guardTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time needed after a channel is idled before it is made available for the next outgoing call to the link.
Mib	VoiceNetworking
Values	Decimal (0..30000)
Units	msec
Default	1000

ATTRIBUTE SigChan J2 winkTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time that a *winkTx* signal is transmitted. This attribute is only referenced if the *winkTx* signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	220

ATTRIBUTE SigChan J2 winkMinTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the minimum time that a *winkRx* signal, when received, must persist before being considered as a valid wink. Anything less is ignored. This value must be less than *winkMaxTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec

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Default	130

ATTRIBUTE SigChan J2 winkMaxTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a *winkRx* signal, when received, may persist before it is interpreted as a GLARE condition. This value must be larger than the *winkMinTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	300

ATTRIBUTE SigChan J2 seizeAckDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the delay, after receiving any particular seize signal, before responding with a *seizeAckTx* or *winkTx* signal
Mib	VoiceNetworking
Values	Decimal (30..30000)
Units	msec
Default	180

ATTRIBUTE SigChan J2 seizeAckSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time, on an outgoing call to the link, the network will wait to receive a *seizeAckRx* or a *winkRx* signal. Should this timer time-out, the call is considered as a seize failure. This timer is not started unless either the *seizeAckRx* or a *winkRx* signals are defined.
Mib	VoiceNetworking
Values	Decimal (1000..15000)
Units	msec
Default	4000

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ATTRIBUTE SigChan J2 outpulseDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of delay, after transmitting any seize signal, before digit transmission begins. If the *seizeAckRx* or *winkRx* signal is defined, the timer is started upon complete reception of the signal. If the *seizeAckRx* or *winkRx* signal are not defined, the timer is started immediately after sending any particular seize signal.
Mib	VoiceNetworking
Values	Decimal (100..30000)
Units	msec
Default	1000

ATTRIBUTE SigChan J2 endOfDialTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed between digits after which any more digits are to be ignored.
Mib	VoiceNetworking
Values	Decimal (1000..30000)
Units	msec
Default	9000

ATTRIBUTE SigChan J2 disconnectTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time that a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) must persist before it is interpreted as a valid disconnect signal.
Mib	VoiceNetworking
Values	Decimal (10..30000)
Units	msec
Default	500

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ATTRIBUTE SigChan J2 disconnectSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed for the link to respond with a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) once the network has already started the disconnect sequence.
Mib	VoiceNetworking
Values	Decimal (1000..60000)
Units	msec
Default	35000

GROUP SigChan J2 LinkCallStatistics

Properties	Operational
Description	This group contains the operational statistics on various call events on the link.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 totalCallsOutgoing

Access	Read only
Description	This attribute counts the outgoing node call attempts made to this link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 totalCallsIncoming

Access	Read only
Description	This attribute counts the incoming link call attempts made to this node. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 outgoingAnsweredCalls

Access	Read only

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Description	This attribute counts the outgoing node calls to this link that were answered by the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 incomingAnsweredCalls

Access	Read only
Description	This attribute counts the incoming link calls that were answered by this node. That is a connect signal was transmitted by this node out to the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 seizeFailures

Access	Read only
Description	This attribute counts the outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal. That is, no seizure acknowledgment or wink was returned from link. This attribute does not count calls that encountered glare. Glare situations are counted via the *glareCalls* attribute. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 releaseFailures

Access	Read only
Description	This attribute counts the times that the link failed to respond correctly during the disconnect sequence of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE SigChan J2 activeChannels

Access	Read only
Description	This attribute counts the current number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 peakActiveChannels

Access	Read only
Description	This attribute counts the peak number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 glareCalls

Access	Read only
Description	This attribute counts the outgoing node call attempts to the link that encountered glare. Glare occurs when an outgoing node call attempt and an incoming link call attempt occur on the same channel simultaneously. Priority is given to the incoming call and the outgoing call is reattempted on another channel. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

COLLECTED STATS SignallingChannel J2Cas

Description	The statistics record generated by the SignallingChannel J2Cas component.

ATTRIBUTE SigChan J2 totalCallsOutgoing

Description	This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.
Values	Decimal (0..65535)

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ATTRIBUTE SigChan J2 totalCallsIncoming

Description — This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan J2 seizeFailures

Description — This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

Values — Decimal (0..65535)

ATTRIBUTE SigChan J2 releaseFailures

Description — This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan J2 outgoingAnsweredCalls

Description — This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan J2 incomingAnsweredCalls

Description — This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan J2 peakActiveChannels

Description — This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values — Decimal (0..30)

COMPONENT SigChan J2 Framer (Framer)

Groups — GROUP SigChan J2 Framer Provisioned (Prov)
GROUP SigChan J2 Framer OsiState (State)

Scope — Application

Description — *SigChan/n Ds1Cas Framer*
SigChan/n E1Cas Framer
SigChan/n J2Cas Framer
The *Framer* component controls link layer framing for application

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components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan J2 Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VoiceNetworking
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan J2 Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the

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component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib VoiceNetworking

ATTRIBUTE SigChan J2 Framer adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib VoiceNetworking

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE SigChan J2 Framer operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib VoiceNetworking

Values enabled (ena)
disabled (dis)

Default disabled

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ATTRIBUTE SigChan J2 Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT SigChan J2 Dtmf

Groups	GROUP SigChan J2 Dtmf Provisioned (Prov)
Scope	Application
Description	*SigChan/n Ds1Cas Dtmf* *SigChan/n E1Cas Dtmf* *SigChan/n J2Cas Dtmf* This component defines attributes that defines what settings are need to recognize and transmit DTMF tones.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP SigChan J2 Dtmf Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes that defines what settings are needed to transmit and recognize DTMF tones.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 Dtmf burstTime

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Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time a tone persists for digit transmission. When a 50ms burst is selected, the inter-digit time is 50ms. When a 60ms burst is selected, the inter-digit time is 90ms. When a 70ms burst is selected, the inter-digit time is 80ms. When a 100ms burst is selected, the inter-digit time is 100ms.
Mib	VoiceNetworking
Values	Decimal (50; 60; 70; 100)
Units	msec
Default	100

COMPONENT SigChan J2 TimeSlotStatus (Tslot)

Instance	Decimal (1..31)
Groups	GROUP SigChan J2 Tslot Channels
Scope	Application
Description	*SigChan/n Ds1Cas Tslot/n* *SigChan/n E1Cas Tslot/n* *SigChan/n J2Cas Tslot/n* This component contains replicated attribute which displays operational attributes of individual time slots.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan J2 Tslot Channels

Properties	Operational
Description	This group contains various operational attributes of every channel which is serviced by a CAS Signalling Channel.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 Tslot maintenanceStatus

Access	Read only
Description	This attribute specifies what the internal current channel status is. The attribute “Status” may have the following values: UnDefined, time slot has not yet been configured

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	Locked, time slot has been locked by the operator LockOut, time slot is busied out due to some protocol failure Incoming, time slot is currently being used for a call incoming to the node Outgoing, time slot is currently being used for a call outgoing from the network Idle, time slot is currently available for use.
Mib	VoiceNetworking
Values	IDLE BUSY LCKO MBUSY DSBL UNEQ UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan J2 Tslot receivedBits

Access	Read only
Description	This attribute specifies what are the raw A, AB or ABCD bits being received.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	No default

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ATTRIBUTE SigChan J2 Tslot receivedSignal

Access	Read only
Description	This attribute indicates what signal the *rxBits* are being interpreted as.
Mib	VoiceNetworking
Values	IDLE FAULT SEIZE SEIZEV SEIZED SEZACK WINK CONN CLRBCK CLRFWD BUSY UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan J2 Tslot transmitedBits

Access	Read only
Description	This attribute indicates what are the raw A, AB or ABCD bits being transmitted.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101

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1110
1111

Default — No default

ATTRIBUTE SigChan J2 Tslot transmitedSignal

Access — Read only

Description — This attribute indicates what signal the *txBits* are being interpreted as.

Mib — VoiceNetworking

Values
IDLE
FAULT
SEIZE
SEIZEV
SEIZED
SEZACK
WINK
CONN
CLRBCK
CLRFWD
BUSY
UNKNOWN
INVALID

Default — No default

COMPONENT SigChan EtsiQsig (EQsig)

Groups
GROUP SigChan EQsig Layer2Options (L2)
GROUP SigChan EQsig Layer3Options (L3)
GROUP SigChan EQsig Provisioned (Prov)
GROUP SigChan EQsig OsiState (State)
GROUP SigChan EQsig Statistics (Stats)
GROUP SigChan EQsig Operational (Oper)
GROUP SigChan EQsig Tools
GROUP SigChan EQsig EQsigSpecificProv
GROUP SigChan EQsig EQsigSpecificOp

COLLECTED STATS SignallingChannel EtsiQsig

Scope — Device

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Description	*SigChan/n EtsiQsig* The *EtsiQsig* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	VnetEtsiQsig
Subcomponents	COMPONENT SigChan EQsig Framer (Framer)
Common Verbs	Help List Display Add DELete

GROUP SigChan EQsig Layer2Options (L2)

Properties	Provisioned
Description	This group specifies the provisionable layer 2 attributes of the Q.931 ITU-T protocol.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer 2 enable request timer.
Mib	VnetEtsiQsig
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE SigChan EQsig t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgment.
Mib	VnetEtsiQsig
Values	Decimal (1..20)
Units	seconds
Default	1

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ATTRIBUTE SigChan EQsig n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer 2 frame.
Mib	VnetEtsiQsig
Values	Decimal (1..8)
Default	3

ATTRIBUTE SigChan EQsig t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time for which layer 2 frames may be absent. Expiry triggers a check on whether the far end is alive.
Mib	VnetEtsiQsig
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE SigChan EQsig circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of sequentially numbered I frames (that is, window size (k)) that may be unacknowledged at any given time for a SAP supporting primary rate (64kbit/s) signalling.
Mib	VnetEtsiQsig
Values	Decimal (1..127)
Default	7

GROUP SigChan EQsig Layer3Options (L3)

Properties	Provisioned
Description	This group represents the provisionable Layer 3 timer attributes of the ETSI Qsig protocol.
Mib	VnetEtsiQsig

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ATTRIBUTE SigChan EQsig t309

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the data link failure timer; used to ride out temporary failures.
Mib	VnetEtsiQsig
Values	Decimal (15..120)
Units	seconds
Default	90

ATTRIBUTE SigChan EQsig t310

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the call proceeding state timer.
Mib	VnetEtsiQsig
Values	Decimal (10..120)
Units	seconds
Default	30

GROUP SigChan EQsig Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the D-channel signalling link.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig side

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the interface is the network or user side of the connection. The parameter applies to both the layer 2 and layer 3 of the interface. If this attribute is set to ***network***, then the interface is master during channel negotiation. If this attribute is set to ***user***, then the interface is slave during channel negotiation.
Mib	VnetEtsiQsig

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Values	network user
Default	network

ATTRIBUTE SigChan EQsig maxNonCallConcurrent (nonCall)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of simultaneous active non-call messages that are allowed.
Mib	VnetEtsiQsig
Values	Decimal (1..30)
Default	30

ATTRIBUTE SigChan EQsig overlapSendingEnabled (ose)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap sending to the PBX is enabled.
Mib	VnetEtsiQsig
Values	enabled disabled
Default	enabled

ATTRIBUTE SigChan EQsig overlapReceivingEnabled (ore)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap receiving from the PBX is enabled.
Mib	VnetEtsiQsig
Values	enabled disabled
Default	enabled

GROUP SigChan EQsig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the

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component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib VnetEtsiQsig

ATTRIBUTE SigChan EQsig adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib VnetEtsiQsig

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE SigChan EQsig operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib VnetEtsiQsig

Values enabled (ena)
disabled (dis)

Default disabled

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ATTRIBUTE SigChan EQsig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetEtsiQsig
Values	idle active (activ) busy
Default	idle

GROUP SigChan EQsig Statistics (Stats)

Properties	Operational
Description	This group provides the operational components for the *EtsiQsig* component.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig totalCallsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made to the interface. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the interface. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig nonCallAssocSessionsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions to the interface. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig nonCallAssocSessionsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions from the interface. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

GROUP SigChan EQsig Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the EtsiQsig protocol.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

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ATTRIBUTE SigChan EQsig activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying voice.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying data. This does not include modem data.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of voice channels that have been active on this signalling channel during the last polling period.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

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ATTRIBUTE SigChan EQsig peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of data channels that have been active on this signalling channel during the last polling period.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	VnetEtsiQsig
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP SigChan EQsig Tools

Properties	Operational
Description	This contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	VnetEtsiQsig

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ATTRIBUTE SigChan EQsig tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in *Col/debug* must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (ex. *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms. ***q931Summary*** - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes). ***q931Hex*** - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends. ***q931Symbolic*** - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link. ***portHex*** - Messages in hex format being sent and received on the link.
Mib	VnetEtsiQsig
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

GROUP SigChan EQsig EQsigSpecificProv

Properties	Provisioned
Description	This group provides EtsiQsig protocol specific provisioning.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig msgSegmentation

Access	Read: All Write: All
Criticality	Process

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Description	This attribute allows users to enable/disable the EtsiQsig message segmentation service.
Mib	VnetEtsiQsig
Values	enabled disabled
Default	disabled

ATTRIBUTE SigChan EQsig e1ChannelNumbers

Access	Read: All Write: All
Criticality	Process
Description	This attribute is applicable to E1 interfaces only. It specifies the mapping scheme between channel numbers (identified in Layer 3 messages) and time slot numbers on the E1 link. When the attribute value is ***skip16***, channel numbers map directly to actual E1 time slots; therefore only channel numbers 1 - 15 and 17 - 31 are expected. When the value is ***contiguous***, channel numbers from 1 - 30 are expected, and the following mapping is used: channels 1 - 15 are mapped to time slots 1 - 15, and channels 16 - 30 are mapped to time slots 17 - 31. On T1 interfaces, channel numbers are always expected in the range 1 - 23.
Mib	VnetEtsiQsig
Values	skip16 contiguous
Default	skip16

GROUP SigChan EQsig EQsigSpecificOp

Properties	Operational
Description	This group provides specific operational attributes for the Etsi Qsig protocol.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig segmentationAccepted

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times a long Etsi Qsig message has been received from a PBX and forwarded to a subnet.

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This counter wraps to zero when it exceeds its maximum value.

Mib VnetEtsiQsig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan EQsig segmentationFailed

Access Read: All
Write: Illegal

Description This attribute counts the total number of times a long Etsi Qsig message has been received from a PBX and could not be forwarded as is to a subnet due to end-to-end incompatibility.

This counter wraps to zero when it exceeds its maximum value.

Mib VnetEtsiQsig

Values Decimal (0..4294967295)

Default 0

COLLECTED STATS SignallingChannel EtsiQsig

Description The statistics record generated by the SignallingChannel EtsiQsig component.

ATTRIBUTE SigChan EQsig peakActiveChannels

Description This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan EQsig peakActiveVoiceChannels

Description This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan EQsig peakActiveDataChannels

Description This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

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ATTRIBUTE SigChan EQsig totalCallsToIf

Description — This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan EQsig totalCallsFromIf

Description — This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan EQsig nonCallAssocSessionsToIf

Description — This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan EQsig nonCallAssocSessionsFromIf

Description — This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan EQsig frmToIf

Description — This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig octetFromIf

Description — The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig octetToIf

Description — The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

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COMPONENT SigChan EQsig Framer (Framer)

Groups	GROUP SigChan EQsig Framer Provisioned (Prov) GROUP SigChan EQsig Framer OsiState (State) GROUP SigChan EQsig Framer Statistics (Stats)
Scope	Application
Description	*SigChan/n EQsig Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to data path aspects of the hardware interface (such as crc and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface data path statistics (such as frame counts and aborts).
Mib	VnetEtsiQsig
Common Verbs	Help List Display

GROUP SigChan EQsig Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

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Mib	VnetEtsiQsig
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan EQsig Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetEtsiQsig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan EQsig Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib VnetEtsiQsig

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE SigChan EQsig Framer usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib VnetEtsiQsig

Values idle
active (activ)
busy

Default idle

GROUP SigChan EQsig Framer Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics data for a *Framer* component.

Mib VnetEtsiQsig

ATTRIBUTE SigChan EQsig Framer frmToIf

Access Read only

Description This attribute counts the number of frames transmitted to the link interface by *Framer*.

This counter wraps to zero when it exceeds its maximum value.

Mib VnetEtsiQsig

Values Decimal (0..4294967295)

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Default	0

ATTRIBUTE SigChan EQsig Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer*. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by *Framer*.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer lrcErrors

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Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer largeFrmErrors

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Access	Read only
Description	This attribute counts the total number of frames received which were too large (longer than 500 bytes). This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

COMPONENT SigChan Bchannel (Bch)

Instance	Decimal (1..331)
Groups	GROUP SigChan Bch Operational (Oper)
Scope	Application
Description	*SigChan/n Bchannel/n* This component contains operational attributes of an individual B-channel serviced by the *SigChan* component. The *Bchannel* component instance value reflects the external (protocol specific) channel number. In nB+D configurations, channel number also reflects the related interface: *Bchannel/1-xx* - primary interface, *Bchannel/101-1xx* - secondary interface, *Bchannel/201-2xx* - tertiary interface, *Bchannel/301-3xx* - quaternary interface
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan Bch Operational (Oper)

Properties	Operational
Description	This group contains various operational attributes of a B-channel serviced by a Signalling Channel.
Mib	VoiceNetworking

ATTRIBUTE SigChan Bch status

Access	Read only
Description	This attribute indicates what is current internal B-channel state. The attribute may have the following values for any supported access signalling protocol: ***unknown***, the B-channel has not registered yet for *SigChan* services ***maintB***, the B-channel is undergoing a maintenance action ***idle***, the B-channel is available for ingress/egress calls

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busy, the B-channel is currently being used for an ingress or egress call
ingress, the B-channel is currently being used for an ingress call (from the external network to the subnet)
egress, the B-channel is currently being used for an egress call (from the subnet to the external network)

In addition, CCS protocols supporting SERVICE messaging may also use the following values:
idleMaintenance, the B-channel received a SERVICE message placing the channel in maintenance, and no calls are active on the channel
ingressMaintenance, the B-channel received a SERVICE message placing the channel in maintenance, and an incoming call is active on the channel
egressMaintenance, the B-channel received a SERVICE message placing the channel in maintenance, and an outgoing call is active on the channel
outOfService, a SERVICE message to or from the PBX has placed the channel out of service

Mib	VoiceNetworking
Values	unknown maintB idle busy ingress egress idleMaintenance ingressMaintenance egressMaintenance outOfService
Default	unknown

ATTRIBUTE SigChan Bch timeSlot

Access	Read only
Description	This attribute indicates which timeslot the B-channel uses.
Mib	VoiceNetworking
Values	Decimal (0..100)
Default	0

ATTRIBUTE SigChan Bch vsrInstance

Access	Read only
Description	This attribute indicates the component instance of the *VoiceSubroute* to which the B-channel belongs.
Mib	VoiceNetworking

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Values	Decimal (0..255)
Default	0

ATTRIBUTE SigChan Bch calledDirectoryNumber (calledDn)

Access	Read: All Write: Illegal
Description	This attribute indicates the dialled number for the currently active call on this B-channel.
Mib	VoiceNetworking
Values	BCD (1..32)
Default	No default

COMPONENT SigChan NisSig (Nis)

Groups	GROUP SigChan Nis Layer2Options (L2) GROUP SigChan Nis Layer3Options (L3) GROUP SigChan Nis Provisioned (Prov) GROUP SigChan Nis OsiState (State) GROUP SigChan Nis Statistics (Stats) GROUP SigChan Nis Operational (Oper) GROUP SigChan Nis Tools GROUP SigChan Nis NisSpecificProv

COLLECTED STATS SignallingChannel NisSig

Scope	Device
Description	*SigChan/n NisSig* The *NisSig* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	VnetNisSig
Subcomponents	COMPONENT SigChan Nis Framer (Framer)
Common Verbs	Help List Display Add DELete

GROUP SigChan Nis Layer2Options (L2)

Properties	Provisioned
Description	This group specifies the provisionable layer 2 attributes of the Q.931 ITU-T protocol.
Mib	VnetNisSig

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ATTRIBUTE SigChan Nis t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer 2 enable request timer.
Mib	VnetNisSig
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE SigChan Nis t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgment.
Mib	VnetNisSig
Values	Decimal (1..20)
Units	seconds
Default	1

ATTRIBUTE SigChan Nis n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer 2 frame.
Mib	VnetNisSig
Values	Decimal (1..8)
Default	3

ATTRIBUTE SigChan Nis t203

Access	Read: All Write: All
Criticality	Process

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Description	This attribute specifies the maximum time for which layer 2 frames may be absent. Expiry triggers a check on whether the far end is alive.
Mib	VnetNisSig
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE SigChan Nis circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of sequentially numbered I frames (that is, window size (k)) that may be unacknowledged at any given time for a SAP supporting primary rate (64kbit/s) signalling.
Mib	VnetNisSig
Values	Decimal (1..127)
Default	7

GROUP SigChan Nis Layer3Options (L3)

Properties	Provisioned
Description	This group represents the provisionable Layer 3 timer attributes of a the Nis signalling protocol.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis t309

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the data link failure timer; used to ride out temporary failures.
Mib	VnetNisSig
Values	Decimal (15..120)
Units	seconds
Default	90

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ATTRIBUTE SigChan Nis t310

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the call proceeding state timer.
Mib	VnetNisSig
Values	Decimal (10..120)
Units	seconds
Default	10

GROUP SigChan Nis Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the D-channel signalling link.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis side

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the interface is the network or user side of the connection. The parameter applies to both the layer 2 and layer 3 of the interface. If this attribute is set to ***network***, then the interface is master during channel negotiation. If this attribute is set to ***user***, then the interface is slave during channel negotiation.
Mib	VnetNisSig
Values	network user
Default	network

ATTRIBUTE SigChan Nis maxNonCallConcurrent (nonCall)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of simultaneous active non-call messages that are allowed.
Mib	VnetNisSig
Values	Decimal (1..30)

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Default	30

GROUP SigChan Nis OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetNisSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Nis operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	VnetNisSig
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan Nis usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetNisSig
Values	idle active (activ) busy
Default	idle

GROUP SigChan Nis Statistics (Stats)

Properties	Operational
Description	This group provides the operational components for the *NisSig* component.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis totalCallsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made to the interface. The value wraps when it reaches its maximum.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE SigChan Nis totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the interface. The value wraps when it reaches its maximum.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis nonCallAssocSessionsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions to the interface. The value wraps when it reaches its maximum.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis nonCallAssocSessionsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions from the interface. The value wraps when it reaches its maximum.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

GROUP SigChan Nis Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the NisSig protocol.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	VnetNisSig

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Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying voice.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying data. This does not include modem data.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of voice channels that have been active on this signalling channel during the last polling period.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

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ATTRIBUTE SigChan Nis peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of data channels that have been active on this signalling channel during the last polling period.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	VnetNisSig
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP SigChan Nis Tools

Properties	Operational
Description	This contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	VnetNisSig

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ATTRIBUTE SigChan Nis tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in *Col/debug* must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (ex. *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms. ***q931Summary*** - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes). ***q931Hex*** - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends. ***q931Symbolic*** - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link. ***portHex*** - Messages in hex format being sent and received on the link.
Mib	VnetNisSig
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

GROUP SigChan Nis NisSpecificProv

Properties	Provisioned
Description	This group provides NIS protocol specific provisioning.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis chanMaintenanceHandling (cmh)

Access	Read: All Write: All
Criticality	Process

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Description	This attribute specifies how channel maintenance events should be handled upon startup. Channel maintenance events include locking and unlocking a channel or channel registration. The decision is either to send individual channel RESTART messages, SERVICE messages, or nothing. Note that channel registration only occurs after the global interface restart at startup. Setting this attribute to enable SERVICE messages ensures that SERVICE messages occur at startup and whenever a channel goes into or out of service. If this attribute is not set to enable SERVICE messaging, a RESTART is always sent on unlocking a channel. ***globalOnStartup*** provides the minimum required functionality at startup, without any individual channel confirmation. Note that when this is set, channel RESTART is still used for channel unlock. ***globalOnStartup*** applies to *SigChan* startup only. ***serviceMessage*** enables sending and receiving SERVICE messages. If this attribute is set to ***serviceMessage***, SERVICE messages are used for channel maintenance on channel lock, channel unlock, and startup. ***restartMessage*** specifies that individual channel RESTARTs when the SigChan starts up. If this attribute is set to ***restartMessage***, a RESTART message is used to send at startup and channel unlock.
Mib	VnetNisSig
Values	globalOnStartup (gbl) serviceMessage (svc) restartMessage (rest)
Default	restartMessage

COLLECTED STATS SignallingChannel NisSig

Description	The statistics record generated by the SignallingChannel NisSig component.

ATTRIBUTE SigChan Nis peakActiveChannels

Description	This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Nis peakActiveVoiceChannels

Description	This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

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ATTRIBUTE SigChan Nis peakActiveDataChannels

Description — This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Nis totalCallsToIf

Description — This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Nis totalCallsFromIf

Description — This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Nis nonCallAssocSessionsToIf

Description — This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Nis nonCallAssocSessionsFromIf

Description — This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Nis frmToIf

Description — This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE SigChan Nis frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE SigChan Nis octetFromIf

Description — The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE SigChan Nis octetToIf

Description	The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT SigChan Nis Framer (Framer)

Groups	GROUP SigChan Nis Framer Provisioned (Prov) GROUP SigChan Nis Framer OsiState (State) GROUP SigChan Nis Framer Statistics (Stats)
Scope	Application
Description	*SigChan/n Nis Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to data path aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface data path statistics (such as frame counts and aborts).
Mib	VnetNisSig
Common Verbs	Help List Display

GROUP SigChan Nis Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis Framer interfaceName

Access	Read and write
Criticality	Process

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Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VnetNisSig
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan Nis Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetNisSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Nis Framer operationalState (osiOper)

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Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VnetNisSig
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan Nis Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetNisSig
Values	idle active (activ) busy
Default	idle

GROUP SigChan Nis Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer* component.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis Framer frmToIf

Access	Read only

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Description	This attribute counts the number of frames transmitted to the link interface by *Framer*. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer*. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by *Framer*.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. This count wraps to zero after reaching its maximum value.

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Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer **lrcErrors**

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer **nonOctetErrors**

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer **overruns**

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer **underruns**

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.

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Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received which were too large (longer than 500 bytes). This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

COMPONENT SigChan EuroIsdn (EIsdn)

Groups	GROUP SigChan EIsdn Layer2Options (L2) GROUP SigChan EIsdn Layer3Options (L3) GROUP SigChan EIsdn Provisioned (Prov) GROUP SigChan EIsdn OsiState (State) GROUP SigChan EIsdn Statistics (Stats) GROUP SigChan EIsdn Operational (Oper) GROUP SigChan EIsdn Tools GROUP SigChan EIsdn Options (Opt) GROUP SigChan EIsdn EuroSpecificProv

COLLECTED STATS SignallingChannel EuroIsdn

Scope	Device
Description	*SigChan/n EuroIsdn* The *EuroIsdn* component defines the characteristics of the signalling channel's connection to the external equipment on the Euro ISDN UNI (ETSI-T Interface).
Mib	VnetEuroIsdn
Subcomponents	COMPONENT SigChan EIsdn Framer (Framer)
Common Verbs	Help List Display Add DELete

GROUP SigChan EIsdn Layer2Options (L2)

Properties	Provisioned

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Description	This group specifies the provisionable layer 2 attributes of the Euro ISDN (ETSI-T) protocol.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies duration of the layer 2 enable request timer.
Mib	VnetEuroIsdn
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE SigChan Elsdn t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum elapsed time between a layer 2 frame and its acknowledgment.
Mib	VnetEuroIsdn
Values	Decimal (1..20)
Units	seconds
Default	1

ATTRIBUTE SigChan Elsdn n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer 2 frame.
Mib	VnetEuroIsdn
Values	Decimal (1..8)
Default	3

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ATTRIBUTE SigChan Elsdn t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time during which layer 2 frames may be absent. Expiry triggers a check on whether the far end is alive.
Mib	VnetEuroIsdn
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE SigChan Elsdn circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of sequentially numbered I frames (that is, window size (k)) that may be unacknowledged at any given time for a SAP supporting primary rate (64kbit/s) signalling.
Mib	VnetEuroIsdn
Values	Decimal (1..127)
Default	7

GROUP SigChan Elsdn Layer3Options (L3)

Properties	Provisioned
Description	This group represents the provisionable Layer 3 timer attributes of a the Euro ISDN (ETSI-T) protocol.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn t310

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies duration of the call proceeding state timer.
Mib	VnetEuroIsdn
Values	Decimal (10..120)
Units	seconds

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Default	30

GROUP SigChan Elsdn Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the D-channel signalling link.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn side

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the interface is the network or user side of the connection. The parameter applies to both the layer 2 and layer 3 of the interface. In addition, if this attribute is set to ***network***, then the interface is master during channel negotiation. If this attribute is set to ***user***, then the interface is slave during channel negotiation.
Mib	VnetEuroIsdn
Values	network user
Default	network

ATTRIBUTE SigChan Elsdn maxNonCallConcurrent (nonCall)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of simultaneous active non call-associated sessions that are allowed. Reduction of the value does not impact NCAS sessions already in progress.
Mib	VnetEuroIsdn
Values	Decimal (0..30)
Default	30

ATTRIBUTE SigChan Elsdn overlapSending (ovls)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap sending to the PBX is enabled.
Mib	VnetEuroIsdn
Values	enabled disabled

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Default	enabled

ATTRIBUTE SigChan Elsdn overlapReceiving (ovlr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap receiving from the PBX is enabled.
Mib	VnetEuroIsdn
Values	enabled disabled
Default	enabled

GROUP SigChan Elsdn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetEuroIsdn
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

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Default	unlocked

ATTRIBUTE SigChan Elsdn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VnetEuroIsdn
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan Elsdn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetEuroIsdn
Values	idle active (activ) busy
Default	idle

GROUP SigChan Elsdn Statistics (Stats)

Properties	Operational
Description	This group provides the statistical attributes for the *SigChan/x EuroIsdn* component.
Mib	VnetEuroIsdn

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ATTRIBUTE SigChan Elsdn totalCallsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made to the interface. The value wraps to zero when it exceeds its maximum.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made from the interface. The value wraps to zero when it exceeds its maximum.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non call-associated sessions that have been made to the interface. The value wraps to zero when it exceeds its maximum.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non call-associated sessions that have been made from the interface. The value wraps to zero when it exceeds its maximum.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

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GROUP SigChan Elsdn Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *SigChan/x EuroIsdn* component.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes channels used by both, data and voice calls.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Elsdn activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently used by voice calls. This includes modem calls.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Elsdn activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently used by data calls. This does not include modem data.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Elsdn peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum value of the *activeChannels* attribute during the last polling period.

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Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Elsdn peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum value of the *activeVoiceChannels* attribute during the last polling period.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Elsdn peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum value of the *activeDataChannels* attribute during the last polling period.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Elsdn dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgment from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being initialized.
Mib	VnetEuroIsdn
Values	outOfService establishing

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established
enabling
inService
restarting

Default — No default

GROUP SigChan Elsdn Tools

Properties — Operational

Description — This contains a series of operational attributes which turn on and off several kinds of tracing.

Mib — VnetEuroIsdn

ATTRIBUTE SigChan Elsdn tracing

Access — Read: All
Write: All

Description — This attribute defines which types of tracing are active on the signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueueSize* attribute of the *Lp/x Eng Ds/debug* component must be greater than 0 and the operator's NMIS session must have the debug stream included in its data stream list (for example: *set Nmis Telnet Session/1 dataStreams deb*). Several types of tracing can be enabled simultaneously.

Note that tracing consumes additional CPU resources and slows down call processing on a heavily loaded card. If there is message block exhaustion tracing is suspended for a period of time and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages.

Types of tracing include:
protocolErrors - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms.
q931Summary - summary of the Q.931 messages on the signalling link.
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Q.921 messages in hex format being sent and received on the link.

Mib — VnetEuroIsdn

Set of — protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

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Default	No default

GROUP SigChan Elsdn Options (Opt)

Properties	Provisioned
Description	This group specifies the provisionable attributes specific to the Euro ISDN (ETSI-T) protocol.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn variant

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the specific variant of the Euro ISDN (ETSI-T) protocol. Supported variants are: ***etsiGeneric*** - provides generic ETSI-T protocol. Only proxy of the NETWORK side of the protocol is implemented, ***austria*** - provides ETSI-T protocol variant as per the Austrian national specification. Only the USER side of the protocol is implemented, ***germany*** - provides ETSI-T protocol variant as per the German national specification. Only the USER side of the protocol is implemented.
Mib	VnetEuroIsdn
Values	etsiGeneric austria germany
Default	etsiGeneric

ATTRIBUTE SigChan Elsdn connectServiceTimer (cst)

Access	Read: All Write: All
Description	This attribute specifies duration of the “await connection” supervisory timer which applies to non call-associated sessions providing bearer-independent connection-oriented transport for supplementary services. The timer is started at the ingress node when a REGISTER message is received from the source PBX and stopped when a virtual circuit with the egress node is established. If the timer expires, the non call-associated session is cleared. The “await connection” timer (attribute *connectServiceTimer*) together with “await response” timer (attribute *responseServiceTimer*) provide equivalent of the T-ACTIVATE timer described in the relevant supplementary service specifications. A change of the timer value does not apply to timers already running.
Mib	VnetEuroIsdn

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Values	Decimal (1..10)
Units	seconds
Default	8

ATTRIBUTE SigChan Elsdn responseServiceTimer (rst)

Access	Read: All Write: All
Description	This attribute specifies duration of the “await response” supervisory timer which applies to non call-associated sessions providing bearer-independent connection-oriented transport for supplementary services. The timer is started at the ingress node when creation of a virtual circuit with the egress node is confirmed and stopped when the first message from the destination PBX is received. If the timer expires, the non call-associated session is cleared. The “await connection” timer (attribute *connectServiceTimer*) together with “await response” timer (attribute *responseServiceTimer*) provide equivalent of the T-ACTIVATE timer described in the relevant supplementary service specifications. A change of the timer value does not apply to timers already running.
Mib	VnetEuroIsdn
Values	Decimal (1..10)
Units	seconds
Default	8

ATTRIBUTE SigChan Elsdn lifetimeServiceTimer (lst)

Access	Read: All Write: All
Description	This attribute specifies duration of the service lifetime supervisory timer which applies to non call-associated sessions providing bearer-independent connection-oriented transport for supplementary services. The timer limits the duration of a virtual call. It is started at the ingress node at the moment the first response message from the destination PBX has been received and stopped when the non call-associated session is released. If the timer expires, the non call-associated session is cleared. This timer is equivalent to the T-CCBS6 timer described in the relevant supplementary service specifications. A change of the timer value does not apply to timers already running.
Mib	VnetEuroIsdn
Values	Decimal (1..200)
Units	minutes

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Default	60

GROUP SigChan Elsdn EuroSpecificProv

Properties	Provisioned
Description	This group provides Euro ISDN protocol specific provisioning.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn chanMaintenanceHandling (cmh)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies how channel maintenance events should be handled upon startup. Channel maintenance events include locking and unlocking a channel or channel registration. The decision is either to send individual channel RESTART message, or global interface restart at startup. A RESTART is always sent on unlocking a channel. ***globalOnStartup*** provides the minimum required functionality at startup, without any individual channel confirmation. Note that when this is set, channel RESTART is still used for channel unlock. ***globalOnStartup*** applies to *SigChan* startup only. ***restartMessage*** specifies that individual channel RESTARTs when the SigChan starts up. If this attribute is set to ***restartMessage***, a RESTART message is used to send at startup and channel unlock, Global Restart is implemented first for in this choice. ***restartOnlyMessage*** specifies that individual channel RESTARTs when the SigChan starts up. If this attribute is set to ***restartOnlyMessage***, a RESTART message is used to send at startup and channel unlock, Global Restart is not implemented for this choice.
Mib	VnetEuroIsdn
Values	globalOnStartup (gbl) restartMessage (rest) restartOnlyMessage (reso)
Default	globalOnStartup

COLLECTED STATS SignallingChannel EuroIsdn

Description	The statistics record generated by the SignallingChannel EuroIsdn component.

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ATTRIBUTE SigChan Elsdn peakActiveChannels

Description — This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Elsdn peakActiveVoiceChannels

Description — This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Elsdn peakActiveDataChannels

Description — This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.

Values — Decimal (0..30)

ATTRIBUTE SigChan Elsdn totalCallsToIf

Description — This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Elsdn totalCallsFromIf

Description — This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsToIf

Description — This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsFromIf

Description — This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values — Decimal (0..65535)

ATTRIBUTE SigChan Elsdn frmToIf

Description — This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values — Decimal (0..4294967295)

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ATTRIBUTE SigChan Elsdn frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Elsdn octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Elsdn octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COMPONENT SigChan Elsdn Framer (Framer)

Groups
GROUP SigChan Elsdn Framer Provisioned (Prov)
GROUP SigChan Elsdn Framer OsiState (State)
GROUP SigChan Elsdn Framer Statistics (Stats)

Scope Application

Description *SigChan/n EuroIsdn Framer*

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to data path aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface data path statistics (such as frame counts and aborts).

Mib VnetEuroIsdn

Common Verbs
Help
List
Display

GROUP SigChan Elsdn Framer Provisioned (Prov)

Properties Provisioned

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Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VnetEuroIsdn
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan Elsdn Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetEuroIsdn
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Elsdn Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VnetEuroIsdn
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan Elsdn Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetEuroIsdn
Values	idle active (activ) busy
Default	idle

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GROUP SigChan Elsdn Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer* component.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn Framer frmToIf

Access	Read only
Description	This attribute counts the frames transmitted to the link interface by the *Framer*. The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer frmFromIf

Access	Read only
Description	This attribute counts the frames received from the link interface by the *Framer*. The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer octetFromIf

Access	Read only
Description	This attribute counts the bytes received from the link interface by the *Framer*. The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer aborts

Access	Read only

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Description	This attribute counts the aborts received. The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer crcErrors

Access	Read only
Description	This attribute counts the frames with CRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer lrcErrors

Access	Read only
Description	This attribute counts the frames with LRC errors. This count wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer nonOctetErrors

Access	Read only
Description	This attribute counts the frames that were non octet aligned. This count wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer overruns

Access	Read only
Description	This attribute counts the frames received from the link for which overruns occurred.

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The counter wraps to zero when it exceeds its maximum value.

Mib VnetEuroIsdn

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan Elsdn Framer underruns

Access Read only

Description This attribute counts the frames transmitted to the link for which underruns occurred.

The counter wraps to zero when it exceeds its maximum value.

Mib VnetEuroIsdn

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan Elsdn Framer largeFrmErrors

Access Read only

Description This attribute counts the frames received which were too large (longer than 500 bytes).

The counter wraps to zero when it exceeds its maximum value.

Mib VnetEuroIsdn

Values Decimal (0..4294967295)

Default 0

COMPONENT SigChan Gateway (Gw)

Groups GROUP SigChan Gw Operational (Oper)
GROUP SigChan Gw Statistics (Stats)

Scope Application

Description *SigChan/n Gateway*
This component contains operational attributes which describe gateway capabilities of the *SigChan* component as well as the basic statistics related to calls requiring signalling protocol conversion.

Mib VoiceNetworking

Common Verbs Help
List
Display

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GROUP SigChan Gw Operational (Oper)

Properties	Operational
Description	This group contains an operational attribute which indicates signalling protocol conversion capabilities of the *SigChan* component.
Mib	VoiceNetworking

ATTRIBUTE SigChan Gw gatewayCapability (gwc)

Access	Read only
Description	This attribute indicates the *SigChan* component's capability to convert from one access signalling type to another. Access signalling protocols (protocols between a node and external switching equipment, for example a PBX) are grouped into protocol groups. Protocols within the same protocol group are considered completely compatible. This means that no extra processing is needed when a call originates from an ingress link using protocol A and terminates on an egress link using protocol B if protocols A and B belong to the same protocol group. The following protocol groups are defined: ***etsiQsigPG*** - ETSI QSIG protocol group containing ETSI QSIG protocol, ***mcdnFamilyPG*** - MCDN Family protocol group containing NIS, Meridian Customer Defined Network (MCDN) peer to peer, and MCDN User to Network (UNI) protocols, ***analogAndCasPG*** - Analog and CAS protocol group containing most of the analog and channel associated signalling protocols with steady state line signalling and DTMF register signalling, ***euroIsdnPG*** - EURO ISDN protocol group containing most of the European national ISDN protocols based on ETSI ISDN (ETSI-T) standard. For every of the protocols group this attribute indicates what is the level of protocol conversion support available on the *SigChan* component: ***noGw*** - no protocol conversion available for the protocol group, ***singleEndedGw*** - only full protocol conversion available for the protocol group (that is the *SigChan* component on the other side of the subnet does not have to get involved in the gateway processing), ***doubleEndedGw*** - only partial protocol conversion available for the protocol group (that is both *SigChan* components, ingress and egress, have to get involved in signalling conversion), ***singleOrDoubleEndedGw*** - both, full and partial protocol conversions available for the protocol group, ***nativePG*** - the protocol group is the native protocol group for the *SigChan* component.

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Mib	VoiceNetworking
Vector of	noGw singleEndedGw doubleEndedGw singleOrDoubleEndedGw nativePG
Index	etsiQsigPG mcdnPG analogAndCasPG euroIsdnPG
Default	No default

GROUP SigChan Gw Statistics (Stats)

Properties	Operational
Description	This group provides signalling gateway related statistical attributes for the *SigChan* component.
Mib	VoiceNetworking

ATTRIBUTE SigChan Gw requiredConversions (rc)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made from the subnet to the interface (that is external equipment, for example a PBX) which needed signalling protocol conversion. The value wraps to zero when it exceeds its maximum. The count includes both, supported and unsupported conversions.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Gw unsupportedConversions (uc)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made from the subnet to the interface (that is external equipment, for example a PBX) which needed signalling protocol conversion but were rejected since the requested conversion was not supported. The value wraps to zero when it exceeds its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

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COMPONENT SigChan NcaSession (Ncas)

Instance	Hex (H.0..H.ffff)
Groups	GROUP SigChan Ncas Operational (Oper)
Scope	Application
Description	*SigChan/n NcaSession/n* This component represents a single Non Call-Associated signalling Session (NCAS) serviced by the *SigChan* component. Non call-associated signalling sessions are only supported on some Common Channel Signalling (CCS) protocols (for example ETSI QSIG, ETSI UNI ISDN). The instance value of a *NcaSession* component is an arbitrary number which does not change during an individual NCAS session.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan Ncas Operational (Oper)

Properties	Operational
Description	This group contains various operational attributes of a non call-associated signalling session serviced by a *SigChan* component.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ncas direction

Access	Read only
Description	This attribute indicates what is the direction of the non call-associated signalling session. The attribute may have the following values: ***ingress***, the NCAS session is originated by the external equipment into the subnet ***egress***, the NCAS session is originated by the subnet into the external equipment
Mib	VoiceNetworking
Values	ingress egress
Default	No default

ATTRIBUTE SigChan Ncas callReference

Access	Read only
Description	This attribute indicates which call reference the NCAS session uses.

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Mib	VoiceNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE SigChan Ncas calledDirectoryNumber (calledDn)

Access	Read: All Write: Illegal
Description	This attribute indicates the dialled number for the NCAS session.
Mib	VoiceNetworking
Values	BCD (1..32)
Default	No default

ATTRIBUTE SigChan Ncas duration

Access	Read only
Description	This attribute indicates duration of the NCAS session since its establishment.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Units	minutes
Default	0

COMPONENT SigChan McdnSig (Mcdn)

Groups	GROUP SigChan Mcdn Layer2Options (L2) GROUP SigChan Mcdn Layer3Options (L3) GROUP SigChan Mcdn Provisioned (Prov) GROUP SigChan Mcdn OsiState (State) GROUP SigChan Mcdn Statistics (Stats) GROUP SigChan Mcdn Operational (Oper) GROUP SigChan Mcdn Tools GROUP SigChan Mcdn ConnectionlessFeatures (Cls) GROUP SigChan Mcdn ConnectionOrientedFeatures (Co)

COLLECTED STATS SignallingChannel McdnSig

Scope	Device
Description	*SigChan/n McdnSig* The *McdnSig* component defines the operational characteristics of the

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	signalling channel's connection to the external equipment. This is the proprietary MCDN protocol as based on Nortel specification TR-88-5003.
Mib	VnetMcdnSig
Subcomponents	COMPONENT SigChan Mcdn Framer (Framer)
Common Verbs	Help List Display Add DELete

GROUP SigChan Mcdn Layer2Options (L2)

Properties	Provisioned
Description	This group specifies the provisionable layer 2 attributes of the Q.931 ITU-T protocol.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer 2 enable request timer.
Mib	VnetMcdnSig
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE SigChan Mcdn t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgment.
Mib	VnetMcdnSig
Values	Decimal (1..20)
Units	seconds
Default	1

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ATTRIBUTE SigChan Mcdn n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer 2 frame.
Mib	VnetMcdnSig
Values	Decimal (1..8)
Default	3

ATTRIBUTE SigChan Mcdn t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time for which layer 2 frames may be absent. Expiry triggers a check on whether the far end is alive.
Mib	VnetMcdnSig
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE SigChan Mcdn circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of sequentially numbered I frames (that is, window size (k)) that may be unacknowledged at any given time for a SAP supporting primary rate (64kbit/s) signalling.
Mib	VnetMcdnSig
Values	Decimal (1..127)
Default	7

GROUP SigChan Mcdn Layer3Options (L3)

Properties	Provisioned
Description	This group represents the provisionable Layer 3 timer attributes of the MCDN signalling protocol.
Mib	VnetMcdnSig

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ATTRIBUTE SigChan Mcdn t302

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the overlap receiving timer; in a UNI, this is network to user, but for Peer to Peer it is all incoming calls. This attribute is ignored if overlap signalling is disabled.
Mib	VnetMcdnSig
Values	Decimal (10..30)
Units	seconds
Default	15

ATTRIBUTE SigChan Mcdn t304

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the overlap sending timer; in a UNI, this is user to network, but for Peer to Peer it is all outgoing calls. This attribute is ignored if overlap signalling is disabled.
Mib	VnetMcdnSig
Values	Decimal (10..30)
Units	seconds
Default	10

ATTRIBUTE SigChan Mcdn t309

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the data link disconnect timer; used to ride out temporary failures.
Mib	VnetMcdnSig
Values	Decimal (15..120)
Units	seconds
Default	90

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ATTRIBUTE SigChan Mcdn t310

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the call proceeding state timer.
Mib	VnetMcdnSig
Values	Decimal (10..120)
Units	seconds
Default	10

ATTRIBUTE SigChan Mcdn t316

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the restart request response timer. It must be set greater than *t317*.
Mib	VnetMcdnSig
Values	Decimal (31..180)
Units	seconds
Default	120

ATTRIBUTE SigChan Mcdn t317

Access	Read: All Write: Illegal
Criticality	Process
Description	This attribute specifies the restart operation timer, used when a RESTART was received.
Mib	VnetMcdnSig
Values	Decimal (30..179)
Units	seconds
Default	30

GROUP SigChan Mcdn Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the D-channel signalling link.
Mib	VnetMcdnSig

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ATTRIBUTE SigChan Mcdn side

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the interface provides layer 2 and 3 services equivalent to the ITU-T network or user side of the connection. If this attribute is set to ***network***, then the interface is master during channel negotiation, and uses network side layer 2 command/response bits. If this attribute is set to ***user***, then the interface is slave during channel negotiation, and uses user side layer 2 command/response bits. Note that although a peer to peer protocol has no true network or user side, for channel negotiation and layer 2 handling the peer to peer and UNI protocols have identical function. A true UNI may also have uni-directional messages and/or message elements; the peer to peer has all elements bidirectional.
Mib	VnetMcdnSig
Values	network user
Default	network

ATTRIBUTE SigChan Mcdn maxNonCallConcurrent (nonCall)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of simultaneous active non-call transactions that are allowed.
Mib	VnetMcdnSig
Values	Decimal (1..30)
Default	30

ATTRIBUTE SigChan Mcdn overlapSending (ovls)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap sending to the PBX is enabled.
Mib	VnetMcdnSig
Values	enabled disabled
Default	enabled

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ATTRIBUTE SigChan Mcdn overlapReceiving (ovlr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap receiving from the PBX is enabled.
Mib	VnetMcdnSig
Values	enabled disabled
Default	enabled

ATTRIBUTE SigChan Mcdn chanMaintenanceHandling (cmh)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies handling of channel maintenance events such as locking and unlocking a channel or channel registration on start-up. The decision here is whether to send individual channel RESTART messages, SERVICE messages, or nothing. Note that channel registration only occurs after the global interface restart at startup. The attribute controls start-up handling absolutely, and channel lock and unlock conditionally. That is, setting this to enable SERVICE messages ensures SERVICE messages at start-up and whenever a channel goes into or out of service. However, if this is not set to enable SERVICE messaging, a RESTART is always sent on unlocking a channel. ***globalOnStartup*** provides the minimum required function at start-up, without any individual channel confirmation. Note that when this is set, channel RESTART is still used for channel unlock. ***globalOnStartup*** applies to *SigChan* start-up only. ***serviceMessage*** enables sending and receiving SERVICE messages. If enabled, SERVICE messages are always used for channel maintenance on channel lock, channel unlock and start-up. ***restartMessage*** provides individual channel RESTARTs when a *SigChan* starts up. If enabled, the RESTART is used at start-up and channel unlock. However, if both SERVICE and RESTART messages are disabled, the RESTART will still be used when a channel unlocks.
Mib	VnetMcdnSig
Values	globalOnStartup (gbl) serviceMessage (svc) restartMessage (rest)

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Default	restartMessage

GROUP SigChan Mcdn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetMcdnSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Mcdn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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	with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VnetMcdnSig
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan Mcdn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetMcdnSig
Values	idle active (activ) busy
Default	idle

GROUP SigChan Mcdn Statistics (Stats)

Properties	Operational
Description	This group provides the operational components for the *McdnSig* component.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn totalCallsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made to the interface. The value wraps when it reaches its maximum.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE SigChan Mcdn totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the interface. The value wraps when it reaches its maximum.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions to the interface. The value wraps when it reaches its maximum.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions from the interface. The value wraps when it reaches its maximum.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

GROUP SigChan Mcdn Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the MCDN signalling.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	VnetMcdnSig

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Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying voice.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying data. This does not include modem data.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of voice channels that have been active on this signalling channel during the last polling period.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

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ATTRIBUTE SigChan Mcdn peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of data channels that have been active on this signalling channel during the last polling period.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	VnetMcdnSig
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP SigChan Mcdn Tools

Properties	Operational
Description	This contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	VnetMcdnSig

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ATTRIBUTE SigChan Mcdn tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in *Col/debug* must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (ex. *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms. ***q931Summary*** - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes). ***q931Hex*** - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends. ***q931Symbolic*** - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link. ***portHex*** - Messages in hex format being sent and received on the link.
Mib	VnetMcdnSig
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

ATTRIBUTE SigChan Mcdn messageTraced (msgtrc)

Access	Read: All Write: All
Description	This attribute specifies the type of ISDN messages that are to be traced.

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Mib	VnetMcdnSig
Set of	alerting callProceeding (callProc) connectionlessFacility (clsFac) congestionControl (contCtrl) connect connectAcknowledge (connectAck) disconnect facility (fac) facilityAcknowledge (facAck) facilityReject (facRej) information (info) notify progress register releaseComp (relComp) release restart restartAcknowledge (restartAck) service serviceAcknowledge (serviceAck) setup setupAcknowledge (setupAck) status statusEnquiry userInformation (userInfo) all
Default	(alerting, callProceeding, connectionlessFacility, congestionControl, connect, connectAcknowledge, disconnect, facility, facilityAcknowledge, facilityReject, information, notify, progress, register, releaseComp, release, restart, restartAcknowledge, service, serviceAcknowledge, setup, setupAcknowledge, status, statusEnquiry, userInformation)

ATTRIBUTE SigChan Mcdn directionTraced (dirt)

Access	Read: All Write: All
Description	This attribute indicates whether the incoming (from PBX), outgoing (to PBX), or both incoming and outgoing messages are traced.
Mib	VnetMcdnSig
Set of	incoming outgoing
Default	(incoming, outgoing)

GROUP SigChan Mcdn ConnectionlessFeatures (Cls)

Properties	Provisioned

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Description	This group enables and disables the support of the MCDN proprietary signalling for connectionless features on the local signalling channel.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn clsFeaturesSupported (clsfsup)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the features to be supported by MCDN “TCAP” connection-less messaging. Note that some features such as Network ACD combine connection-less and connection oriented. In the NACD case, the connection-less messaging enables the source and target PBXs to establish the networked relationship, and calls sent across the network (connection oriented) will contain basic information relating the call to the feature. Feature Definitions: ***networkAcd***: transfer of a call from a pool of agents to a second pool of agents across the network. ***networkMessageService***: message waiting capability (for example, lamps on sets). Also includes signalling for voice mail, but is not limited to voice mail. ***networkVoiceMail***: a specific subset of Network Message Service, separated functionally as it always terminates on an interactive voice response mailbox application. ***networkRingAgain***: ring again to remote sets. ***electronicLock***: change of set capabilities by a remote user dialling the applicable code and password. ***remoteCallForward***: call forwarding a phone via applicable code and password. ***callPickupNetworkWide*** (call pickup world wide): scan for a ringing call on another node, to enable the scanning set to pick up the call. ***networkPackage1***: a collection of other features including but not limited to network clock synchronization. Note that on the Meridian 1, this is a general purpose group used for very small features not requiring a new ISDN Facility feature type. ***isdnApplicationInterface***: network wide support of a number of Meridian 1 Application Module Link features. ***mobilityMultisiteNetworking***: the capability to use a wireless phone in multiple sites, by having the phone register on arrival at the new site, and having the PBX at the new site negotiate the set “relocation” with the base PBX. ***networkTimeSynchronization***: the capability that allows multiple Meridian1’s in the network to have the same time, to be synchronized. ***miscellaneous***: Any feature that is not listed above.

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Mib	VnetMcdnSig
Set of	networkAcd (nacd) networkMessageService (nms) networkRingAgain (nrag) networkVoiceMail (nvm) electronicLock (elck) remoteCallForward (rcf) callPickupWorldWide (cpww) networkPackage1 (net1) isdnApplicationInterface (isdnapi) mobilityMultisiteNetworking (mmn) networkTimeSynchronization (nts) miscellaneous (misc)
Default	(networkAcd, networkMessageService, networkRingAgain, networkVoiceMail, electronicLock, remoteCallForward, callPickupWorldWide, networkPackage1, isdnApplicationInterface, mobilityMultisiteNetworking, networkTimeSynchronization, miscellaneous)

GROUP SigChan Mcdn ConnectionOrientedFeatures (Co)

Properties	Provisioned
Description	This group enables and disables the support of the MCDN proprietary signalling for the listed features on the local signalling channel.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn dropBackCongestion (dbb)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies if the Meridian 1 Drop Back Congestion Handling for trunks is enabled, and what type is being supported.
Mib	VnetMcdnSig
Values	noDropBackAllowed (ndbb) dropBackToOriginator (dborig) dropBackToPriorNode (dbnode)
Default	dropBackToOriginator

ATTRIBUTE SigChan Mcdn networkNameDisplay (name)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what Name Display is supported.

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nd1 corresponds to the Meridian 1 RCAP (Remote CAPability) ***nd1***. This translates as caller provides name info in SETUP, ringing party name in ALERTING, redirection name in NOTIFY, and answering party name in CONNECT (as applicable, and if the name changes).

nd2 corresponds to the Meridian 1 RCAP (Remote CAPability) ***nd2***. This translates as caller provides name info in SETUP, answering party provides name in NOTIFY on answer.

nd3 corresponds to the Meridian 1 RCAP (Remote CAPability) ***nd3***, which is ***nd1*** plus name information in call clearing messages (busy user, etc.) where a specific user was found but either could not answer or cleared the call. This corresponds to the QSIG name display.

Mib	VnetMcdnSig
Set of	nameDisplay1 (nd1) nameDisplay2 (nd2) nameDisplay3 (nd3)
Default	No default

ATTRIBUTE SigChan Mcdn multisiteBusinessGroup (mbg)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether to enable transport for the Meridian 1 Multisite Business Group IE. The Meridian 1 allows multiple "Tenants" to exist on a single PBX. These Tenants have limited access to each other and to system resources. That is, users associated with “Tenant group one” cannot use trunks, attendants, and features from another group, and so forth. The Multi-Site Business Group is a single Tenant existing on more than one PBX. As an example, “tenant one” on a PBX may "own" resources belonging to “tenant one” on another PBX. The Multi-Site Business Group IE as used in the Meridian 1 Network Tenant Services feature enables linking the two tenants together.
Mib	VnetMcdnSig
Values	transport discard
Default	transport

ATTRIBUTE SigChan Mcdn conOrFeaturesSupported (confsup)

Access	Read: All Write: All
Criticality	Process

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Description

This attribute indicates the features to be supported by MCDN “ROSE” connection oriented messaging.

Feature Definitions:
networkAttendantService: network wide support of Attendant (“operator”) services.
classOfServiceTransport: this is not a ROSE feature. Class of Service transport takes place in the called party number when provisioned on the Meridian 1 to use an ESN signalling type.
trunkRouteOptimization: dropping of redundant links in a call, when a set call forwards a call prior to answer.
remoteVirtualQueuing: queuing at a remote node without requiring a B channel to be kept up.
offHookQueuing: Queuing by maintaining the speech path to the queuing node.
networkCallTrace: call progress tracing across a network (that is, call reached node a, node b, terminated at c,...).
networkIntercom: network wide access to an intercom system on a Meridian 1.
callPickupNetworkWide: connection oriented messages associated with the TCAP call pickup scan operation. The messages that actually pick up the ringing call.
radioPaging: access to a radio paging system network wide, allowing single radio paging facilities in a relatively dense local PBX network.
networkAccess: information to enable access to PBX features from outside the network. Additional data is provided to identify access capabilities for a specific call. (Similar to transmitting authorization code capabilities network wide.)
antiTromboning: actually includes two capabilities - NAS (Network Attendant Service) and Trunk Anti-Tromboning. Calls that exit the subnet to a PBX and are transferred back to a network number via the same D channel can be optimized. If PBX A (node A) calls across the subnet to node B, D channel Z, to PBX B, and PBX B transfers across D channel Z to node B and therefore to PBX C/node C, this allows that call to simplify to PBX/node A to PBX/node C.
miscellaneous: Any feature that is not listed above.

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Mib	VnetMcdnSig
Set of	networkAttendantService (nas) classOfServiceTransport (cos) trunkRouteOptimization (tro) remoteVirtualQueuing (rvq) networkCallId (nci) offHookQueuing (ohq) networkCallTrace (nctrc) networkIntercom (nint) callPickupNetworkWide (cpnw) radioPaging (radpag) networkAccess (netacc) antiTromboning (at) miscellaneous (misc)
Default	(networkAttendantService, classOfServiceTransport, trunkRouteOptimization, remoteVirtualQueuing, networkCallId, offHookQueuing, networkCallTrace, networkIntercom, callPickupNetworkWide, radioPaging, networkAccess, antiTromboning, miscellaneous)

COLLECTED STATS SignallingChannel McdnSig

Description	The statistics record generated by the SignallingChannel McdnSig component.

ATTRIBUTE SigChan Mcdn peakActiveChannels

Description	This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Mcdn peakActiveVoiceChannels

Description	This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Mcdn peakActiveDataChannels

Description	This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Mcdn totalCallsToIf

Description	This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

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Values Decimal (0..65535)

ATTRIBUTE SigChan Mcdn totalCallsFromIf

Description This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsToIf

Description This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsFromIf

Description This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Mcdn frmToIf

Description This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COMPONENT SigChan Mcdn Framer (Framer)

Groups GROUP SigChan Mcdn Framer Provisioned (Prov)
GROUP SigChan Mcdn Framer OsiState (State)
GROUP SigChan Mcdn Framer Statistics (Stats)

Scope Application

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Description	*SigChan/n Mcdn Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to data path aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface data path statistics (such as frame counts and aborts).
Mib	VnetMcdnSig
Common Verbs	Help List Display

GROUP SigChan Mcdn Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VnetMcdnSig
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan Mcdn Framer OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetMcdnSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Mcdn Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VnetMcdnSig
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE SigChan Mcdn Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetMcdnSig
Values	idle active (activ) busy
Default	idle

GROUP SigChan Mcdn Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer* component.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *Framer*. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer*. This count wraps to zero after reaching its maximum value.

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Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer octetFromIf

Access	Read only
Description	This attribute counts the number of bytes received from the link interface by *Framer*. This count wraps to zero when it exceeds its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE SigChan Mcdn Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received which were too large (longer than 500 bytes). This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig

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Values	Decimal (0..4294967295)
Default	0

COMPONENT SigChan InternalCauseMap (ICmap)

Groups	GROUP SigChan ICmap InternalCauseCode (IntCause)
Scope	Application
Description	*SigChan/n VnetInternalCauseManipulation* This component represents the provisionable attributes for the internal, node, and subnet generated cause codes of an establishing call. This component can be added for most of the ISDN (common channel signalling) protocols (*EtsiQsig*, *NisSig*, *EuroIsdn*) and cannot be added for a channel associated signalling protocol. This component is useful in a network where the originating PBX has restricted conditions to initiating alternate rerouting (rerouting on just one, specific, clearing cause code).
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP SigChan ICmap InternalCauseCode (IntCause)

Properties	Provisioned
Description	This group contains the provisionable, node-generated clearing reasons of an establishing call.
Mib	VoiceNetworking

ATTRIBUTE SigChan ICmap egressLinkOutOfServCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when the data link to the remote PBX is down or when remote channels are in maintenance. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 27.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

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ATTRIBUTE SigChan ICmap chanOrCircNotAvailCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX if no timeslot is available for an incoming call. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 34.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap tempFailureCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when PORS fails to establish a call due to congestion or a disabled trunk. It is also generated when the calling side fails to decode payload capabilities sent by the called side. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 41.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap switchCongestCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when the allocation of internal resources for an incoming call fails. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, typical cause code values sent back to the originating PBX are 42 for NIS and 41 for ETSI.
Mib	VoiceNetworking

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Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap reqChanOrCircNotAvailCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when an exclusively requested channel is not in service or a channel request is unsuccessful. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 44.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap resourceUnavailCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when the path establishing timer expires, when the switched voice service associated to a call is locked by CAS or when an H-channel is requested. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, typical cause code values sent back to the originating PBX are 47 for NIS and 44 for ETSI.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap servNotAllowedCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when the requested call type (voice or data) is not compatible with *Vroute typeOfRoute* at the calling side. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is

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not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 63.

Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap noSuchChannelCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when a requested channel does not exist. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 82.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap incompatDestCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when the calling and called side capabilities do not match. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 88.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - SigChan

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Type: NTP
Language type: U.S. English

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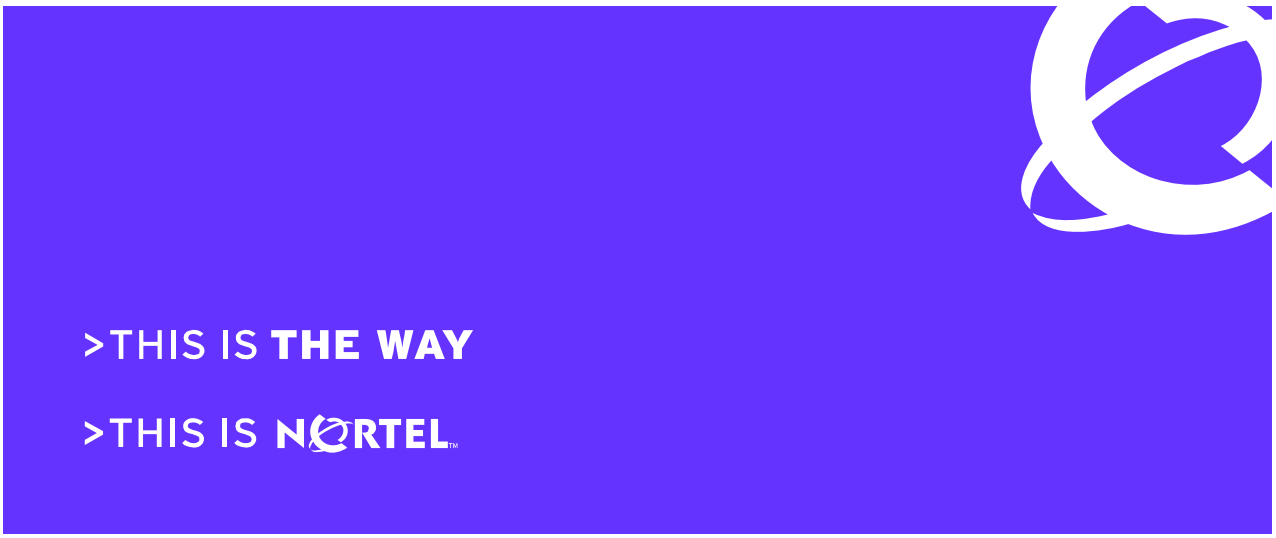

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - SrvTrace

NN10600-060

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COMPONENT ServiceTrace (SrvTrace)

Scope	Application
Description	*ServiceTrace* This component provides the ability to perform and monitor active service traces on a node. A semantic check that ensures that at least one receiver element exists and has been correctly provisioned.
Mib	TraceBase
Opt. Subcomp.	COMPONENT SrvTrace Receiver (Rcvr)
Dyn. Subcomp.	COMPONENT SrvTrace Session
Common Verbs	Help List Display Add DELete

COMPONENT SrvTrace Receiver (Rcvr)

Instance	String (1..8, ASCII)
Scope	Application
Description	*SrvTrace Receiver/<string>* This component identifies a remote receiver for traced data. The instance identification of the *Receiver* component is used to uniquely identify each receiver.

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A semantic check that ensures that the receiver interface type has been added before activating the Service Trace feature.

Mib: TraceBase

Opt. Subcomp.:
COMPONENT SrvTrace Rcvr X25
COMPONENT SrvTrace Rcvr FrameRelay (Fr)
COMPONENT SrvTrace Rcvr FrAtm
COMPONENT SrvTrace Rcvr Atm

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT SrvTrace Rcvr X25

Scope: Application

Description: *SrvTrace Rcvr/<string> X25*
This component identifies the access method used by the receiver of the trace data as X.25.

Mib: X25TraceRcvr

Subcomponents:
COMPONENT SrvTrace Rcvr X25 DataNetworkAddress (Dna)
COMPONENT SrvTrace Rcvr X25 DirectCall (Dc)

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT SrvTrace Rcvr X25 DataNetworkAddress (Dna)

Groups:
GROUP SrvTrace Rcvr X25 Dna Address
GROUP SrvTrace Rcvr X25 Dna OutgoingOptions
GROUP SrvTrace Rcvr X25 Dna IncomingOptions
GROUP SrvTrace Rcvr X25 Dna CallOptions

Scope: Application

Description: *SrvTrace Rcvr/<string> X25 DataNetworkAddress*
This component defines the calling end of the trace connection. It includes

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	the set of attributes that apply to a VC connection to an X.25 trace receiver.
Mib	X25TraceRcvr
Opt. Subcomp.	COMPONENT SrvTrace Rcvr X25 Dna ClosedUserGroup (Cug)
Common Verbs	Help List Display

GROUP SrvTrace Rcvr X25 Dna Address

Properties	Provisioned
Description	This group contains attributes common to all *Dna*s. This group is composed of two attributes that define a DNA. These attributes are used to interpret the format of the address digits.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the DNA that is entered. The address may belong to an E.164 or X.121 plan.
Mib	X25TraceRcvr
Values	x121 e164
Default	x121

ATTRIBUTE SrvTrace Rcvr X25 Dna dataNetworkAddress (dna)

Access	Read and write
Description	The attribute contains digits which form a unique identifier for the calling end of the trace connection. DNA digits are selected and assigned by network operators. The maximum DNA length is 15 digits.
Mib	X25TraceRcvr
Values	BCD (1..15)
Default	No default

GROUP SrvTrace Rcvr X25 Dna OutgoingOptions

Properties	Provisioned
Description	This group defines call options for outgoing calls.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna outCalls (ouc)

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Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature. At least one of *outCalls* and *incCalls* must be set to a value of ***allowed*** for this Dna to be usable.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr X25 Dna outDefaultPriority (odf)

Access	Read and write
Description	This attribute, if set to a value of ***normal***, indicates that the default priority for outgoing calls (from the DTE to the network) using this particular *Dna* is normal priority - if the priority is not specified in the call. If this attribute is set to a value of ***high*** then the default priority for outgoing calls using this particular *Dna* is high priority.
Mib	X25TraceRcvr
Values	normal high
Default	high

ATTRIBUTE SrvTrace Rcvr X25 Dna outIntl (oic)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing international calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls are allowed. This attribute is ignored if the corresponding attribute *outCalls* is set to a value of ***disallowed***.
Mib	X25TraceRcvr
Values	disallowed allowed

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Default	allowed

ATTRIBUTE SrvTrace Rcvr X25 Dna outDefaultPathReliability (opr)

Access	Read only
Description	This attribute specifies the default reliability class of routing for all calls (from the DTE to the network) using this particular *Dna*. The chosen default reliability class of routing normally applies to all packets (including the call packets) travelling into the network. If the *outPathReliabilityOverRide* attribute is subscribed to, the default reliability class of routing is chosen by the calling party. This attribute, if set to a value of ***normal***, indicates that the default class of routing is normal reliability routing. If set to a value of ***high***, then the default class of routing is high reliability routing. High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the VC handles the duplication and disordering to ensure that packets are delivered to the DTE properly.
Mib	X25TraceRcvr
Values	normal high
Default	high

ATTRIBUTE SrvTrace Rcvr X25 Dna outPathReliabilityOverRide (oro)

Access	Read only
Description	This attribute, if set to a value of ***no***, specifies that the called end of the connection will not use the calling end provisioning data for reliability class of routing to override the provisioning data at the called end.
Mib	X25TraceRcvr
Values	yes no
Default	no

ATTRIBUTE SrvTrace Rcvr X25 Dna outPathReliabilitySignal (ores)

Access	Read only
Description	This attribute, if set to a value of ***disallowed***, specifies that reliability routing signaling is not used.
Mib	X25TraceRcvr

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Values	allowed disallowed
Default	disallowed

ATTRIBUTE SrvTrace Rcvr X25 Dna outAccess (oua)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE to the network) to the open (non-CUG) part of the network are permitted. It also permits outgoing calls to DTEs that have Incoming Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Outgoing Access' feature.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	disallowed

GROUP SrvTrace Rcvr X25 Dna IncomingOptions

Properties	Provisioned
Description	This group defines the call options for incoming calls.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	disallowed

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GROUP SrvTrace Rcvr X25 Dna CallOptions

Properties	Provisioned
Description	This group defines additional options for calls which are not specific to the direction of the call.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna packetSizes (pks)

Access	Read only
Description	This attribute specifies the allowable packet sizes supported for call setup using this DNA. ITU-T recommends that packet size 128 be always supported. The bit placement for the packet sizes is as follows: Bit 0 - Packet Size 16 Bit 1 - Packet Size 32 Bit 2 - Packet Size 64 Bit 3 - Packet Size 128 Bit 4 - Packet Size 256 Bit 5 - Packet Size 512 Bit 6 - Packet Size 1024 Bit 7 - Packet Size 2048 Bit 8 - Packet Size 4096 This list of allowable packet sizes must always include the default packet sizes: *defaultRecvFrmNetworkPacketSize* and *defaultSendToNetworkPacketSize*.
Mib	X25TraceRcvr
Set of	16 32 64 128 256 512 1024 2048 4096
Default	(2048)

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultRecvFrmNetworkPacketSize (rps)

Access	Read only
Description	This attribute specifies the default local receive packet size from network to DTE for calls using this particular *Dna*. The *packetSizes* attribute must be set with corresponding value.
Mib	X25TraceRcvr

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Values	16 32 64 128 256 512 1024 2048 4096
Default	2048

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultSendToNetworkPacketSize (sps)

Access	Read only
Description	This attribute specifies the default local send packet size from DTE to network for all calls using this particular *Dna*. The *packetSizes* attribute must be set with corresponding value.
Mib	X25TraceRcvr
Values	16 32 64 128 256 512 1024 2048 4096
Default	2048

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultRecvFrmNetworkThruputClass (drt)

Access	Read and write
Description	This attribute specifies the default receive throughput class, (towards the interface) for all calls using this particular *Dna*.
Mib	X25TraceRcvr
Values	Decimal (0..15)
Default	10

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultSendToNetworkThruputClass (dst)

Access	Read and write
Description	This attribute specifies the default send throughput class (towards the network) for all calls using this particular *Dna*.
Mib	X25TraceRcvr
Values	Decimal (0..15)

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Default	10

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultRecvFrmNetworkWindowSize (rws)

Access	Read only
Description	This attribute specifies the default number of data packets that can be received by the DTE from the DCE before more packets can be received. This view is oriented with respect to the DTE.
Mib	X25TraceRcvr
Values	Decimal (1..7)
Default	1

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultSendToNetworkWindowSize (sws)

Access	Read only
Description	This attribute specifies the default number of data packets that can be transmitted from the DTE to the DCE and must be acknowledged before more packets can be transmitted.
Mib	X25TraceRcvr
Values	Decimal (1..7)
Default	1

ATTRIBUTE SrvTrace Rcvr X25 Dna packetSizeNegotiation (psn)

Access	Read only
Description	This attribute, if set to a value of ***local***, indicates that packet sizes can be negotiated locally at the interface irrespective of the setting at the remote interface. If set to ***endtoEnd***, then the packet size negotiation is between the local and remote interface (i.e. packet sizes are the same on both interfaces).
Mib	X25TraceRcvr
Values	endToEnd local
Default	local

ATTRIBUTE SrvTrace Rcvr X25 Dna cugFormat (cft)

Access	Read only
Description	This attribute specifies which CUG format is used when DTE signals CUG indices, ***basic*** or ***extended***. A ***basic*** CUG index format is two digits long. An ***extended*** CUG index format is four digits long. This attribute, if set to ***extended***, indicates that the DTE signals and receives CUG indices in extended CUG format. If set to a value of ***basic***, then the DTE signals and receives CUG indices in the basic CUG format.

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Mib	X25TraceRcvr
Values	basic extended
Default	basic

COMPONENT SrvTrace Rcvr X25 Dna **ClosedUserGroup (Cug)**

Instance	Decimal (1..1)
Groups	GROUP SrvTrace Rcvr X25 Dna Cug CugOptions
Scope	Application
Description	*SrvTrace Rcvr/<string> X25 Dna ClosedUserGroup* The component defines options associated with a national or international CUG (Closed User Group) identifier. Other DNAs in the network can have CUGs defined which groups these DNAs by their *Cug interlockCode* attribute value. If DNAs are defined with CUGs, calls from DNAs which do not have the same *interlockCode* attribute value defined are refused. Attributes *incAccess* and *outAccess* can override this rule. If this component is present, the X.25 interface which connects to the X.25 trace receiver must be provisioned with the same *Cug interlockCode* attribute value.
Mib	X25TraceRcvr
Common Verbs	Help List Display Add DELete

GROUP SrvTrace Rcvr X25 Dna Cug **CugOptions**

Properties	Provisioned
Description	Attributes in this group define the *ClosedUserGroup* component options associated with the *interlockCode* attribute. DNAs with the same CUG (*interlockCode*) can make calls within this group. Various combinations of attributes are defined under this option which permit or prevent calls in the same CUG group.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug **type**

Access	Read and write
Description	This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an intermediary X.75 Gateway, whereas national closed user groups are usually established between DTEs for which there is no intermediary X.75 Gateway. (National

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CUGs cannot normally traverse an X.75 Gateway).

If this attribute is set to ***national***, then the CUG is a national CUG, in which case, the *dnic* attribute should be left at its default value since it is not part of a national CUG. If this attribute is set to ***international***, then the CUG is an international CUG, in which case, the *dnic* attribute should be set appropriately as part of the *Cug interlockCode* attribute value.

Mib X25TraceRcvr

Values national
international

Default national

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug **dnic**

Access Read and write

Description This attribute specifies the DNIC (Data Network ID Code) of the *Cug* by which packet networks are identified. This attribute is not applicable if the CUG is a national CUG, as specified by the *Cug type* attribute. There are usually 1 or 2 DNICs assigned per country, for public networks. The U.S. is an exception where each BOC has a DNIC. Also, a group of private networks can have its own DNIC.

DNIC value is not an arbitrary number. It is assigned by international agreement and controlled by ITU-T.

Mib X25TraceRcvr

Values BCD (4)

Default 0000

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug **interlockCode (ilc)**

Access Read and write

Description This attribute specifies the CUG identifier of a national or international CUG call. It is an arbitrary number and it can also be called CUG in some descriptions. Interfaces (*Dna*s) defined with this number can only make calls to *Dna*s defined with the same *interlockCode* attribute value.

Mib X25TraceRcvr

Values Decimal (0..65535)

Default 0

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug **preferential (pre)**

Access Read only

Description This attribute, if set to a value of ***yes***, indicates that this *Cug* is the preferential CUG, in which case it will be used during the call establishment phase if the DTE has not explicitly specified a CUG index in the call request packet. If set to a value of ***no***, then this *Cug* is not the

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preferential CUG.

Only one of the *Cug* components associated with a particular DNA can be the preferential CUG - only one *Cug* component can have this attribute set to ***yes***.

Mib	X25TraceRcvr
Values	no yes
Default	yes

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug **outCalls (ouc)**

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE into the network) can be made using this particular *Cug*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for CUG*s* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug **incCalls (inc)**

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that incoming calls (from the network to the DTE) can be made using this particular *Cug*. If set to a value of ***disallowed***, then incoming calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for CUG*s* in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	disallowed

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug **privileged (pri)**

Access	Read and write

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Description	This attribute, if set to a value of ***yes***, indicates that this *Cug* is a privileged CUG. In DPN, at least one side of a call setup within a CUG must have the CUG as a privileged CUG. If set to a value of ***no***, then the *Cug* is not privileged. If both the local DTE and the remote DTE subscribe to the CUG, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTE's in which case the other DTE's cannot call one another, but can call the host. In this example, the host would have the privileged CUG, and the other DTE's would belong to the same CUG, but it would not be privileged.
Mib	X25TraceRcvr
Values	no yes
Default	yes

COMPONENT SrvTrace Rcvr X25 DirectCall (Dc)

Groups	GROUP SrvTrace Rcvr X25 Dc Options
Scope	Application
Description	*SrvTrace Rcvr/<string> X25 DirectCall* This component defines direct call options for the call to the X.25 trace receiver. The connection is initiated on receipt of a *Start FrUni/n SrvTrace* command.
Mib	X25TraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Rcvr X25 Dc Options

Properties	Provisioned
Description	The *Options* group defines attributes associated with the SVC direct call.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dc remoteNpi (rnpi)

Access	Read and write
Description	This attribute indicates the numbering plan used for the *remoteDna*.
Mib	X25TraceRcvr
Values	x121 e164
Default	x121

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ATTRIBUTE SrvTrace Rcvr X25 Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (DNA) of the remote end of the connection. This is the DNA of the X.25 trace receiver that receives the trace data.
Mib	X25TraceRcvr
Values	BCD (1..15)
Default	No default

ATTRIBUTE SrvTrace Rcvr X25 Dc type

Access	Read only
Description	This attribute specifies the type of call as ***switched***. For a ***switched*** call, no information is defined at the remote end about the local end of the connection.
Mib	X25TraceRcvr
Values	switched (svc) permanentMaster (master) permanentSlave (slave) permanentBackupSlave (backSl)
Default	switched

ATTRIBUTE SrvTrace Rcvr X25 Dc userData (usd)

Access	Read and write
Description	This attribute contains the user data. It is a 0 to 16 byte length string which is appended to the call request packet that is presented to the called (destination) DTE.
Mib	X25TraceRcvr
Values	String (0..16, Hex)
Default	""

COMPONENT SrvTrace Rcvr FrameRelay (Fr)

Scope	Application

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Description	*SrvTrace Rcvr/<string> FrameRelay* This component identifies the access method used by the receiver of the trace data as Frame Relay.
Mib	FrTraceRcvr
Subcomponents	COMPONENT SrvTrace Rcvr Fr DataNetworkAddress (Dna) COMPONENT SrvTrace Rcvr Fr DirectCall (Dc)
Common Verbs	Help List Display Add DELete

COMPONENT SrvTrace Rcvr Fr DataNetworkAddress (Dna)

Groups	GROUP SrvTrace Rcvr Fr Dna Address GROUP SrvTrace Rcvr Fr Dna OutgoingOptions GROUP SrvTrace Rcvr Fr Dna IncomingOptions GROUP SrvTrace Rcvr Fr Dna CallOptions
Scope	Application
Description	*SrvTrace Rcvr/<string> Fr DataNetworkAddress* This component defines the calling end of the trace connection. It includes the set of attributes that apply to a VC connection with a Frame Relay trace receiver.
Mib	FrTraceRcvr
Opt. Subcomp.	COMPONENT SrvTrace Rcvr Fr Dna ClosedUserGroup (Cug)
Common Verbs	Help List Display

GROUP SrvTrace Rcvr Fr Dna Address

Properties	Provisioned
Description	This group contains attributes common to all *Dnas*. This group is composed of two attributes that define a DNA. These attributes are used to interpret the format of the address digits.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the DNA that is entered. The address may belong to either the E.164 or X.121 plan. X.121 is used in packet-switched data networks.

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Mib	FrTraceRcvr
Values	x121 e164
Default	x121

ATTRIBUTE SrvTrace Rcvr Fr Dna dataNetworkAddress (dna)

Access	Read and write
Description	This attribute specifies digits that form a unique identifier of the calling end of the trace connection. DNA digits are selected and assigned by network operators.
Mib	FrTraceRcvr
Values	BCD (1..15)
Default	No default

GROUP SrvTrace Rcvr Fr Dna OutgoingOptions

Properties	Provisioned
Description	This group defines the call options for outgoing calls.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr Fr Dna outDefaultPriority (odf)

Access	Read and write
Description	This attribute, if set to a value of ***normal***, indicates that the default priority for outgoing calls (from the DTE to the network) using this particular *Dna* is normal priority - if the priority is not specified by the DTE. If this attribute is set to a value of ***high,*** then the default priority for outgoing calls using this particular *Dna* is high priority.
Mib	FrTraceRcvr
Values	normal high

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Default	high

ATTRIBUTE SrvTrace Rcvr Fr Dna outIntl (oic)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing international calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls are allowed. This attribute is ignored if the corresponding attribute *outCalls* is set to a value of ***disallowed***.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr Fr Dna outDefaultPathReliability (opr)

Access	Read only
Description	This attribute specifies the default class of routing for reliability routing for all outgoing calls (from the DTE to the network) using this particular *Dna*. The chosen default class of routing applies to all outgoing calls established using this *Dna*, and applies to the packets travelling in both directions on all outgoing calls (local to remote, and remote to local). For incoming calls, the default class of routing is chosen by the calling party (as opposed to DPN, where either end of the call can choose the default routing class). This attribute, if set to a value of ***normal***, indicates that the default class of routing is normal reliability routing. If set to a value of ***high***, then the default class of routing is high reliability routing. High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the VC handles the duplication and disordering to ensure that packets are delivered to the DTE properly. For the Frame Relay service, duplication of packets is not desired, in which case, normal reliability may be chosen as the preferred class of routing.
Mib	FrTraceRcvr

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Values	normal high
Default	high

ATTRIBUTE SrvTrace Rcvr Fr Dna outPathReliabilityOverRide (oro)

Access	Read only
Description	This attribute, if set to a value of ***no***, specifies that the called end of the connection will not use the calling end provisioning data for reliability class of routing to override the provisioning data at the called end.
Mib	FrTraceRcvr
Values	yes no
Default	no

ATTRIBUTE SrvTrace Rcvr Fr Dna outPathReliabilitySignal (ores)

Access	Read only
Description	This attribute, if set to a value of ***disallowed***, specifies that reliability routing signaling is not used.
Mib	FrTraceRcvr
Values	allowed disallowed
Default	disallowed

ATTRIBUTE SrvTrace Rcvr Fr Dna outAccess (oua)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed,*** indicates that outgoing calls (from the DTE to the network) to the open (non-CUG) part of the network are permitted. It also permits outgoing calls to DTEs that have Incoming Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Outgoing Access' feature for DNAs in that outgoing access is granted if this attribute is set to a value of ***allowed***.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	disallowed

GROUP SrvTrace Rcvr Fr Dna IncomingOptions

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Properties	Provisioned
Description	This group defines the call options for incoming calls.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna **incCalls (inc)**

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	disallowed

GROUP SrvTrace Rcvr Fr Dna **CallOptions**

Properties	Provisioned
Description	This group defines additional options for calls not related directly to the direction of a call.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna **packetSizes (pks)**

Access	Read only
Description	This attribute indicates the allowable packet sizes supported for calls setup using this *Dna*. To set a given packet size to be allowed on the *Dna*, the packet size is entered, and the corresponding bit in the structure is set to a value of 1. To set a given packet size to be disallowed on the *Dna*, the packet size is entered preceded with the '~' character, and the corresponding bit in the structure is set to a value of 0. ITU-T recommends that packet size 128 always be supported. The bit placement for the packet sizes is as follows: Bit 0 - Packet Size 16 Bit 1 - Packet Size 32 Bit 2 - Packet Size 64 Bit 3 - Packet Size 128 Bit 4 - Packet Size 256

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Bit 5 - Packet Size 512
Bit 6 - Packet Size 1024
Bit 7 - Packet Size 2048
Bit 8 - Packet Size 4096

This attribute relates to the *defaultRecvFrmNetworkPacketSize* and *defaultSendToNetworkPacketSize* attributes.

Mib: FrTraceRcvr

Set of:
16
32
64
128
256
512
1024
2048
4096

Default: (2048)

ATTRIBUTE SrvTrace Rcvr Fr Dna defaultRecvFrmNetworkPacketSize (rps)

Access: Read only

Description: This attribute indicates the default local receive packet size from the network to the DTE for all calls using this particular *Dna*. The *packetSizes* attribute must be set with the corresponding value.

Mib: FrTraceRcvr

Values:
16
32
64
128
256
512
1024
2048
4096

Default: 2048

ATTRIBUTE SrvTrace Rcvr Fr Dna defaultSendToNetworkPacketSize (sps)

Access: Read only

Description: This attribute indicates the default local send packet size from the DTE to the network for all calls using this particular *Dna*. The *packetSizes* attribute must be set with the corresponding value.

Mib: FrTraceRcvr

Values:
16
32

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64
128
256
512
1024
2048
4096

Default 2048

ATTRIBUTE SrvTrace Rcvr Fr Dna cugFormat (cft)

Access Read only

Description This attribute specifies which CUG format is used when DTE signals CUG indices, ***basic*** or ***extended***. A ***basic*** CUG index format is two digits long and an ***extended*** format is four digits long.

This attribute, if set to a value of ***extended***, indicates that the DTE signals and receives CUG indices in extended CUG format. If set to a value of ***basic***, then the DTE signals and receives CUG indices in the basic CUG format.

Mib FrTraceRcvr

Values basic
extended

Default basic

COMPONENT SrvTrace Rcvr Fr Dna ClosedUserGroup (Cug)

Instance Decimal (1..1)

Groups GROUP SrvTrace Rcvr Fr Dna Cug CugOptions

Scope Application

Description *SrvTrace Rcvr/<string> Fr Dna ClosedUserGroup*
This component defines options associated with national or international CUG Identifier. Other DNAs in the network can have CUGs defined which groups these DNAs by their *Cug interlockCode* attribute value. If DNAs are defined with CUGs, calls from DNAs which do not have the same *interlockCode* attribute value defined are refused. Attributes *incAccess* and *outAccess* can override this rule.

If this component is present, the Frame Relay interface which connects to

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the Frame Relay trace receiver must be provisioned with the same *Cug interlockCode* attribute value.

Mib FrTraceRcvr

Common Verbs
Help
List
Display
Add
DELete

GROUP SrvTrace Rcvr Fr Dna Cug CugOptions

Properties Provisioned

Description Attributes in this group define the *ClosedUserGroup* component options associated with the *interlockCode* attribute. DNAs with the same CUG (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same CUG group are defined here.

Mib FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug type

Access Read and write

Description This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an intermediary X.75 Gateway, whereas national closed user groups are usually established between DTEs for which there is no intermediary X.75 Gateway. (National CUGs cannot normally traverse an X.75 Gateway).

This attribute, if set to a value of ***national***, then the CUG is a national CUG, in which case, the *dnic* attribute should be left at its default value since it is not part of a national CUG. If set to a value of ***international***, then the CUG is an international CUG, in which case, the *dnic* attribute should be set appropriately as part of the *Cug interlockCode* attribute.

Mib FrTraceRcvr

Values
national
international

Default national

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug dnic

Access Read and write

Description This attribute specifies the DNIC (Data Network ID Code) of the *Cug* by which packet networks are identified. This attribute is not applicable if the CUG is a national CUG, as specified by the *Cug type* attribute. There are usually 1 or 2 DNICs assigned per country, for public networks. The U.S. is an exception where each BOC has a DNIC. Also, a group of private networks can have its own DNIC.

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DNIC value is not an arbitrary number. It is assigned by international agreement and controlled by ITU-T.

Mib FrTraceRcvr

Values BCD (4)

Default 0000

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug **interlockCode (ilc)**

Access Read and write

Description This attribute specifies the CUG identifier of a national or international CUG call. It is an arbitrary number and it also can be called CUG in some descriptions. Interfaces (DNAs) defined with this number can only make calls to DNAs defined with the same *interlockCode* attribute value.

Mib FrTraceRcvr

Values Decimal (0..65535)

Default 0

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug **preferential (pre)**

Access Read only

Description This attribute, if set to a value of ***yes***, indicates that this *Cug* is the preferential CUG, in which case it will be used during the call establishment phase if the DTE has not explicitly specified a CUG index in the call request packet. If set to a value of ***no***, then this *Cug* is not the preferential CUG.

Only one of the *Cug* components associated with a particular DNA can be the preferential CUG - only one *Cug* component can have this attribute set to ***yes***.

Mib FrTraceRcvr

Values no
yes

Default yes

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug **outCalls (ouc)**

Access Read only

Description This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE into the network) can be made using this particular *Cug*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Cug* - such calls will be cleared by the local DCE.

This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for CUG*s* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.

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Mib	FrTraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that incoming calls (from the network to the DTE) can be made using this particular *Cug*. If set to a value of ***disallowed***, then incoming calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for CUG*s* in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	disallowed

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug privileged (pri)

Access	Read only
Description	This attribute, if set to a value of ***yes***, indicates that this *Cug* is a privileged CUG. In DPN, at least one side of a call setup within a CUG must have the CUG as a privileged CUG. If set to a value of ***no***, then this *Cug* is not privileged. If both the local DTE and the remote DTE subscribe to the CUG, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTEs, in which case the other DTEs cannot call each other, but can call the host. In this example, the host would have the privileged CUG, and the other DTEs would belong to the same CUG, but it would not be privileged.
Mib	FrTraceRcvr
Values	no yes
Default	yes

COMPONENT SrvTrace Rcvr Fr DirectCall (Dc)

Groups	GROUP SrvTrace Rcvr Fr Dc Options
Scope	Application

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Description	*SrvTrace Rcvr/<string> Fr DirectCall* This component defines direct call options for the call to the Frame Relay trace receiver. The connection is initiated on receipt of a *Start FrUni/n SrvTrace* command.
Mib	FrTraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Rcvr Fr Dc Options

Properties	Provisioned
Description	The *Options* group defines attributes associated with the SVC direct call.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dc remoteNpi (rnpi)

Access	Read and write
Description	This attribute indicates the numbering plan used for the *remoteDna*.
Mib	FrTraceRcvr
Values	x121 e164
Default	x121

ATTRIBUTE SrvTrace Rcvr Fr Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (DNA) of the remote end of the connection. This is the DNA of the Frame Relay trace receiver that will receive the trace data.
Mib	FrTraceRcvr
Values	BCD (1..15)
Default	No default

ATTRIBUTE SrvTrace Rcvr Fr Dc type

Access	Read only
Description	This attribute specifies the type of call as ***switched***. For a ***switched*** call, no information is defined at the remote end about the local end of the connection.
Mib	FrTraceRcvr
Values	switched (svc) permanentMaster (master)

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permanentSlave (slave)
permanentBackupSlave (backSl)

Default switched

ATTRIBUTE SrvTrace Rcvr Fr Dc userData (usd)

Access Read and write

Description This attribute contains the user data. It is a 0 to 16 byte length string which is appended to the call request packet that is presented to the called (destination) DTE.

Mib FrTraceRcvr

Values String (0..16, Hex)

Default ""

COMPONENT SrvTrace Rcvr FrAtm

Groups GROUP SrvTrace Rcvr FrAtm Provisioned (Prov)
GROUP SrvTrace Rcvr FrAtm TrafficManagement (Tm)

Scope Application

Description *SrvTrace Rcvr/<string> FrAtm*
This component represents the characteristics of FrAtm service trace receiver. If this component is provisioned, the *X25*, *Fr,* or *Atm* component cannot be provisioned under the same *SrvTrace Rcvr* component. If this component is deleted, all active *SrvTrace Session*s associated with this component are not affected.

Mib FrAtmTraceRcvr

Common Verbs
Help
List
Display
Add
DELete

GROUP SrvTrace Rcvr FrAtm Provisioned (Prov)

Properties Provisioned

Description This group contains general provisioned information of the FrAtm service trace receiver.

When started, service trace attempts to establish a connection to the FR-ATM service specified by *calledAddress* attribute. Every time a different DLCI ranging between *minimumDlci* and *maximumDlci* attributes is specified in call setup message, until a successful connection is established or all available DLCIs are tried.

To reduce the number of useless connection attempt, a consecutive set of

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	DLCI should be provisioned in the FR-ATM service, and with the *minimumDlci* and *maximumDlci* attributes of *PtsFrAtmProv* group corresponding to the minimum and maximum instance number of *Dlci* provisioned in the FR-ATM service.
Mib	FrAtmTraceRcvr

ATTRIBUTE SrvTrace Rcvr FrAtm calledAddress (addr)

Access	Read and write
Description	This attribute specifies the NSAP address of the FR-ATM service through which the FrAtm trace receiver is connected. Changing this attribute does not impact active *SrvTrace Session*s associated with this receiver. This change takes effect when *SrvTrace Session*s are restarted (*stop* and then *start*)
Mib	FrAtmTraceRcvr
Values	String (6..44, AESANsapAddress)
Default	No default

ATTRIBUTE SrvTrace Rcvr FrAtm tracedLength (len)

Access	Read and write
Description	This attribute specifies the maximum number of octets to trace per frame starting from the octet following the frame flag. If the frame length is longer than the value specified by this attribute, then the traced frame is truncated to *tracedLength*. If set to ***disabled***, the traced frame is not truncated. Changing this attribute does not affect active *SrvTrace Session*s. The *SrvTrace Sessions* need to be restarted (*Stop* and then *Start*) for this attribute to take effect.
Mib	FrAtmTraceRcvr
Values	Decimal (1..4000) disabled
Units	octets
Default	2000

ATTRIBUTE SrvTrace Rcvr FrAtm minimumDlci (min)

Access	Read and write
Description	This attribute specifies the minimum provisioned *Dlci* instance number in the FR-ATM service specified by *calledAddress*.
Mib	FrAtmTraceRcvr
Values	Decimal (16..1007)
Default	16

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ATTRIBUTE SrvTrace Rcvr FrAtm maximumDlci (max)

Access	Read and write
Description	This attribute specifies the maximum provisioned *Dlci* instance number in the FR-ATM service specified by *calledAddress*.
Mib	FrAtmTraceRcvr
Values	Decimal (16..1007)
Default	16

GROUP SrvTrace Rcvr FrAtm TrafficManagement (Tm)

Properties	Provisioned
Description	This group contains basic traffic parameters used for ATM connection setup procedure.
Mib	FrAtmTraceRcvr

ATTRIBUTE SrvTrace Rcvr FrAtm serviceCategory (service)

Access	Read and write
Description	This attribute specifies the service category of the ATM connection. Currently, the service trace receiver feature only supports ATM connections whose service category is UBR, RT-VBR or NRT-VBR.
Mib	FrAtmTraceRcvr
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	unspecifiedBitRate

ATTRIBUTE SrvTrace Rcvr FrAtm peakCellRate (pcr)

Access	Read and write
Description	The attribute specifies the peak cell rate allowed on the ATM connection.
Mib	FrAtmTraceRcvr
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

COMPONENT SrvTrace Rcvr Atm

Groups	GROUP SrvTrace Rcvr Atm Provisioned (Prov) GROUP SrvTrace Rcvr Atm TrafficManagement (Tm)
Scope	Application

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Description	*SrvTrace Rcvr/<string> Atm* This component represents the characteristics of ATM service trace receiver. If this component is provisioned, the *X25*, *Fr,* or *FrAtm* component cannot be provisioned under the same *SrvTrace Rcvr* component. If this component is deleted, all active *SrvTrace Session*s associated with this component are not affected.
Mib	AtmTraceRcvr
Common Verbs	Help List Display Add DELete

GROUP SrvTrace Rcvr Atm Provisioned (Prov)

Properties	Provisioned
Description	This group contains general provisioned information of the ATM service trace receiver.
Mib	AtmTraceRcvr

ATTRIBUTE SrvTrace Rcvr Atm calledAddress (addr)

Access	Read and write
Description	This attribute specifies the NSAP address of the ATM service trace receiver. Changing this attribute does not impact active *SrvTrace Session*s associated with this receiver. This change takes effect when *SrvTrace Session*s are restarted (*stop* and then *start*).
Mib	AtmTraceRcvr
Values	String (6..44, AESANsapAddress)
Default	No default

ATTRIBUTE SrvTrace Rcvr Atm tracedLength (len)

Access	Read and write
Description	This attribute specifies the maximum number of octets to trace per frame starting from the octet following the frame flag. If the frame length is longer than the value specified by this attribute, then the traced frame is truncated to *tracedLength*. If set to ***disabled***, the traced frame is not truncated. Changing this attribute does not affect active *SrvTrace Session*s. The *SrvTrace Sessions* need to be restarted (*Stop* and then *Start*) for this attribute to take effect. When this *SrvTrace Rcvr* is used for Frame Relay trace services, the [*FrUni* / *FrNni] SrvTrace Filter tracedLength* attribute overrides this attribute.

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Mib	AtmTraceRcvr
Values	Decimal (1..4000) disabled
Units	octets
Default	2000

GROUP SrvTrace Rcvr Atm TrafficManagement (Tm)

Properties	Provisioned
Description	This group contains basic traffic parameters used for ATM connection setup procedure.
Mib	AtmTraceRcvr

ATTRIBUTE SrvTrace Rcvr Atm serviceCategory (service)

Access	Read and write
Description	This attribute specifies the service category of the ATM connection. Currently, the service trace receiver feature only supports ATM connections whose service category is UBR, RT-VBR or NRT-VBR.
Mib	AtmTraceRcvr
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	unspecifiedBitRate

ATTRIBUTE SrvTrace Rcvr Atm peakCellRate (pcr)

Access	Read and write
Description	The attribute specifies the peak cell rate allowed on the ATM connection.
Mib	AtmTraceRcvr
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

COMPONENT SrvTrace Session

Instance	Decimal (1..50)
Groups	GROUP SrvTrace Session Operational
Scope	Application

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Description	*SrvTrace Session/n* The *Session* component provides information about an active trace.
Mib	TraceBase
Dyn. Subcomp.	COMPONENT SrvTrace Session X25 COMPONENT SrvTrace Session FrameRelay (Fr) COMPONENT SrvTrace Session FrAtm COMPONENT SrvTrace Session Atm
Common Verbs	Help List Display

GROUP SrvTrace Session **Operational**

Properties	Operational
Description	This group provides the operational attributes for the *Session* component. It displays the service being traced and the destination for the traced data.
Mib	TraceBase

ATTRIBUTE SrvTrace Session **serviceTraced (service)**

Access	Read only
Description	This attribute identifies the service being traced. An example is *FrUni/5*.
Mib	TraceBase
Values	The name of the component
Default	No default

ATTRIBUTE SrvTrace Session **receiver (rcvr)**

Access	Read only
Description	This attribute identifies the trace receiver which is the destination for the traced data.
Mib	TraceBase
Values	The name of the component
Default	No default

ATTRIBUTE SrvTrace Session **sessionState**

Access	Read only
Description	This attribute indicates the state of the trace session. The ***active*** value is the normal state for a running trace session. The ***waitingForSession***, ***waitingForProvisioningData***, ***callingReceiver*** and ***binding*** values are all normal transient states used to establish a session with the trace receiver on receipt of a *Start* command. In the

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waitingForSession state, a trace session is being allocated. In the ***waitingForProvisioningData*** state, a trace session has been allocated and receiver provisioning data, used to setup the call to the receiver, is being retrieved. In the ***callingReceiver*** state, the call to the receiver is being established. In the ***binding*** state, the call to the receiver has been established and the service data path is being adjusted to include trace. The ***unbinding***, ***clearingCallToReceiver*** and ***releasingSession*** values are all normal transient states used to disconnect a session with the trace receiver on receipt of a *Stop* command. In the ***unbinding*** state, the service data path is being adjusted to remove trace. In the ***clearingCallToReceiver*** state, the call to the receiver is being cleared. In the ***releasingSession*** state, a trace session is being deallocated.
A value of ***abortingDueToCallFailure*** indicates that the call to the trace receiver has disconnected unexpectedly and trace is stopping. The clear cause and diagnostic for the failure is reported. Correct the fault indicated and retry the *Start* command.
Values of ***initializing*** and ***idle*** can never be seen since these states occur before a *Session* component is created and after it is destroyed.

Mib: TraceBase

Values:
initializing
idle
waitingForSession
releasingSession
waitingForProvisioningData
callingReceiver
clearingCallToReceiver
abortingDueToCallFailure
binding
unbinding
active

Default: No default

ATTRIBUTE SrvTrace Session **callState**

Access: Read only

Description: This attribute indicates the state of the trace call to the receiver.
The ***dataTransfer*** value is the normal state for the call.
The ***initializing***, ***creatingVc***, ***waitingApiUp***, ***calling***, and ***enteringDataTransfer*** values are all normal transient states used to establish a call to the trace receiver on receipt of a *Start* command. These states occur during the ***callingReceiver*** state of the *sessionState* attribute. In the ***initializing*** state, receiver provisioning data, used to setup the call to the receiver, is being retrieved. In the ***creatingVc*** state, the local VC is being created. In the ***calling*** state, the direct call to the receiver is being connected. In the ***enteringDataTransfer*** state, the call to the receiver has been accepted and the data path is being established.
The ***clearing***, ***terminatingVc*** and ***terminated*** values are all normal transient states used to disconnect a call with the trace receiver on receipt of a *Stop* command. These states occur during the

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clearingCallToReceiver state of the *sessionState* attribute. In the ***clearing*** state, the call to the receiver is being cleared. In the ***terminatingVc*** state, the local VC is being destroyed. In the ***terminated*** state, the call is down and all cleanup is complete.
A value of ***reseting*** indicates a data sequencing problem has occurred on the call. This value is applicable for sessions to X.25 trace receivers only and indicates an incompatibility with the receiver. Tracing continues, however some trace data may have been lost.
A value of ***terminating*** is a normal transient state which occurs if a *Stop* command is received before the local VC has been created.

Mib	TraceBase
Values	initializing creatingVc calling clearing enteringDataTransfer terminatingVc dataTransfer reseting terminating terminated waitingApiUp
Default	No default

ATTRIBUTE SrvTrace Session queueState

Access	Read only
Description	This attribute indicates the state of the trace queue. A value of ***normal*** indicates that traced data is being queued normally. A value of ***full*** indicates that trace data is being discarded because the queue is full. A value of ***blocked*** indicates that trace data is being discarded because the trace VC is not able to transport the data.
Mib	TraceBase
Values	normal full blocked
Default	normal

ATTRIBUTE SrvTrace Session framesQueued

Access	Read only
Description	This attribute indicates the number of traced frames that are currently queued to be sent to the VC.
Mib	TraceBase
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE SrvTrace Session framesSent

Access	Read only
Description	This attribute counts the number of traced frames sent to the VC. The counter wraps when it exceeds its maximum value.
Mib	TraceBase
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SrvTrace Session framesDiscarded

Access	Read only
Description	This attribute counts the number of discarded trace frames while the trace queue is full. Frames discarded while the queue is blocked are not counted. The counter wraps when it exceeds its maximum value.
Mib	TraceBase
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SrvTrace Session framesTruncated

Access	Read only
Description	This attribute counts the number of truncated frames that require truncation. Truncation is needed when the traced frame length exceeds the limitation specified for this service trace session. If a *Filter* component exists under the service *SrvTrace*, the limitation is specified by *SrvTrace Filter tracedLength* attribute; otherwise the limitation is specified by the *tracedLength* attribute under component *SrvTrace Rcvr/ <string> [FrAtm | Atm]*. This counter wraps when it exceeds its maximum value.
Mib	TraceBase
Values	Decimal (0..4294967295)
Default	No default

COMPONENT SrvTrace Session X25

Scope	Application

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Description	*SrvTrace Session/<n> X25* This component identifies the access method used by the receiver of the trace data as X.25.
Mib	X25TraceRcvr
Dyn. Subcomp.	COMPONENT SrvTrace Session X25 Vc
Common Verbs	Help List Display

COMPONENT SrvTrace Session X25 Vc

Groups	GROUP SrvTrace Session X25 Vc CallData (Cad) GROUP SrvTrace Session X25 Vc IntervalData (Intd) GROUP SrvTrace Session X25 Vc Statistics (Stats)
Scope	Application
Description	*... Vc()* This component defines display of general Vc dynamic attributes
Mib	X25TraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Session X25 Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to General *Vc*. It can be displayed only for General *Vc* which is created by application.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Session X25 Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc*** or ***svc***. *type* is provided at provisioning time.
Mib	X25TraceRcvr
Values	pvc svc
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc state

Access	Read only

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Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	X25TraceRcvr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **previousState**

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	X25TraceRcvr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **diagnosticCode**

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	X25TraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **previousDiagnosticCode**

Access	Read only

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Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	X25TraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **calledNpi**

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	X25TraceRcvr
Values	x121 e164
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **calledDna**

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	X25TraceRcvr
Values	BCD (1..15)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **calledLcn**

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	X25TraceRcvr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **callingNpi**

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	X25TraceRcvr

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Values	x121 e164
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **callingDna**

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	X25TraceRcvr
Values	BCD (1..15)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **callingLcn**

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	X25TraceRcvr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **accountingEnabled**

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	X25TraceRcvr
Values	yes no
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **fastSelectCall**

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	X25TraceRcvr
Values	yes no
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **localRxPktSize**

Access	Read only

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Description	This attribute displays the locally negotiated size of send packets.
Mib	X25TraceRcvr
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc localTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	X25TraceRcvr
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc localTxWindowSize

Access	Read only
Description	This attribute displays the send window size provided on incoming call packets or the default when a call request packet does not explicitly provide the window size.
Mib	X25TraceRcvr
Values	Decimal (0..127)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc localRxWindowSize

Access	Read only

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Description	This attribute displays the receive window size provided on incoming call packets or the default when a call request does not explicitly provide the window sizes.
Mib	X25TraceRcvr
Values	Decimal (0..127)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **pathReliability**

Access	Read only
Description	This attribute displays the path reliability.
Mib	X25TraceRcvr
Values	high normal
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **accountingEnd**

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	X25TraceRcvr
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **priority**

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	X25TraceRcvr
Values	normal high
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **segmentSize**

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	X25TraceRcvr
Values	Decimal (0..4096)

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Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **subnetTxPktSize**

Access	Read only
Description	This attribute displays the locally negotiated size of the data packets on this *Vc*.
Mib	X25TraceRcvr
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **subnetTxWindowSize**

Access	Read only
Description	This attribute displays the current send window size of *Vc*.
Mib	X25TraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **subnetRxPktSize**

Access	Read only
Description	This attribute displays the locally negotiated size of receive packets.
Mib	X25TraceRcvr
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **subnetRxWindowSize**

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Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets and to the default when a call request does not explicitly provide the window sizes.
Mib	X25TraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **maxSubnetPktSize**

Access	Read only
Description	This attribute displays the maximum packet size allowed on *Vc*.
Mib	X25TraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **transferPriorityToNetwork**

Access	Read only
Description	This attribute displays the priority in which data is transferred to the network. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput.
Mib	X25TraceRcvr
Values	normal high
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **transferPriorityFromNetwork**

Access	Read only

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Description	This attribute displays the priority in which data is transferred from the network. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, and the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, and the routing metric is set to throughput.
Mib	X25TraceRcvr
Values	normal high
Default	No default

GROUP SrvTrace Session X25 Vc **IntervalData (Intd)**

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Session X25 Vc **elapsedTimeTillNow**

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	X25TraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **segmentsRx**

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink

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AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.

Mib	X25TraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **segmentsSent**

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	X25TraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **startTime**

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	X25TraceRcvr
Values	Time (DHMS)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **callReferenceNumber**

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	X25TraceRcvr

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Values	Decimal (0..4294967295)
Default	No default

GROUP SrvTrace Session X25 Vc **Statistics (Stats)**

Properties	Operational
Description	*... Statistics(Stats)* This group defines general attributes collected by general *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Session X25 Vc **ackStackingTimeouts**

Access	Read only
Description	This attribute counts the number of ack stacking timer expiries. It is used as an indicator of the acknowledgment behavior across the subnet when ack stacking is in effect. If it expires often, usually this means end users will experience longer delay. The ack stacking timer specifies how long the *Vc* will wait before finally sending the subnet acknowledgment. if this attribute is set to a value of 0, then the *Vc* will automatically return acknowledgment packets without delay. If this attribute is set to a value other than zero, then the *Vc* will wait for this amount of time in an attempt to piggyback the acknowledgment packet on another credit or data packet. If the *Vc* cannot piggyback the acknowledgment packet within this time, then the packet is returned without piggybacking.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **outOfRangeFrmFromSubnet**

Access	Read only
Description	This attribute counts the number of subnet frames discarded due to the sequence number being out of range. Two Categories apply for the General *Vc* 1) lost Acks (previous Range) 2) unexpected Packets (next Range) *Vc* internally maintains its own sequence number of packet order and sequencing. Due to packet retransmission, *Vc* may receive duplicate

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packets that have the same *Vc* internal sequence number. Only 1 copy is accepted by the *Vc* and other copies of the same packets are detected through this count. This attribute can be used to record the frequency of packet retransmission due to *Vc* and other part of the subnet.

Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **duplicatesFromSubnet**

Access	Read only
Description	This attribute counts the number of subnet packets discarded due to duplication. It is used to detect software error fault or duplication caused by retransmitting.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **frmRetryTimeouts**

Access	Read only
Description	This attribute counts the number of frames which have retransmission time-out. If packets from *Vc* into the subnet are discarded by the subnet, the source *Vc* will not receive any acknowledgment. The retransmission timer then expires and packets will be retransmitted again. Note that the *Vc* idle probe may be retransmitted and is included in this count. This statistics does not show the distribution of how many times packets are retransmitted (e.g. first retransmission results in successful packet forwarding).
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **peakRetryQueueSize**

Access	Read only
Description	This attribute indicates the peak size of the retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest body of unacknowledged packets.
Mib	X25TraceRcvr
Values	Decimal (0..5000)

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Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **peakOoSeqQueueSize**

Access	Read only
Description	This attribute indicates the peak size of the out of sequence queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **peakOoSeqFrmForwarded**

Access	Read only
Description	This attribute indicates the peak size of the sequence packet queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets, which by the receipt of an expected packet have been transformed to expected packets. The number of times this peak is reached is not recorded as it is traffic dependent.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **peakStackedAcksRx**

Access	Read only
Description	This attribute indicates the peak size of wait acks. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest collective acknowledgment.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc **subnetRecoveries**

Access	Read only
Description	This attribute counts the number of successful *Vc* recovery attempts. This attribute is used as an indicator of how many times the *Vc* path is broken but can be recovered. This attribute is useful to record the number of network path failures.
Mib	X25TraceRcvr
Values	Decimal (0..5000)

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Default	No default

ATTRIBUTE SrvTrace Session X25 Vc windowClosuresToSubnet

Access	Read only
Description	This attribute counts the number of window closures to subnet. A packet may have been sent into the subnet but its acknowledgment from the remote *Vc* has not yet been received. This is a 8 bit sequence number.This number is useful in detecting whether the *Vc* is sending any packet into the subnet.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc windowClosuresFromSubnet

Access	Read only
Description	This attribute counts the number of window closures from subnet. This attribute is useful in detecting whether the *Vc* is receiving any packet from the subnet.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc wrTriggers

Access	Read only
Description	This attribute displays the number of times the *Vc* stays within the W-R region. The W-R region is a value used to determined the timing of credit transmission. Should the current window size be beneath this value, the credits will be transmitted immediately. Otherwise, they will be transmitted later with actual data. The wrTriggers statistic is therefore used to analyze the flow control and credit mechanism.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

COMPONENT SrvTrace Session FrameRelay (Fr)

Scope	Application

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Description	*SrvTrace Session/<n> FrameRelay* This component identifies the access method used by the receiver of the trace data as Frame Relay.
Mib	FrTraceRcvr
Dyn. Subcomp.	COMPONENT SrvTrace Session Fr Vc
Common Verbs	Help List Display

COMPONENT SrvTrace Session Fr Vc

Groups	GROUP SrvTrace Session Fr Vc CallData (Cad) GROUP SrvTrace Session Fr Vc IntervalData (Intd) GROUP SrvTrace Session Fr Vc FrameRelayData (Frd)
Scope	Application
Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	FrTraceRcvr
Common Verbs	Help List Display

VERB Ping SrvTrace Session Fr Vc

Impact	Passive
Description	Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/*<n>* Dlci/*<n>* Vc Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP. Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified. The ping command can be issued with or without options. If no options are

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specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control

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information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP SrvTrace Session Fr Vc **CallData (Cad)**

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Session Fr Vc **type**

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	FrTraceRcvr
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **state**

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	FrTraceRcvr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6

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	dceClearIndicationP7 termination
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **previousState**

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	FrTraceRcvr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **diagnosticCode**

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrTraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **previousDiagnosticCode**

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrTraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **calledNpi**

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.

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Mib	FrTraceRcvr
Values	x121 e164
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **calledDna**

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	FrTraceRcvr
Values	BCD (1..15)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **calledLcn**

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	FrTraceRcvr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **callingNpi**

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	FrTraceRcvr
Values	x121 e164
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **callingDna**

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	FrTraceRcvr
Values	BCD (1..15)
Default	No default

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ATTRIBUTE SrvTrace Session Fr Vc **callingLcn**

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	FrTraceRcvr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **accountingEnabled**

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	FrTraceRcvr
Values	yes no
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **fastSelectCall**

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	FrTraceRcvr
Values	yes no
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **pathReliability**

Access	Read only
Description	This attribute displays the path reliability.
Mib	FrTraceRcvr
Values	high normal
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **accountingEnd**

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.

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Mib	FrTraceRcvr
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **priority**

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	FrTraceRcvr
Values	normal high
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **segmentSize**

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	FrTraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **maxSubnetPktSize**

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	FrTraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **rcosToNetwork (rcosto)**

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	FrTraceRcvr
Values	throughput delay multimedia
Default	No default

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ATTRIBUTE SrvTrace Session Fr Vc **rcosFromNetwork (rcosfrom)**

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	FrTraceRcvr
Values	throughput delay multimedia
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **emissionPriorityToNetwork (epto)**

Access	Read only
Description	This attribute displays the network internal emission priority to the network.
Mib	FrTraceRcvr
Values	normal high interrupting
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **emissionPriorityFromNetwork (epfrom)**

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	FrTraceRcvr
Values	normal high interrupting
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **dataPath (dapa)**

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string

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dprsMcsOnly is displayed.

If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.

Mib	FrTraceRcvr
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **dprsMcsEndPoint (dmep)**

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	FrTraceRcvr
List of	The name of the component
Default	No default

GROUP SrvTrace Session Fr Vc **IntervalData (Intd)**

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Session Fr Vc **elapsedTimeTillNow**

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	FrTraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **segmentsRx**

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by

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accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.

Mib	FrTraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **segmentsSent**

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	FrTraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **startTime**

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	FrTraceRcvr
Values	Time (DHMS)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **callReferenceNumber**

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.

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Mib	FrTraceRcvr
Values	Decimal (0..4294967295)
Default	No default

GROUP SrvTrace Session Fr Vc **FrameRelayData (Frd)**

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Session Fr Vc **frmCongestedToSubnet**

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **cannotForwardToSubnet**

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all

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	subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	FrTraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc duplicatesFromSubnet

Access	Read only

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Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **notDataXferFromSubnet**

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **frmLossTimeouts**

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **ooSeqByteCntExceeded**

Access	Read only
Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **peakOoSeqPktCount**

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Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **peakOoSeqFrmForwarded**

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses this statistics to set a maximum size for the out-of-sequenced queue.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **sendSequenceNumber**

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	FrTraceRcvr
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **pktRetryTimeouts**

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrTraceRcvr

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Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **peakRetryQueueSize**

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **subnetRecoveries**

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **ooSeqPktCntExceeded**

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrTraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc **peakOoSeqByteCount**

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.

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Mib	FrTraceRcvr
Values	Decimal (0..50000)
Default	No default

COMPONENT SrvTrace Session FrAtm

Groups	GROUP SrvTrace Session FrAtm Operational
Scope	Application
Description	*SrvTrace Session/<n> FrAtm* This component indicates that this *SrvTrace Session* uses FR-ATM (FrameRelay-ATM Interworking) service to connect with the service trace receiver
Mib	FrAtmTraceRcvr
Dyn. Subcomp.	COMPONENT SrvTrace Session FrAtm AtmConnection (AtmCon)
Common Verbs	Help List Display

GROUP SrvTrace Session FrAtm Operational

Properties	Operational
Description	This group contains the attributes of the FrAtm connection used by the service trace session.
Mib	FrAtmTraceRcvr

ATTRIBUTE SrvTrace Session FrAtm activeDlci (dlci)

Access	Read only
Description	This attribute indicates the DLCI (Data Link Connection Identifier) of remote FR-ATM (FrameRelay-ATM Interworking) service associated with the service trace connection.
Mib	FrAtmTraceRcvr
Values	Decimal (16..1007)
Default	No default

COMPONENT SrvTrace Session FrAtm AtmConnection (AtmCon)

Groups	GROUP SrvTrace Session FrAtm AtmCon Operational (Oper)
Scope	Device

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Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	FrAtmTraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Session FrAtm AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	FrAtmTraceRcvr

ATTRIBUTE SrvTrace Session FrAtm AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	FrAtmTraceRcvr
Values	The name of the component
Default	No default

COMPONENT SrvTrace Session Atm

Scope	Application
Description	*SrvTrace Session/<n> Atm* This component indicates that this *SrvTrace Session* uses ATM services to connect with the service trace receiver.
Mib	AtmTraceRcvr
Dyn. Subcomp.	COMPONENT SrvTrace Session Atm AtmConnection (AtmCon)
Common Verbs	Help List Display

COMPONENT SrvTrace Session Atm AtmConnection (AtmCon)

Groups	GROUP SrvTrace Session Atm AtmCon Operational (Oper)
Scope	Device

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Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmTraceRcvr
Common Verbs	Help List Display

GROUP **SrvTrace Session Atm AtmCon** **Operational (Oper)**

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	AtmTraceRcvr

ATTRIBUTE **SrvTrace Session Atm AtmCon** **nextHop**

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmTraceRcvr
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - SrvTrace

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Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Ss7

NN10600-060

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Document date: March 2006
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Job function: Product Fundamentals
Type: NTP
Language type: U.S. English

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COMPONENT SignallingSystem7 (Ss7)

Scope	Application
Description	*SignallingSystem7* This component represents the Signalling System 7.
Mib	Ss7
Opt. Subcomp.	COMPONENT Ss7 MessageTransferPartLayer3 (Mtp3) COMPONENT Ss7 SignallingConnControlPart (Sccp) COMPONENT Ss7 AccessLinkControlApplicationPart (Alcap) COMPONENT Ss7 SaalNni (SaalNni)
Common Verbs	Help List Display Add DELete

COMPONENT Ss7 MessageTransferPartLayer3 (Mtp3)

Instance	Decimal (1..16)
Groups	GROUP Ss7 Mtp3 Provisioned (Prov) GROUP Ss7 Mtp3 OsiState (State) GROUP Ss7 Mtp3 Operational (Oper) GROUP Ss7 Mtp3 WlcCustomCounters (WlcCustomCntr)

COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3

Scope	Application

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Description	Ss7 MessageTransferPartLayer3/n This component represents an MTP 3 layer of the SS7 stack.
Mib	Ss7
Subcomponents	COMPONENT Ss7 Mtp3 Linkset (Ls)
Opt. Subcomp.	COMPONENT Ss7 Mtp3 ServiceIndicator (ServInd) COMPONENT Ss7 Mtp3 Routeset (Rs)
Common Verbs	Help List Display Add DELete

GROUP Ss7 Mtp3 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mtp3* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 mtpType

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of MTP3. The possible values for *mtpType* are: ***mtp3*** - This is the standard MTP layer 3 from Q.704 that supports signalling units up to 272 octets in length. ***mtp3b*** - This is the MTP layer 3 broadband variant that supports signalling units up to 4096 octets in length. For the SS7 stack on the Iu interface this attribute must be set to ***mtp3b***. For the SS7 stack on the Call Server interface this attribute must be set to ***mtp3***. Changing the value of this attribute causes all the linksets associated with the MTP3 layer to be restarted.
Mib	Ss7
Values	mtp3 mtp3b
Default	mtp3b

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ATTRIBUTE Ss7 Mtp3 origPointCode (opc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the point code of the node that the MTP3 layer manages. The point code must be provisioned in one of the following formats: basic***:*** The point code is provisioned as a decimal number in the range ***1***..***16383***. A value of ***0*** is not valid. segmented: The point code is provisioned as three integers, separated by dots. The first integer must be in the range ***0***..***7***, the second integer must be in the range ***0..255***, and the third integer must be in the range ***0***..***7***. A value of ***0.0.0*** is not valid. This attribute must not specify a point code identical to that specified by *adjPointCode*. Changing the value of this attribute causes all the linksets associated with this MTP3 layer to be restarted.
Mib	Ss7
Values	Integer Sequence
Default	No default

ATTRIBUTE Ss7 Mtp3 changeoverHoldoffTimer (t1)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T1 defined in ITU-T recommendation Q.704. This timer value determines how long to wait for a failed link to become available when changeover is required, but there is no alternate link. It is used to avoid message mis-sequencing on changeover. This timer is started when a link goes down and a changeover is required, but changeover messages cannot be exchanged on an alternate link. This timer is stopped when the failed link becomes available. Upon timer expiration, it sends all the retrieved (layer 2) and buffered (layer 3) messages down the new link and marks changeover as complete.
Mib	Ss7
Values	Decimal (500..1200)
Units	msec

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Default	500

ATTRIBUTE Ss7 Mtp3 changeoverAckTimer (t2)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T2 defined in ITU-T recommendation Q.704. This timer is started when MTP layer 3 receives a Backward Sequence Number of the next signalling unit to be Transmitted (BSNT) from a link in the changeover process. This timer is stopped when the link becomes available, or when a changeover message is received while waiting for an ack. Upon timer expiration, the link is released. The number of expiries of this timer is indicated by the attribute *changeoverAckTimeouts*.
Mib	Ss7
Values	Decimal (700..2000)
Units	msec
Default	700

ATTRIBUTE Ss7 Mtp3 changebackDiversionDelayTimer (t3)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T3 defined in ITU-T recommendation Q.704. It provides time controlled diversion-delay to avoid mis-sequencing on changeback. This timer is started when a link is in changeback and the signalling point at the remote end of newly available link is not accessible via an alternative link. Upon timer expiry, traffic is restarted on the link.
Mib	Ss7
Values	Decimal (500..1200)
Units	msec
Default	500

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ATTRIBUTE Ss7 Mtp3 firstAttemptChangebackAckTImer (t4)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T4 defined in ITU-T recommendation Q.704. This timer is started when a link is in changeback and the Signalling Point (SP) at the remote end of the newly available link is accessible via an alternative link. This timer is stopped when a link has attempted changeback for the first time and receives a changeback ack for every changeback declaration sent. Upon timer expiration, *secondAttemptChangebackAckTimer* is started and all the unacknowledged changeback declarations are re-sent. The number of resends of the changeback declarations is indicated by the attribute *changebackDeclarationTimeouts*.
Mib	Ss7
Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Ss7 Mtp3 secondAttemptChangebackAckTimer (t5)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T5 defined in ITU-T recommendation Q.704. It creates a delay to avoid oscillation of initial alignment failure and link restart. The timer is started when a link does not changeback in the first attempt with *firstAttemptChangeBackAckTimer.* The timer is stopped when a link is in the second attempt of changeback and receives a changeback ack for every changeback declaration sent. Upon timer expiration, changeback is terminated. The number of expiries of this timer is indicated by the attribute *secondAttemptChangebackAckTimeouts*.
Mib	Ss7
Values	Decimal (500..1200)
Units	msec

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Default	500

ATTRIBUTE Ss7 Mtp3 uninhibitAckTimer (t12)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T12 defined in ITU-T recommendation Q.704. The timer is started every time a link *Uninhibit* command is executed. The timer is stopped when the link uninhibit is acknowledged by the remote end. Upon timer expiry, the uninhibit is started again for a maximum of one more time. If it fails this time, the uninhibit is cancelled. The number of expiries of this timer is indicated by the attribute *uninhibitAckTimeouts*.
Mib	Ss7
Values	Decimal (800..1500)
Units	msec
Default	800

ATTRIBUTE Ss7 Mtp3 forceUninhibitTimer (t13)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T13 defined in ITU-T recommendation Q.704. The timer is started when this end initiates a link force uninhibit. The timer is stopped when the signalling link uninhibit is acknowledged. Upon timer expiry, the uninhibit is started again one more time. If it fails this time, the uninhibit is cancelled. The number of expiries of this timer is indicated by the attribute *forceUninhibitTimeouts.*
Mib	Ss7
Values	Decimal (800..1500)
Units	msec
Default	800

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ATTRIBUTE Ss7 Mtp3 inhibitAckTimer (t14)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T14 defined in ITU-T recommendation Q.704. This timer waits for inhibition acknowledgement. The timer is started when an *Inhibit* command is executed. The timer is stopped when the local link inhibit is denied or successful. Upon expiry, the local link inhibit request is cancelled.
Mib	Ss7
Values	Decimal (2..3)
Units	seconds
Default	2

ATTRIBUTE Ss7 Mtp3 initialAlignmentDelayTimer (t17)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T17 defined in ITU-T recommendation Q.704. It creates a delay to avoid oscillation of initial alignment failure and link restart. This timer is started when a signalling link is started. Upon timer expiry, it sends a START message to layer 2.
Mib	Ss7
Values	Decimal (800..1500)
Units	msec
Default	800

ATTRIBUTE Ss7 Mtp3 localInhibitTestTimer (t22)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T22 (Local inhibit test timer) defined in ITU-T recommendation Q.704. This timer is started when a link becomes locally inhibited. Upon timer expiry, if the link is still unavailable and locally inhibited, the timer is restarted, and a local inhibit test message is sent to the remote end.
Mib	Ss7

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Values	Decimal (180..360)
Units	seconds
Default	180

ATTRIBUTE Ss7 Mtp3 remoteInhibitTestTimer (t23)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T23 (Remote inhibit test timer) defined in ITU-T recommendation Q.704. This timer is started when a link becomes remote inhibited. Upon timer expiry, if the link is still unavailable and remotely inhibited, the timer is restarted, and a remote inhibit test message is sent to the remote end
Mib	Ss7
Values	Decimal (180..360)
Units	seconds
Default	180

ATTRIBUTE Ss7 Mtp3 sltAckTimer (tQ707T1)

Access	Read: All Write: All
Description	This attribute specifies the value of the Supervision timer to wait for a signalling link test acknowledgement message. This timer is started every time a Signalling Link Test Controller (SLTC) sends out a test message. The timer is stopped when the SLTC receives an acknowledge message from the peer MTP3 layer. Upon timer expiration, if this is the first attempt, this timer is restarted and a second attempt is made. If the timer expires after the second attempt, the MTP3 layer is informed of a broken link.
Mib	Ss7
Values	Decimal (4..12)
Units	seconds
Default	4

ATTRIBUTE Ss7 Mtp3 sltIntervalTimer (tQ707T2)

Access	Read: All Write: All

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Description	This attribute specifies the value of the Interval timer defined in ITU-T recommendation Q.707 for sending signalling link test messages. The timer is started when a link comes in service, and each time the timer expires if the link is still good. The timer is stopped when the link fails, as determined by the *sltAckTimer*. Upon timer expiry, another test message is sent to the peer and the timer is restarted.
Mib	Ss7
Values	Decimal (30..90)
Units	seconds
Default	30

ATTRIBUTE Ss7 Mtp3 reroutingHoldOffTimer (t6)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T6 defined in ITU-T recommendation Q.704. It provides delay to avoid message mis-sequencing on controlled rerouting. This timer is started when a signalling route toward a given destination becomes available and the controlled rerouting procedure is invoked. Upon timer expiry, traffic is restarted on the route made available.
Mib	Ss7
Values	Decimal (500..1200)
Units	msec
Default	800

ATTRIBUTE Ss7 Mtp3 routeSetTestRepeatTimer (t10)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T10 defined in ITU-T recommendation Q.704. It indicates the repeat frequency of the route set test message. This timer is started when a signalling-route-set-test message is sent after receiving a transfer-prohibited (TFP) message for a specific destination. Upon timer expiry, the signalling-route-set-test message is resent.

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	The timer is sopped when a transfer-allowed (TFA) message is received, indicating that the destination has become accessible.
Mib	Ss7
Values	Decimal (30..60)
Units	seconds
Default	30

GROUP Ss7 Mtp3 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Mtp3 operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Mtp3 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

GROUP Ss7 Mtp3 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PSSs7MessageTransferPartLayer3* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 changeoverAckTimeouts (t2Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T2, specified by the attribute *changeoverAckTimer*.

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	The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 firstAttemptChangebackAckTmouts (t4Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T4, specified by the attribute *firstAttemptChangebackAckTimer.* The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 secondAttemptChangebackAckTmouts (t5Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T5, specified by the attribute *secondAttemptChangebackAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 forceUninhibitAckTimeouts (t13Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T13, specified by the attribute *forceUninhibitAckTimer.* The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

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GROUP Ss7 Mtp3 WIcCustomCounters (WIcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3

Description	The statistics record generated by the SignallingSystem7 MessageTransferPartLayer3 component.

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ATTRIBUTE Ss7 Mtp3 linkSetsUnavailable (lsUnavail)

Description	This attribute indicates the number of linkset unavailable conditions over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Ss7 Mtp3 Linkset (Ls)

Instance	Decimal (0..63)
Groups	GROUP Ss7 Mtp3 Ls Provisoned (Prov) GROUP Ss7 Mtp3 Ls OsiState (State) GROUP Ss7 Mtp3 Ls WlcCustomCounters (WlcCustomCntr)
Scope	Application
Description	Ss7 Mtp3/n Linkset/n This component represents an MTP3 linkset. A linkset is a grouping of signalling links that are used to transfer signalling between this node and a specific adjacent signalling point.
Mib	Ss7
Subcomponents	COMPONENT Ss7 Mtp3 Ls Link (Lk)
Opt. Subcomp.	COMPONENT Ss7 Mtp3 Ls RouteInfo (Ri)
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK Ss7 Mtp3 Ls

Impact	Service
Description	*Lock [-force] Mtp3/n Linkset/n* This verb causes the specified *Ss7LinkSet* component to immediately enter the OSI ***locked*** administrative state. **Options:** *-force* If this option is specified, the *Link*Set is locked. Otherwise, the lock command failed for the *linkSet*.

GROUP Ss7 Mtp3 Ls Provisoned (Prov)

Properties	Provisioned

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Description	This group contains the provisionable attributes of the *Ss7LinkSet* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls adjPointCode (apc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the point code of the node that this node directly connects to through this linkset. The point code must be provisioned in one of the following formats: basic***:*** The point code is provisioned as a decimal number in the range ***1***..***16383***. A value of ***0*** is not valid. segmented: The point code is provisioned as three integers, separated by dots. The first integer must be in the range ***0***..***7***, the second integer must be in the range ***0***..***255***, and the third integer must be in the range ***0***..***7***. A value of ***0.0.0*** is not valid. This attribute must not specify a point code identical to that specified by *origPointCode*. Changing the value of this attribute causes all the linksets associated with the MTP3 layer to be restarted.
Mib	Ss7
Values	Integer Sequence
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls networkIndicator (netInd)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies whether the network is a national network, or an international network. This attribute determines the value that is filled in the Network Indicator field of the messages sent to the remote end.This attribute must match what the peer MTP3 layer on the remote end expects in the messages. Changing the value of this attribute causes all the linksets associated with this MTP3 layer to be restarted.Each meaning of each valid value for *networkIndicator* is described in SS7 Mtp3 specification Q.704. ***international*** - MTP3 node is a member of an “International” network. ***internationalSpare*** - MTP3 node is a member of an “International Spare” network.

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national - MTP3 node is a member of a “National” network.***nationalSpare*** - MTP3 node is a member of a “National Spare” network.

Mib: Ss7

Values:
international
internationalSpare
national
nationalSpare

Default: international

GROUP Ss7 Mtp3 Ls OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Ss7

ATTRIBUTE Ss7 Mtp3 Ls adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ss7

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

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ATTRIBUTE Ss7 Mtp3 Ls operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Mtp3 Ls usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Ss7 Mtp3 Ls availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-

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valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

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Mib	Ss7
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

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Mib	Ss7
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Ss7
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Ss7

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Ss7 Mtp3 Ls standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

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Mib	Ss7
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Ss7 Mtp3 Ls unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ss7
Values	false true
Default	false

GROUP Ss7 Mtp3 Ls WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls customCounter2 (customCntr2)

Access	Read: All Write: Illegal

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Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 Mtp3 Ls Link (Lk)

Instance	Decimal (0..15)
Groups	GROUP Ss7 Mtp3 Ls Lk Provisoned (Prov) GROUP Ss7 Mtp3 Ls Lk OsiState (State) GROUP Ss7 Mtp3 Ls Lk Operational (Oper) GROUP Ss7 Mtp3 Ls Lk WlcCustomCounters (WlcCustomCntr)

COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3 Linkset Link

Scope	Application
Description	Ss7 Mtp3/n Linkset/n Link/n This component represents a SS7 signalling link that conveys signalling information between two signalling points.
Mib	Ss7
Common Verbs	Help List Display Add DELete Unlock

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VERB LOCK Ss7 Mtp3 Ls Lk

Impact	Service
Description	*Lock [-force] Mtp3/n Linkset/n Link/n* This verb causes the specified *Ss7Link* component to immediately enter the OSI ***locked*** administrative state. Traffic flow ceases on the newly locked *Link* and is diverted to the remaining unlocked *Links* of the *LinkSet.* The *Lock* command fails if executed on the last ***unlocked*** *Link* of a *LinkSet*. The last ***unlocked*** *Link* of a *LinkSet* must be locked using the *force* option. **Options:** *-force* If this option is specified, the *Link* is locked even if it is the only unlocked *Link* in the *LinkSet*.

GROUP Ss7 Mtp3 Ls Lk **Provisoned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7Link* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Lk **linkToSaalNni (saalNni)**

Access	Read and write
Criticality	Component
Description	This attribute specifies a link to an *Ss7 SaalNni* component for each *Ss7Link* component in a LinkSet (for example, *SaalNni/n)*.
Mib	Ss7
Values	Link (Service, linkToLinkInLinkset)
Default	No default

GROUP Ss7 Mtp3 Ls Lk **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Lk **adminState (osiAdmin)**

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Mtp3 Ls Lk **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Mtp3 Ls Lk **usageState (osiUsage)**

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Ss7 Mtp3 Ls Lk availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and

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make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — Ss7

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Ss7 Mtp3 Ls Lk proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

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The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Ss7

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Ss7 Mtp3 Ls Lk controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	Ss7
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Ss7
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Ss7
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Ss7 Mtp3 Ls Lk **unknownStatus (osiUnknw)**

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ss7
Values	false true
Default	false

GROUP Ss7 Mtp3 Ls Lk **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *Ss7Link* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Lk **pdusRx**

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Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) received from layer 2. This includes the PDUs with and without user payload. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusRx (plPdusRx)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) with payload received from layer 2. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusTx

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units sent to layer 2. This includes the PDUs with and without user payload. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusTx (plPdusTx)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) with payload sent to layer 2. The counter wraps to 0 when it exceeds the maximum value.

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Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk invalidPdusRx (invPdusRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid Protocol Data Units received from Layer 2. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

GROUP Ss7 Mtp3 Ls Lk WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Lk customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Ss7 Mtp3 Ls Lk customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3 Linkset Link
Description	The statistics record generated by the SignallingSystem7 MessageTransferPartLayer3 Linkset Link component.

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusRx

Description	This attribute indicates the number of Protocol Data Units (PDUs) received from layer 2 over the collection interval. This includes the PDUs with and without user payload.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusRx

Description	This attribute indicates the number of Protocol Data Units (PDUs) with payload received from layer 2 over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusTx

Description	This attribute indicates the number of Protocol Data Units (PDUs) sent to layer 2 over the collection interval. This includes PDUs with and without user payload.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusTx

Description	This attribute indicates the number of Protocol Data Units (PDUs) with payload sent to layer 2 over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk invalidPdusRx

Description	This attribute indicates the number of number of invalid Protocol Data Units received over the collection interval.
Values	Decimal (0..4294967295)

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ATTRIBUTE Ss7 Mtp3 Ls Lk sltFailures

Description	This attribute indicates the number of signalling link test message failure conditions over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk changeovers

Description	This attribute indicates the number of link changeover conditions over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Ss7 Mtp3 Ls RouteInfo (Ri)

Groups	GROUP Ss7 Mtp3 Ls Ri Provisioned (Prov)
Scope	Application
Description	Ss7 Mtp3/n Linkset/n Routeinfo This component identifies a list of routes that are using this linkset to reach a destination signalling point. One linkset can be used by more than one route.
Mib	Ss7
Common Verbs	Help List Display Add DELete

GROUP Ss7 Mtp3 Ls Ri Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7 RouteInfo* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Ri linkToRoute (lToR)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a list of links to routes that use this linkset to reach one of several destination signalling points.
Mib	Ss7
List of	Link (Service, linkToLinkset)
List Size	64

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Default	No default

COMPONENT Ss7 Mtp3 ServiceIndicator (ServInd)

Instance	Decimal (3; 12)
Groups	GROUP Ss7 Mtp3 ServInd Provisioned (Prov) GROUP Ss7 Mtp3 ServInd WlcCustomCounters (WlcCustomCntr)
Scope	Application
Description	*Ss7 Mtp3/n ServiceIndicator/<service indicator>* This component represents an MTP layer 3 service indicator. A service indicator is a logical identifier that represents a particular user of MTP layer 3 services. The SS7 specifications define which users are required to use a given service indicator. Only one application can use a particular MTP layer 3 service indicator.
Mib	Ss7
Common Verbs	Help List Display Add DELete

GROUP Ss7 Mtp3 ServInd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *SS7ServiceIndicator* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 ServInd linkToMtp3Connection (lToMtp3Conn)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to the application using the service represented by this service indicator. This attribute must specify either *Ss7 Sccp Mtp3Connection* or *Ss7 Alcap Mtp3Connection*. *Ss7 SccpMtp3Connection* must be used for *Ss7 Mtp3/n ServiceIndicator/3* and *Ss7 Alcap Mtp3Connection* must be used for *Ss7 Mtp3/n ServiceIndicator/12*.

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	Changing the value of this attribute causes all the linksets associated with this MTP3 layer to be restarted.
Mib	Ss7
Values	Link (Service, linkToServiceIndicator)
Default	No default

GROUP Ss7 Mtp3 ServInd WIcCustomCounters (WIcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 ServInd customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 ServInd customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 ServInd customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7

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Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 Mtp3 Routeset (Rs)

Instance	Decimal (0..63)
Groups	GROUP Ss7 Mtp3 Rs Provisoned (Prov) GROUP Ss7 Mtp3 Rs OsiState (State)
Scope	Application
Description	Ss7 Mtp3/n Routeset/n This component represents an MTP3 routeset. A routeset is a grouping of routes that are used to transfer signalling between this node and a specific destination signalling point.
Mib	Ss7
Subcomponents	COMPONENT Ss7 Mtp3 Rs Route (Ro)
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK Ss7 Mtp3 Rs

Impact	Service
Description	*Lock [-force] Mtp3/n Routeset/n* This verb causes the specified *Ss7Routeset* component to immediately enter the OSI ***locked*** administrative state. **Options:** *-force* If this option is specified, the *Route*set is locked. Otherwise, the lock command failed for the *Routeset*.

GROUP Ss7 Mtp3 Rs Provisoned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7Routeset* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Rs destPointCode (dpc)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the point code of the destination node that is reached through this routeset. The point code must be provisioned in one of the following formats: basic***:*** The point code is provisioned as a decimal number in the range ***1***..***16383***. A value of ***0*** is not valid. segmented: The point code is provisioned as three integers, separated by dots. The first integer must be in the range ***0***..***7***, the second integer must be in the range ***0..255***, and the third integer must be in the range ***0***..***7***. A value of ***0.0.0*** is not valid. This attribute must not specify a point code identical to that specified by *origPointCode*. Changing the value of this attribute causes this routeset and associated routes to be restarted.
Mib	Ss7
Values	Integer Sequence
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs networkIndicator (netInd)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies whether the network is a national network, or an international network. Changing the value of this attribute causes the routeset to be restarted. Each meaning of each valid value for *networkIndicator* is described in SS7 Mtp3 specification Q.704. ***international*** - MTP3 node is a member of an “International” network. ***internationalSpare*** - MTP3 node is a member of an “International Spare” network. ***national*** - MTP3 node is a member of a “National” network.***nationalSpare*** - MTP3 node is a member of a “National Spare” network.
Mib	Ss7
Values	international internationalSpare national nationalSpare

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Default	international

GROUP Ss7 Mtp3 Rs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Rs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Mtp3 Rs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ss7

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Ss7 Mtp3 Rs usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ss7

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Ss7 Mtp3 Rs availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be

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present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ss7
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

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ATTRIBUTE Ss7 Mtp3 Rs proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Ss7
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Ss7
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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Mib	Ss7
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Ss7
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Ss7 Mtp3 Rs unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

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The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Ss7

Values: false, true

Default: false

COMPONENT Ss7 Mtp3 Rs Route (Ro)

Instance: Decimal (0..1)

Groups: GROUP Ss7 Mtp3 Rs Ro Provisoned (Prov), GROUP Ss7 Mtp3 Rs Ro OsiState (State)

Scope: Application

Description: Ss7 Mtp3/n Routeset/n Route/n

This component represents an MTP3 route that conveys signalling information between two signalling points using a specific adjacent signalling point.

Mib: Ss7

Common Verbs: Help, List, Display, Add, DELete, Unlock

VERB LOCK Ss7 Mtp3 Rs Ro

Impact: Service

Description: *Lock [-force] Mtp3/n Routeset/n Route/n*

This verb causes the specified *Ss7Route* component to immediately enter the OSI ***locked*** administrative state. Traffic flow ceases on the newly locked Route and is diverted to the unlocked Route of the RouteSet. The Lock command fails if executed on the last unlocked Route of a RouteSet. The last unlocked Route of a ROuteSet must be locked using the force option.

Options:
-force
If this option is specified, the *Route* is locked even if it is the only unlocked Route in the RouteSet.

GROUP Ss7 Mtp3 Rs Ro Provisoned (Prov)

Properties: Provisioned

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Description	This group contains the provisionable attributes of the *Ss7Route* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Rs Ro linkToLinkset (lToLS)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the link to the linkset that this route uses to reach the next transfer point. This attribute must specify a *Ss7 Mtp3/n Linkset/n Routeinfo* component. Changing the value of this attribute causes the route to be restarted.
Mib	Ss7
Values	Link (Service, linkToRoute)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs Ro priority (pri)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the route priority in relation to the other routes defined under the routeset. The route with the lower priority value (for example “1”) is used to carry the traffic. If two routes are defined with equal priority then loadsharing is performed across the two routes.
Mib	Ss7
Values	Decimal (1..2)
Default	1

GROUP Ss7 Mtp3 Rs Ro OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Rs Ro adminState (osiAdmin)

Access	Read only

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Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Mtp3 Rs Ro **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Mtp3 Rs Ro **usageState (osiUsage)**

Access	Read only

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Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Ss7 Mtp3 Rs Ro **availabilityStatus (osiAvail)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

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The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ss7
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE **Ss7 Mtp3 Rs Ro** **proceduralStatus (osiProc)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal

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functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Ss7

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Ss7 Mtp3 Rs Ro **controlStatus (osiCntrl)**

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

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Mib	Ss7
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs Ro **alarmStatus (osiAlarm)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Ss7
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs Ro **standbyStatus (osiStby)**

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

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The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Ss7

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Ss7 Mtp3 Rs Ro **unknownStatus (osiUnknw)**

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Ss7

Values:
false
true

Default: false

COMPONENT Ss7 **SignallingConnControlPart (Sccp)**

Instance: Decimal (1..16)

Groups:
GROUP Ss7 Sccp Provisioned (Prov)
GROUP Ss7 Sccp OsiState (State)

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GROUP Ss7 Sccp Operational (Oper)
GROUP Ss7 Sccp WlcCustomCounters (WlcCustomCntr)

COLLECTED STATS SignallingSystem7 SignallingConnControlPart

Scope	Application
Description	*Ss7 SignallingConnControlPart/n* This component represents the SCCP layer of the SS7 stack.
Mib	Ss7
Subcomponents	COMPONENT Ss7 Sccp Mtp3Connection (Mtp3Conn)
Opt. Subcomp.	COMPONENT Ss7 Sccp LocalSubsystem (Loc) COMPONENT Ss7 Sccp RemoteSubsystem (Rem)
Common Verbs	Help List Display Add DELete

GROUP Ss7 Sccp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7SignallingConnControlPart* component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp maxConnections (maxC)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of signalling connections supported by an SCCP instance across all the local subsystems. The current number of open signalling connections is indicated by the attribute *activeConnections.* The number of times a signalling connection establishment was refused because the number of open connections has reached the maximum value is indicated by the attribute *rejectedConnections.* Changes to this attribute affect only new connections. No existing connections will be affected by any changes made to this attribute.
Mib	Ss7
Values	Decimal (1000..200000)
Default	16000

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ATTRIBUTE Ss7 Sccp timerConnEst (tConnEst)

Access	Read: All Write: All
Description	This attribute specifies the value of the TConnEst timer defined in the ITU-T spec Q.714. This is the period of time to wait for a CONNECTION CONFIRM message from the remote user of SCCP. This timer is started when a CONNECT REQUEST message is sent to the remote SCCP layer. This timer is stopped when either a CONNECT CONFIRM, RELEASED, or CONNECT REFUSED message is received, or when a routing failure happens. Upon timer expiration, the resources associated with the connection are released and a disconnect message is sent to the local user(s). The number of timeouts of this timer is indicated by the attribute *connEstTmouts*.
Mib	Ss7
Values	Decimal (60..120)
Units	seconds
Default	60

ATTRIBUTE Ss7 Sccp timerInactivitySend (tIas)

Access	Read: All Write: All
Description	This attribute specifies the value of the Tias timer defined in Q.714. This is the period of time to wait before sending an INACTIVITY TEST message for a connection when there are no messages to send. The timer is started when a CONNECT CONFIRM or CONNECT RESPONSE message is received. The timer is restarted if a DATA FORM 1 message is transmitted. This timer is stopped when a DISCONNECT, RELEASE COMPLETE or ERROR message is received, or when a routing failure occurs. If the timer expires on an open connection, an INACTIVITY TEST message is sent. It is recommended that the timer be set to a value that is half as long as the *tIarTimer*.
Mib	Ss7

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Values	Decimal (300..600)
Units	seconds
Default	300

ATTRIBUTE Ss7 Sccp timerInactivityReceive (tIar)

Access	Read: All Write: All
Description	This attribute specifies the value of the inactivity receive timer defined in Q.714. This is the period of time to wait on receiving a message for a connection, before releasing the connection. This timer is started when a CONNECT CONFIRM or CONNECT RESPONSE message is received. This timer is restarted if a DATA FORM 1 or INACTIVITY TEST message is received. This timer is stopped when a DISCONNECT, RELEASED, or ERROR message is received, or when a routing failure occurs. If this timer expires on an open connection, a DISCONNECT message is sent and the resources are released. It is recommended that the timer be set to a value that is twice as long as *tIasTimer*. The number of timeouts of this timer is indicated by the attribute *inactivityReceiveTimeouts*.
Mib	Ss7
Values	Decimal (660..1260)
Units	seconds
Default	660

ATTRIBUTE Ss7 Sccp timerRel (tRel)

Access	Read: All Write: All
Description	This attribute specifies the value of the release timer defined in Q.714. This is the period of time to wait for a RELEASE COMPLETE message in response to the initial release attempt. This timer is started when a RELEASED message is sent. This timer is stopped when a RELEASE COMPLETE or ERROR message is received, or on a routing failure.

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	Upon timer expiration, a RELEASE message is sent and the *tRepeatRelTimer* is started. The number of timeouts of this timer is indicated by the attribute *tRelTimeouts*.
Mib	Ss7
Values	Decimal (10..20)
Units	seconds
Default	10

ATTRIBUTE Ss7 Sccp timerRepeatRel (tRepeatRel)

Access	Read: All Write: All
Description	This attribute specifies the value of the repeat release timer. This is the period of time to wait for a RELEASE COMPLETE message after *tRelTimer* has expired. This timer determines the interval between successive release retries. This timer is started when *tRelTimer* expires. This timer is stopped when a RELEASE COMPLETE or an ERROR message is received, or when a routing failure occurs. Upon timer expiration, the timer is restarted for a maximum of ten times. Upon the tenth timer expiration, the resources are released. The number of timeouts of this timer is indicated by the attribute *tRepeatRelTimeouts.*
Mib	Ss7
Values	Decimal (10..20)
Units	seconds
Default	10

ATTRIBUTE Ss7 Sccp classOfService (classOfServ)

Access	Read: All Write: All
Description	This attribute specifies the type of service provided by the SCCP layer. The different service classes are: ***0*** - This class represents basic connectionless service. ***2***- This class represents basic connection-oriented service. Any combination of these classes can be provisioned by the user, but at least one class must be specified.

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Mib	Ss7
Set of	0 2
Default	(0, 2)

GROUP Ss7 Sccp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Sccp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Sccp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Sccp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

GROUP Ss7 Sccp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ss7SignallingConnControlPart* component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp timerConnEstTimeouts (tConnEstTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the *tConnEstTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Ss7 Sccp timerInactivityReceiveTimeouts (tIarTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *timerInactivityReceive.* The counter wraps to zero when it exceeds the maximum value
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp timerRelTimeouts (tRelTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *tRelTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp timerRepeatRelTimeouts (repRelTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *tRepeatRelTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp activeConnections (actConn)

Access	Read: All Write: Illegal
Description	This attribute indicates the current open signalling connections for the *Ss7SignallingConnControlPart c*omponent. The maximum number of open signalling connections is set by the attribute *maxConnections.*

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Mib	Ss7
Values	Decimal (0..1000000)
Default	No default

ATTRIBUTE Ss7 Sccp rejectedConnections (rejConn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a signalling connection establishment request by the application was refused. The reasons include the subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on. This includes the number of rejected connections indicated by the attribute *maxConnExhausted*. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp maxConnectionsExhausted (maxConnEx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit specified by the attribute *maxConnection.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp lostConnections (lostConn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the open signalling connections lost due to unavailability of the SCCP Subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Ss7 Sccp unsupportedMessages (unsuppMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of unsupported (class1, class3) messages received. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp gttRequests (gttRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received that require Global Title Translation. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp segmentationRequests (segRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received that require segmentation. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp reassemblyRequests (reassemblyRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received that require reassembly. The counter wraps to zero when it exceeds the maximum value.

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Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp localRoutingFailures (localRoutFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the routing failures to the local subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp remoteRoutingFailures (remRoutFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the routing failures to the remote subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp messagesTx (msgsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the messages sent to layer 3. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp payloadMessagesTx (plMsgsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp messagesRx (msgsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the messages received from layer 3. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp payloadMessagesRx (plMsgsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages received from layer 3. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp invalidMessages (invMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid (syntax error or undecodable) messages received. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp attemptedConnections (attCon)

Access	Read: All Write: Illegal
Description	This attribute counts the number of signalling connections that this *Ss7SignallingConnControlPart c*omponent has attempted to establish. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7

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Values	Decimal (0..4294967295)
Default	No default

GROUP Ss7 Sccp WIcCustomCounters (WIcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Sccp customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

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COLLECTED STATS SignallingSystem7 SignallingConnControlPart

Description — The statistics record generated by the SignallingSystem7 SignallingConnControlPart component.

ATTRIBUTE Ss7 Sccp activeConnections

Description — This attribute indicates the number of the current open signalling connections for the *Ss7SignallingConnControlPart* component at the end of the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp rejectedConnections

Description — This attribute indicates the number of rejected signalling connections for the *Ss7SignallingConnControlPart* component over the collection interval. The reasons include the subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on, at the end of the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp maxConnectionsExhausted

Description — This attribute indicates the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit specified by the attribute *maxConnections,* over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp lostConnections

Description — This attribute indicates the number of the open signalling connections lost due to unavailability of the SCCP Subsystem over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp invalidMessages

Description — This attribute indicates the number of invalid (syntax error or undecodable) messages received over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp messagesTx

Description — This attribute indicates the number of the messages sent to layer 3 over the collection interval. This includes maintenance messages.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp payloadMessagesTx

Description — This attribute indicates the number of payload messages transmitted over the collection interval.

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Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp messagesRx

Description This attribute indicates the number of the messages received from layer 3 over the collection interval. This includes maintenance messages.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp payloadMessagesRx

Description This attribute indicates the number of payload messages received over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp localRoutingFailures

Description This attribute indicates the number of the routing failures to the local subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp remoteRoutingFailures

Description This attribute indicates the number of the routing failures to the remote subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp attemptedConnections (attCon)

Description This attribute indicates the number of signalling connections that this *Ss7SignallingConnControlPart c*omponent has attempted to establish during the collection interval.

Values Decimal (0..4294967295)

COMPONENT Ss7 Sccp LocalSubsystem (Loc)

Instance Decimal (0..255)

Groups GROUP Ss7 Sccp Loc Provisioned (Prov)
GROUP Ss7 Sccp Loc OsiState (State)
GROUP Ss7 Sccp Loc WlcCustomCounters (WlcCustomCntr)

Scope Application

Description *Ss7 Sccp/n LocalSubsystem*

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This component represents a local subsystem that is providing services using this *Ss7SignallingConnControlPart* component.

Mib: Ss7

Common Verbs: Help, List, Display, Add, DELete

GROUP Ss7 Sccp Loc Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes of the *Ss7LocalSubsystem* component.

Mib: Ss7

ATTRIBUTE Ss7 Sccp Loc subsystemNumber (ssn)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the subsystem number of the local subsystem represented by the *Ss7LocalSubsystem* component.

Mib: Ss7

Values: ranap
rnsap

Default: ranap

GROUP Ss7 Sccp Loc OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Ss7

ATTRIBUTE Ss7 Sccp Loc adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Ss7

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Ss7 Sccp Loc operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Ss7

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Ss7 Sccp Loc usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib Ss7

Values idle
active (activ)
busy

Default idle

GROUP Ss7 Sccp Loc WlcCustomCounters (WlcCustomCntr)

Properties Operational

Description This group contains the spare counters that can be dynamically patched.

Mib Ss7

ATTRIBUTE Ss7 Sccp Loc customCounter1 (customCntr1)

Access Read: All
Write: Illegal

Description This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib Ss7

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Ss7 Sccp Loc customCounter2 (customCntr2)

Access Read: All
Write: Illegal

Description This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib Ss7

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Ss7 Sccp Loc customCounter3 (customCntr3)

Access Read: All
Write: Illegal

Description This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

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Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 Sccp RemoteSubsystem (Rem)

Instance	Decimal (0..255)
Groups	GROUP Ss7 Sccp Rem Provisioned (Prov) GROUP Ss7 Sccp Rem WlcCustomCounters (WlcCustomCntr)
Scope	Application
Description	*Ss7 Sccp/n RemoteSubsystem* This optional component represents a remote subsystem that can be accessed by this *Ss7SignallingConnControlPart* component.
Mib	Ss7
Common Verbs	Help List Display Add DELete

GROUP Ss7 Sccp Rem Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7RemoteSubsystem* component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Rem subsystemNumber (ssn)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the subsystem number of the remote subsystem represented by the *Ss7RemoteSubsystem* component.
Mib	Ss7
Values	ranap rnsap
Default	ranap

ATTRIBUTE Ss7 Sccp Rem pointCodeList (pcl)

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Access	Read: All Write: All
Description	This attribute specifies a list of point codes associated with this *Ss7RemoteSubsystem* component.
Mib	Ss7
List of	Integer Sequence
List Size	64
Default	No default

GROUP Ss7 Sccp Rem WIcCustomCounters (WIcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Rem customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Rem customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Rem customCounter3 (customCntr3)

Access	Read: All Write: Illegal

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Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 Sccp Mtp3Connection (Mtp3Conn)

Groups	GROUP Ss7 Sccp Mtp3Conn Provisioned (Prov) GROUP Ss7 Sccp Mtp3Conn WlcCustomCounters (WlcCustomCntr)
Scope	Application
Description	Ss7 Alcap/n Mtp3Connection Ss7 Sccp/n Mtp3Connection This component represents a connection to an MTP3 layer.
Mib	Ss7
Common Verbs	Help List Display

GROUP Ss7 Sccp Mtp3Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mtp3Connection*component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Mtp3Conn linkToServiceIndicator (lToSI)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to an *Ss7 Mtp3/n ServiceIndicator/n* component for MTP 3 services. Changing this attribute will cause the application using the MTP3 layer's services to be restarted.
Mib	Ss7
Values	Link (Service, linkToMtp3Connection)
Default	No default

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GROUP Ss7 Sccp Mtp3Conn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Mtp3Conn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Mtp3Conn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Mtp3Conn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 AccessLinkControlApplicationPart (Alcap)

Instance	Decimal (1..16)
Scope	Application

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Description	*Ss7 AccessLinkControlApplicationPart/n* This component represents the ALCAP layer of the SS7 stack.
Mib	Ss7
Subcomponents	COMPONENT Ss7 Alcap Mtp3Connection (Mtp3Conn)
Common Verbs	Help List Display Add DELete

COMPONENT Ss7 Alcap Mtp3Connection (Mtp3Conn)

Groups	GROUP Ss7 Alcap Mtp3Conn Provisioned (Prov) GROUP Ss7 Alcap Mtp3Conn WlcCustomCounters (WlcCustomCntr)
Scope	Application
Description	Ss7 Alcap/n Mtp3Connection Ss7 Sccp/n Mtp3Connection This component represents a connection to an MTP3 layer.
Mib	Ss7
Common Verbs	Help List Display

GROUP Ss7 Alcap Mtp3Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mtp3Connection*component.
Mib	Ss7

ATTRIBUTE Ss7 Alcap Mtp3Conn linkToServiceIndicator (lToSI)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to an *Ss7 Mtp3/n ServiceIndicator/n* component for MTP 3 services. Changing this attribute will cause the application using the MTP3 layer's services to be restarted.
Mib	Ss7

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Values	Link (Service, linkToMtp3Connection)
Default	No default

GROUP Ss7 Alcap Mtp3Conn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Alcap Mtp3Conn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Alcap Mtp3Conn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Alcap Mtp3Conn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

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COMPONENT Ss7 SaalNni (SaalNni)

Instance	Decimal (1..1024)
Groups	GROUP Ss7 SaalNni Provisioned (Prov) GROUP Ss7 SaalNni SscopProv (Sscop) GROUP Ss7 SaalNni SscfProv (Sscf) GROUP Ss7 SaalNni OsiState (State) GROUP Ss7 SaalNni Operational (Oper) GROUP Ss7 SaalNni WlcCustomCounters (WlcCustomCntr)
COLLECTED STATS SignallingSystem7 SaalNni	
Scope	Application
Description	*Ss7 SaalNni/n* This component represents the SAAL-NNI layer that provides an adaptation layer to run signalling traffic over ATM using AAL5.
Mib	Ss7
Subcomponents	COMPONENT Ss7 SaalNni NailedupAdaptationPoint (Nap)
Common Verbs	Help List Display Add DELete

GROUP Ss7 SaalNni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *SS7SaalNni* component.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni linkToLinkInLinkset (link)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a linkage between an *Ss7 Mtp3/n LinkSet/n Link/n* component and an *Ss7 SaalNni/n* component.
Mib	Ss7
Values	Link (Service, linkToSaalNni)
Default	No default

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GROUP Ss7 SaalNni SscopProv (Sscop)

Properties	Provisioned
Description	This group contains the provisionable attributes needed by the SSCOP sub-layer of SAAL-NNI.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni maxPdusBetweenPolls (maxPdus)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of Signalling Data PDUs that can be sent without sending a POLL PDU, as defined in ITU-T recommendation Q.2110.
Mib	Ss7
Values	Decimal (1..1000)
Default	500

ATTRIBUTE Ss7 SaalNni ccTimer (cc)

Access	Read: All Write: All
Description	This attribute specifies the time between transmissions of ‘BGN’, ‘END’, ‘RS’ and ‘ER’ PDUs, as defined in ITU-T recommendation Q.2110. The timer is started when any one of these PDUs is transmitted. The timer is stopped when a proper acknowledgement is received (e.g. BGNAK, ENDAK, RSACK, or ERACK). Upon timer expiry the PDU will be retransmitted. The PDU is transmitted a maximum of *maxCc* times. If the timer expires *maxCc* times, the link will be released, and the and the number of times this happens will be indicated by the attribute *maxCcReached.* Layer 3 will attempt to bring the link back up.
Mib	Ss7
Values	Decimal (100..1000)
Units	msec
Default	200

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ATTRIBUTE Ss7 SaalNni maxCc

Access	Read: All Write: All
Description	This attribute specifies the maximum number of allowed unacknowledged transmissions of 'BGN', 'END', 'ER' or 'RS' Protocol Data Units (PDUs) as defined in ITU-T recommendation Q.2110. If the number of unacknowledged transmissions exceeds this value, the link will be released, and the number of times this happens will be indicated by the attribute *maxCcReached*.
Mib	Ss7
Values	Decimal (1..1000)
Default	4

ATTRIBUTE Ss7 SaalNni keepAliveTimer (tKeepAl)

Access	Read: All Write: All
Description	This attribute specifies the time between sending of POLL PDUs when there is no activity on the link, as defined in ITU-T recommendation Q.2110. The timer is started when either the *pollTimer* or the *keepAliveTimer* expires and there are no PDUs queued for sending. The timer is stopped when a data request (SD PDU) is ready to be sent. Upon expiry this timer sends a POLL PDU. The value of *keepAliveTimer* should be set to a value greater that *pollTimer* and greater than the round-trip delay of a PDU.
Mib	Ss7
Values	Decimal (100..1000)
Units	msec
Default	100

ATTRIBUTE Ss7 SaalNni noResponseTimer (noResp)

Access	Read: All Write: All
Description	This attribute specifies the time interval during which at least one STAT PDU should be received. The timer is started when a POLL PDU is sent.

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The timer is stopped when a STAT PDU is received.

Upon timer expiry, the link is released, that is, brought out of service. Layer 3 will then attempt to bring it back to service.

The value of the *noResponseTimer* must not be less than the sum of the *keepAliveTimer* and one round-trip delay of a Protocol Data Unit (PDU).

The number of expiries of this timer is indicated by the attribute *noResponseTimeouts.*

Mib	Ss7
Values	Decimal (500..2000)
Units	msec
Default	1500

ATTRIBUTE Ss7 SaalNni pollTimer

Access	Read: All Write: All
Description	This attribute specifies the time between sending of POLL PDUs when the link has traffic, as defined in ITU-T recommendation Q.2110. The timer is started when the link enters the Data Transfer Ready State. The timer is stopped when the link is released. Upon expiry, a POLL PDU is sent and *pollTimer* is restarted if the link has traffic.
Mib	Ss7
Values	Decimal (100..1000)
Units	msec
Default	100

ATTRIBUTE Ss7 SaalNni idleTimer

Access	Read: All Write: All
Description	This attribute specifies the idle time after receipt of a STAT PDU, as defined in ITU-T recommendation Q.2110. The timer is started when a STAT PDU is received. The timer is stopped when data is sent or received on the link. Upon expiry, a POLL PDU is sent and the *noResponseTimer* is started.

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The value of the *idleTimer* must be greater that the sum of the *pollTimer* and the maximum round trip delay of a PDU.

Mib	Ss7
Values	Decimal (100..1000)
Units	msec
Default	100

GROUP Ss7 SaalNni SscfProv (Sscf)

Properties	Provisioned
Description	This group contains provisionable attributes needed by the SSCF sub layer of SAAL-NNI.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni provingMode

Access	Read: All Write: All
Description	This attribute allows the operator to place the link into one of the link proving modes defined in ITU-T recommendation Q.2140. ***normal*** - This mode corresponds to the MAAL-FORCE_PROVING-request. It forces the SAAL-NNI layer to utilize proving when bringing up the link. ***neutral*** - This mode corresponds to the MAAL-CLEAR_FORCE_MODES-request.It specifies that the layer using SAAL-NNI will select the proving mode. ***emergency*** - This mode corresponds to the MAAL-FORCE_EMERGENCY-request. It causes proving to be skipped. When this attribute is set to ***neutral,*** the layer that uses SAAL_NNI (MTP3) selects the proving mode, but when the attribute is set to ***normal*** or ***emergency***, instructions from the entity which uses SAAL-NNI are ignored.
Mib	Ss7
Values	normal neutral emergency
Default	neutral

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ATTRIBUTE Ss7 SaalNni linkReEstablishTimer (t1)

Access	Read: All Write: All
Description	This attributes specifies the time between the link release action and the next link re-establish action during alignment, as defined in ITU-T recommendation Q.2140. This timer is started when a release indication or confirmation is received while the link is in the Alignment or InService state. This timer is stopped in one of two cases: If the SAAL-NNI layer successfully receives an establish request or establish confirm from the peer SAAL-NNI layer. If the SAAL_NNI layer receives a stop indication or release request from the layer 3 user or layer management respectively. Upon timer expiration, link alignment and proving is re-started.
Mib	Ss7
Values	Decimal (0..30)
Units	seconds
Default	5

ATTRIBUTE Ss7 SaalNni alignmentAcceptTimer (t2)

Access	Read: All Write: All
Description	This attributes specifies the total time to attempt alignment and is defined in ITU-T recommendation Q.2140. This timer is started when a start request is received. If the link is put in service before the expiry of this timer, no action is performed. This timer is stopped in one of two cases. If the SAAL-NNI layer successfully passes from the link proving state to the InService state. If the SAAL-NNI layer receives a stop indication from the layer 3, or a release request from layer management. Upon timer expiration, link establishment is cancelled and link is taken out of service. Layer 3 will attempt to bring the link back in service. The value of this timer can be adjusted if link proving fails due to an inability to send the target number proving PDUs indicated by the attribute *targetProvingPdus.* The current number of proving PDUs sent successfully is indicated by the attribute *currentProvingPdus*.

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Mib	Ss7
Values	Decimal (5..150)
Units	seconds
Default	30

GROUP Ss7 SaalNni OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 SaalNni operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation.

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Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ss7

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Ss7 SaalNni usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ss7

Values: idle
active (activ)
busy

Default: idle

GROUP Ss7 SaalNni Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *SS7SaalNni* component.

Mib: Ss7

ATTRIBUTE Ss7 SaalNni state (provSt)

Access: Read: All
Write: Illegal

Description: This attribute indicates the proving state of the link. The different states are:
notStarted - Proving has not started.
incomplete - Proving is in progress, but not completed yet.
completeSuccess - Proving has been completed successfully.
completeFailed - This proving attempt failed.

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Mib	Ss7
Values	notStarted inComplete completeSuccess completeFailed
Default	No default

ATTRIBUTE Ss7 SaalNni targetProvingPdus (n1)

Access	Read: All Write: Illegal
Description	This attribute indicates the target number of proving PDUs to be sent across the link during the proving period. The current number of proving PDUs that have been sent is indicated by the attribute *currentProvingPdus.*
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni currentProvingPdus (c1)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of proving PDUs that have been sent across the link during this proving period. The target number of proving PDUs that must be sent is indicated by the attribute *targetProvingPdus*
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni inSrvDuration (inSrvDur)

Access	Read: All Write: Illegal
Description	This attribute indicates the time that the signalling link has remained in the in-service state since it was most recently brought in service.
Mib	Ss7
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

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ATTRIBUTE Ss7 SaalNni maxCcReached (maxCcR)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the signalling link has been released because the number of unacknowledeged transmissions of 'BGN', 'END', 'ER' or 'RS' Protocol Data Units (PDUs) has exceeded the value provisioned in the attribute *maxCc*. The counter wraps to zero when it exceeds its maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni noResponseTimeouts (noRespTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the No Response timer, specified by the attribute *noResponseTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni pdusTx (pduTx)

Access	Read: All Write: Illegal
Description	This attribute counts the protocol data units transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni pdusRx (pduRx)

Access	Read: All Write: Illegal
Description	This attribute counts the protocol data units received. The counter wraps to zero when it exceeds the maximum value.

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Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni pduOctetsTx (pduOctTx)

Access	Read: All Write: Illegal
Description	This attribute counts the payload PDU octets transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni pduOctetsRx (pduOctRx)

Access	Read: All Write: Illegal
Description	This attribute counts the payload PDU octets received over the collection interval.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni insvFailures (insvFail)

Access	Read: All Write: Illegal
Description	This attribute counts the in-service link outages. It does not include failures which occur during the alignment process. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

GROUP Ss7 SaalNni WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

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ATTRIBUTE Ss7 SaalNni customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SignallingSystem7 SaalNni

Description	The statistics record generated by the SignallingSystem7 SaalNni component.

ATTRIBUTE Ss7 SaalNni insvFailures

Description	This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.
Values	Decimal (0..4294967295)

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ATTRIBUTE Ss7 SaalNni pdusTx

Description	This attribute indicates the number of protocol data units transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pdusRx

Description	This attribute indicates the number of protocol data units received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pduOctetsTx

Description	This attribute indicates the number of payload PDU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pduOctetsRx

Description	This attribute indicates the number of payload PDU octets received over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Ss7 SaalNni NailedupAdaptationPoint (Nap)

Groups	GROUP Ss7 SaalNni Nap Provisioned (Prov) GROUP Ss7 SaalNni Nap WlcCustomCounters (WlcCustomCntr)
Scope	Application
Description	*Ss7 SaalNni/n NailedupAdaptationPoint* This component is used to provide access to a nailed-up ATM connection (an *Atmif/n Vcc/n Nep*).
Mib	Ss7
Common Verbs	Help List Display

GROUP Ss7 SaalNni Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7NailedupAdaptationPoint* component.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni Nap atmConnection (atmConn)

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Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to an *AtmIf Vcc Nep* component that provides access to an ATM network.
Mib	Ss7
Values	Link (Service, applicationName)
Default	No default

GROUP Ss7 SaalNni Nap WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni Nap customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni Nap customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni Nap customCounter3 (customCntr3)

Access	Read: All Write: Illegal

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Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Ss7

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Sw

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COMPONENT Software (Sw)

Groups	GROUP Sw Provisioned (Prov) GROUP Sw Operational (Oper)
Scope	Device
Description	*SW* The *SW* component is the top-level component of all software configuration components.
Mib	Software
Subcomponents	COMPONENT Sw Autopatch (Ap)
Opt. Subcomp.	COMPONENT Sw LogicalProcessorType (Lpt)
Dyn. Subcomp.	COMPONENT Sw Download (Dld) COMPONENT Sw ApplicationVersion (Av)
Common Verbs	Help List Display

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VERB Tidy Sw

Impact	Configuration
Description	*Tidy Sw* This verb is used to remove all unreferenced *AV* operational subcomponents along with all their associated software files from the disk. This means that an *AV* can be removed only if all of the following conditions are met: 1) The AV is not specified in the AVL in the Current view (that is, the one currently activated). 2) The AV is not specified in the AVL of the Edit view if it has been semantically checked. 3) The AV is not specified in any AVL which would become active if an existing semantically-checked provisioning file is loaded and activated. 4) The AV is not specified in any *AVL* in the journaling files. 5) The AV is not the parent AV of a patched AV that is ineligible for *Tidy*ing because it doesn't meet one or more of the above criteria. The *Tidy* command is mutually exclusive with *Check Prov*, *Download*, *Check Sw AutoPatch* and *Remove* commands. It will fail, not removing any *AVs*, if either a *Check Prov*, a *Download*, a *Remove, a Check Sw AutoPatch, or a Tidy* command is still in progress, or the file system is locked or otherwise unavailable.

GROUP Sw Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Provisionable attributes for the *SW* component.
Mib	Software

ATTRIBUTE Sw avList (avl)

Access	Read and write
Description	This attribute specifies, for each application, which version of its *Features* and the associated software will be loaded when any of its *Features* are selected in an *LPT*. A version of the "base" application must be specified. All names specified by the user must actually be *AV* names. All *AVs* specified must be compatible with each other. No more than one version of a single application can be specified
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw patchList (patl)

Access	Read and write
Description	This attribute specifies which patches are to be loaded and enabled. Only patches for *Av*'s that appear in the *AvList* may be specified.

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	Only patches appearing as instances of *Sw Av Patch* may be specified. Patch names are case insensitive. Except for case, patch names must be typed as they appear as instances of *Sw Av Patch*. All patches specified must be compatible with one another. Any prerequisite patches for specified patches, must themselves be specified. A patch must be specified only once in the list.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

GROUP Sw Operational (Oper)

Properties	Operational
Description	This group contain the operational attributes for the *SW* component.
Mib	Software

ATTRIBUTE Sw tidyStatus

Access	Read only
Description	This attribute indicates the tidy or remove status. If the value is ***inactive***, no tidy or remove is in progress. If the value is ***inProgress*** or ***querying***, the tidy or remove process has begun and therefore no further *Tidy Sw or Remove sw/<avName>* command is allowed until status returns to inactive.
Mib	Software
Values	inactive inProgress querying
Default	No default

ATTRIBUTE Sw avBeingTidied

Access	Read only
Description	This attribute indicates the name of the AV currently being tidied or removed. An empty string indicates there is no AV being tidied.
Mib	Software
Values	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw avListToTidy

Access	Read only

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Description	This attribute holds the list of names of AVs to be tidied or removed. As AVs are successfully cleaned, they are removed from this list and added to *avListTidied*.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw avListTidied

Access	Read only
Description	This attribute holds the list of names of AVs which have been successfully tidied or removed as a result of the last *Tidy Sw or Remove Sw av/<avName>* command. It is cleared each time a new *Tidy Sw or Remove Sw av/<avName>* command is issued.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw Download (Dld)

Groups	GROUP Sw Dld Operational (Oper)
Scope	Device
Description	*Sw Dld* The *Download* component manages the retrieval of software from the Software Distribution Site (SDS). The module initiates the connection to the SDS and retrieves the files it wants according to the *AVs* specified by the user in *avListToDownload*.
Mib	Software
Common Verbs	Help List Display

VERB Start Sw Dld

Impact	Configuration
Description	*Start -u(<userid>) -p(<password>) -h(<host>) Sw Dld* This command is used to start a download. Before starting the download, the *avListToDownload* should be set up, specifying what to download. The *Start* will fail if a *Remove*, a *Tidy, a Check Sw AutoPatch,* or a *Check Prov* are in progress.

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VERB Stop Sw Dld

Impact	Configuration
Description	*Stop Sw Dld* This command is used to stop a download. Note that it may not be possible to start another download immediately since it may take some time to tear down the IP connection (that is, the entity handling the connection may be suspended and not be able to even detect that a stoppage was requested).

GROUP Sw Dld **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes for the *Download* component.
Mib	Software

ATTRIBUTE Sw Dld **avBeingDownloaded**

Access	Read only
Description	This attribute indicates the name of the AV currently being downloaded. If the download is ***inProgress***, this attribute will indicate the same as the first AV in the list of AV's to be downloaded. If there is no AV being downloaded, this attribute will indicate an empty string.
Mib	Software
Values	String (0..30, ASCII)
Default	No default

ATTRIBUTE Sw Dld **status**

Access	Read only
Description	This attribute indicates the download status. If the value is ***inactive***, no download is in progress. This is the value required in order to issue a *Start* command. If the value is ***inProgress***, the download procedure has begun. This process starts from the time a Software Distribution Site (SDS) login is attempted and continues through the time during which files are actually being transferred. If the value is ***stopping***, a user has requested a stoppage but the connections have not yet been completely torn down.
Mib	Software
Values	inactive inProgress stopping
Default	No default

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ATTRIBUTE Sw Dld filesToTransfer

Access	Read only
Description	This attribute indicates the number of files which are still left to transfer for the *AV* currently being downloaded. It is cleared each time a new *AV* is processed from the *avListToDownload*. Note that for each *AV*, the value of this attribute will be 0 until the actual number of files to transfer has been computed.
Mib	Software
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Sw Dld processorTargets

Access	Read and write
Description	This attribute indicates the processor based object file to download on switch. After a CP restart or software migration, this attribute is initialized to the processor targets present on the CP disk for the current provisioned Application Versions (*AVs)*. This attribute can have the following values: ***i960*** - Object files for cards with an i960 processor are to be downloaded. ***ppc*** - Object files for cards with a PowerPC processor are to be downloaded.
Mib	Software
Set of	i960 ppc
Default	No default

ATTRIBUTE Sw Dld avListToDownload (dldList)

Access	Read and write
Description	This attribute holds the list of names of *AVs* to be downloaded. If a download is in progress, the first one in the list is the one currently being downloaded. As *AVs* are successfully downloaded, they are removed from this list and added to the *downloadedAvList*. The user cannot specify an *AV* which already exists on disk. It must first be removed before re-downloading it (see the *Tidy* and *Remove* commands).
Mib	Software
List of	String (1..30, ASCII)
Default	No default

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ATTRIBUTE Sw Dld downloadedAvList

Access	Read only
Description	This attribute holds the list of names of *AVs* which have been successfully downloaded as a result of the last *Start* command. It is cleared each time the *Start* command is issued.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw ApplicationVersion (Av)

Instance	String (1..30, ASCII)
Groups	GROUP Sw Av Operational (Oper)
Scope	Device
Description	*Sw Av/<name>* This component represents a particular version of an application that is available to use in the *AVL*. They can only be created by downloading and can only be deleted by using the *Tidy* or *Remove* commands. The *PatchVersion* subcomponent only exists for the patch *AV*. The component contains the patch version files which are used to determine the status and category of a given patch. It is used in conjunction with the *AutoPatch* component for the auto-patch feature. An *AV* has one or more *Feature* subcomponents, and it may have one or more Patch subcomponents which belong to it.
Mib	Software
Dyn. Subcomp.	COMPONENT Sw Av Feature (Feat) COMPONENT Sw Av Patch (Patch) COMPONENT Sw Av PatchVersion (PatchVersion)
Common Verbs	Help List Display

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VERB Remove Sw Av

Impact	Configuration
Description	*Remove Sw Av/<name>* This command is used to remove an AV component and the associated software files from the disk as long as it is unreferenced. This means that an *AV* can be removed only if all of the following conditions are met: 1) The AV is not specified in the *AVL* in the Current view (that is, the one currently activated). 2) The AV is not specified in the *AVL* in the Edit view if it has been semantically checked. 3) The AV is not specified in any *AVL* which would become active if an existing semantically-checked provisioning file is loaded and activated. 4) The AV is not specified in any *AVL* in the journaling files. 5) The AV is not a parent AV to a patched AV. To remove an AV that has patched AVs based upon it, first remove the patched AVs. To clean up unused provisioning files, see the “Tidy Prov” command. To clean up journaling files, see the “Commit Prov” command. The *Remove* command is mutual exclusive with *Check Prov*, *Download*, *Check Sw AutoPatch*, and *Tidy* command. It will fail, not removing this *AV*, if either a *Check Prov*, a *Download*, a *Tidy, a Check Sw AutoPatch,* or a *Remove* command is still in progress, or if the file system is locked or otherwise unavailable.

GROUP Sw Av Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an *AV* component.
Mib	Software

ATTRIBUTE Sw Av processorTargets

Access	Read only
Description	This is a list of the processor based object file types which exist on disk for a given AV. Semantic check will validate that the object files needed for a provisioned card type are present as part of an application.
Mib	Software
Set of	i960 ppc
Default	No default

ATTRIBUTE Sw Av description (descr)

Access	Read only
Description	This attribute describes the functionality of the *AV*. If the *AV* is a patched *AV*, this attribute describes the new behavior delivered by the patched *AV*.
Mib	Software

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Values	String (0..512, ASCII)
Default	No default

ATTRIBUTE Sw Av compatibleAvList

Access	Read only
Description	This is a list of the *AV* names which specify the minimum version of all other applications that can be used in conjunction with this *AV* in an *AVL*. Semantic checks will validate that *AVs* within the *AVL* are indeed compatible.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw Av Feature (Feat)

Instance	String (1..30, ASCII)
Scope	Device
Description	*Sw Av/<name> Feat/<name>* There is one of these components for each provisionable feature of the parent AV component. Each feature's name can be used in an Lpt's feature list attribute. A feature component does not have any attributes of its own.
Mib	Software
Common Verbs	Help List Display

COMPONENT Sw Av Patch (Patch)

Instance	String (1..30, ASCII)
Groups	GROUP Sw Av Patch Operational (Oper)
Scope	Device
Description	*Sw Av/<name> Patch/<name>* There is one of these components for each patch of the parent AV component that has been downloaded to the switch.
Mib	Software
Common Verbs	Help List Display

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GROUP Sw Av Patch Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Patch* component.
Mib	Software

ATTRIBUTE Sw Av Patch description (descr)

Access	Read only
Description	This attribute indicates the new behavior that the patch provides. The availability of this description is dependent on the disk being available.
Mib	Software
Values	String (0..512, ASCII)
Default	No default

ATTRIBUTE Sw Av Patch patchType (type)

Access	Read only
Description	This attribute indicates the patch type. This attribute can have a value of ***tap*** (transparent application), ***cpReset***, or ***fpReset.*** TAP patches do not require a card reset in order for the patch to become active, whereas Reset patches involve the full replacement of an executable file and therefore necessitate the reloading of the cards on which that file is active. Because the *patchType* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
Set of	tap cpReset fpReset none
Default	No default

ATTRIBUTE Sw Av Patch patchStatus (status)

Access	Read only
Description	This attribute indicates the current status of a patch. The patch status can be one of three values: ***released*** (denoting a patch that is GA), ***verification*** (denoting a patch that is still in Beta testing) and ***none*** (default, when the system is not sure of the patch status). Because the *patchStatus* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software

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Values	released verification none
Default	No default

ATTRIBUTE Sw Av Patch patchCategory (category)

Access	Read only
Description	This attribute indicates the current category of a patch. The patch category can be one of six values: ***GEN*** (General Availability), ***LTD*** (Limited Distribution), ***DBG*** (Debug Content in the patch), ***OBS*** (Standard Obsolete patch), ***OBE*** (Emergency Obsolete patch), and ***NONE*** (default, when the system is not sure of the patch category). Because the *patchCategory* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
Values	gen ltd dbg obs obe none
Default	No default

ATTRIBUTE Sw Av Patch autoEligible (auto)

Access	Read only
Description	This attribute indicates whether a patch is eligible for auto- application. If the value of this attribute is ***no***, it overrides any other eligibility considerations and the patch is ineligible. However, if the value of this attribute is ***yes***, the patch must still meet all of the other criteria for auto-application eligibility. Because the *autoEligible* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
Values	yes no none
Default	No default

ATTRIBUTE Sw Av Patch mutuallyExclusive (mutEx)

Access	Read only
Description	This attribute indicates patches that are mutually exclusive to the patch being displayed. Because the *mutuallyExclusive* attribute is not stored in

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memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.

Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Av Patch prerequisites (prereq)

Access	Read only
Description	This attribute indicates patches that are prerequisites to the patch being displayed. Prerequisite patches must appear in the *Sw patchList* along with the patch in question. Because the *prerequisites* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Av Patch activateAfter (actAft)

Access	Read only
Description	This attribute indicates the patch or patches that are activated prior to the patch currently being displayed, when all patches are provisioned (that is, the patch being displayed is activated following the activation of the patches listed in this attribute). For example, if patch A is the patch listed in patch B's *activateAfter* attribute, patch A is activated before patch B, when both patch A and B are present in the *Sw patchList* attribute. Since the *activateAfter* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Av Patch supersedes (super)

Access	Read only
Description	This attribute indicates patches that are superseded by the patch being displayed. This patch and any of the patches that it supersedes are mutually exclusive to the patch being displayed. Because the *supersedes* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.

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Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw Av PatchVersion (PatchVersion)

Instance	String (1..30, ASCII)
Groups	GROUP Sw Av PatchVersion Operational (Oper)
Scope	Device
Description	*Sw Av/<name> PatchVersion/<version>* The *PatchVersion* component is only applicable with respect to the patch *AV*, all other *AV*s will ignore this component. Accessing this component will list the patch version files on the CP disk.
Mib	Software
Common Verbs	Help List Display

GROUP Sw Av PatchVersion Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PatchVersion* component.
Mib	Software

ATTRIBUTE Sw Av PatchVersion patches

Access	Read only
Description	This attribute lists the patches available in the given patch version. Because the *patches* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw LogicalProcessorType (Lpt)

Instance	String (1..25, ASCII)
Groups	GROUP Sw Lpt Provisioned (Prov)
Scope	Device

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Description	*Sw Lpt/<name>* This component is the Logical Processor Type, specifying characteristics of the software to be loaded on a card. Minimally, *LPT/CP* is required to exist. If it is deleted, semantic checks will fail.
Mib	Software
Common Verbs	Help List Display Add DELete

GROUP Sw Lpt Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *LPT* component.
Mib	Software

ATTRIBUTE Sw Lpt commentText (text)

Access	Read and write
Description	An arbitrary string used to enter a comment about an *LPT*.
Mib	Software
Values	String (0..80, ASCII)
Default	No default

ATTRIBUTE Sw Lpt systemConfig (systemConfig)

Access	Read and write
Description	This attribute specifies which set of pre-configured system parameters to use for the set of *Features* selected in *featureList*.
Mib	Software
Values	default
Default	default

ATTRIBUTE Sw Lpt featureList (fl)

Access	Read and write
Description	This attribute specifies a list of names of *Features* that define a particular configuration of application functionality that the user wants to load on a single processor. The combination of *Features* selected must be compatible (for example, none can be mutually exclusive with another in the list). All *Features* must belong to an *AV* specified in the *AVL*. All *Features* must be able to be loaded on any of the *Cards* which are

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	linked to *LPs* which are linked to this *LPT*. All prerequisite *Features* of the ones in this list will also be loaded.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Lpt logicalProcessors

Access	Read only
Description	This attribute shows which *LPs* are configured to load the *Feature* files associated with this *LPT*. It is the opposite side of the *LP* component's *logicalProcessorType* link attribute.
Mib	Software
List of	Link (Service, logicalProcessorType)
List Size	16
Default	No default

COMPONENT Sw Autopatch (Ap)

Groups	GROUP Sw Ap AutoPatchProv (App)
Scope	Device
Description	*Sw Ap* The *Autopatch* component is a child component of the *SW* component. The *AutoPatch* component holds attributes and commands pertinent to the operation of the *Patch Auto-Application* feature. This component is used to determine which patches can be applied based on the current configuration.
Mib	Software
Common Verbs	Help List Display

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VERB Check Sw Ap

Impact	Configuration
Description	*Check Sw AutoPatch* This verb, *Check*, is used to determine which patches should be active on a switch based on the status of the patch, the type of patch, and the software provisioned in the edit view. The *Check Sw AutoPatch* command is mutually exclusive with the *Tidy*, *Remove*, *Download*, and *Check Prov* commands. It will abort the command if any of the above commands or another *Check Sw AutoPatch* command is already in progress, or if the file system is locked or otherwise unavailable. The output of this command may be used to update the *Sw patchList* attribute with applicable patches.

GROUP Sw Ap **AutoPatchProv (App)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *AutoPatch* component
Mib	Software

ATTRIBUTE Sw Ap **patchVersion (version)**

Access	Read and write
Description	This attribute specifies which patch version file is used to determine the status and the category of a given patch. Patch version files can be listed using *l sw av/patch_<load> patchVersion/**. The '***latest***' refers to the alphanumeric property of the name.
Mib	Software
Values	String (0..30, ASCII)
Default	latest

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Sw

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Job function: Product Fundamentals
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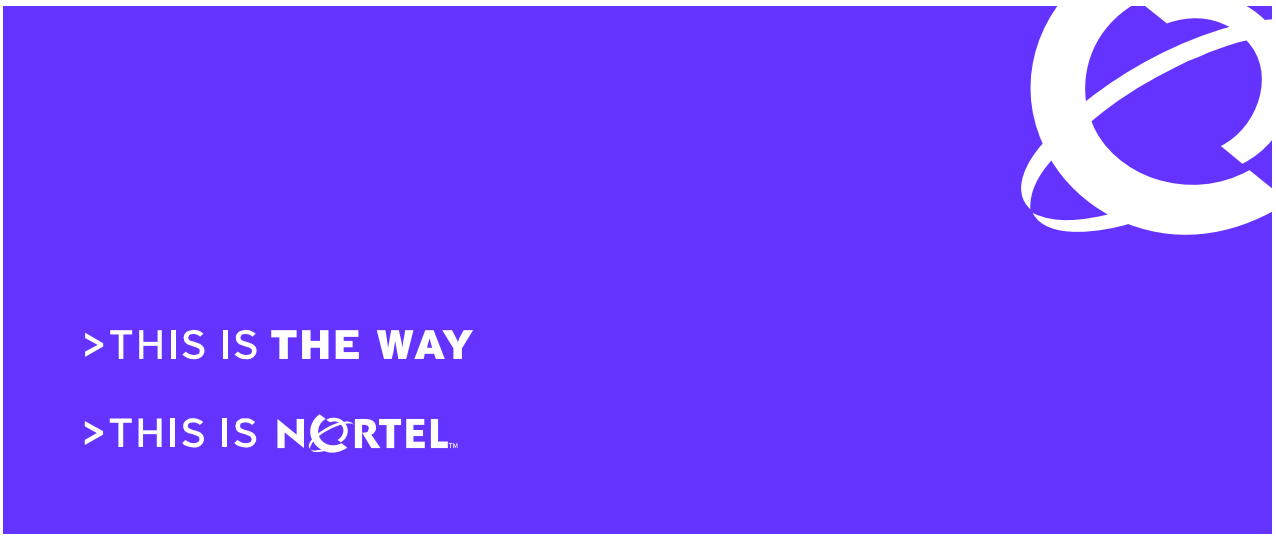

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - TdmaBc

NN10600-060

Document status: Standard
Document issue: 7.2S1
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Product release: PCR7.2 and up
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Type: NTP
Language type: U.S. English

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COMPONENT TdmaIwfBearerChannel (TdmaBc)

Instance	csIndex [Decimal (1..10)] bcIndex [Decimal (1..14030)]
Groups	GROUP TdmaBc Operational (Oper) GROUP TdmaBc CustomerIdentifierData (CidData) GROUP TdmaBc OsiState (State)
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex>* This component represents an individual bearer channel resource for a given *TdmaIwfCallServer*. Depending on the call type requested, the *TdmaIwfCallServer* links one or more *TdmaIwfBearerChannel*s in a single DMS-MTX InterWorking Function (IWF) call. Each *TdmaIwfBearerChannel* is linked to a channel on a DS1 or E1 port on a *TdmaIwfLogicalProcessor* (one *TdmaIwfBearerChannel* per channel). The instance value *csIndex* is the logical identifier for the DMS-MTX and is used for associating the call server with this *TdmaIwfBearerChannel* instance. The instance value *bcIndex* is the logical identifier for the *TdmaIwfBearerChannel*. It and the csIndex together define a unique *TdmaIwfBearerChannel*.

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This component is specific to the ***tdmaIwfBearerChannel*** feature of the ***tdmaIwf*** application.

Mib	TdmaIwf
Subcomponents	COMPONENT TdmaBc Framer
Dyn. Subcomp.	COMPONENT TdmaBc Modem COMPONENT TdmaBc Fax COMPONENT TdmaBc DataServiceControl (Dsc) COMPONENT TdmaBc RadioLinkProtocol1 (Rlp1) COMPONENT TdmaBc V42 COMPONENT TdmaBc V42Bis COMPONENT TdmaBc UpperRelay (Ur)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP TdmaBc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes concerning the operation of this particular *TdmaIwfBearerChannel* for the current or most recent call.
Mib	TdmaIwf

ATTRIBUTE TdmaBc state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the MSC/IWF Interface Protocol (MIP) Message Router (MMR) for an IWF element. This attribute has one of the following values: ***idle***: Startup state of IWF element. ***setup***: This call half is being set up. ***active***: This call half has been connected by both the MTX and IWF and is active. ***releas***e: This call half is being released.
Mib	TdmaIwf
Values	idle setup active release
Default	No default

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ATTRIBUTE TdmaBc callType

Access	Read: All Write: Illegal
Description	This attribute indicates the current call type. This attribute has one of the following values: ***analogSpeech***: Analog speech calls. ***digitalSpeech***: Digital speech calls. ***analogPrefSpeech***: Analog preferred speech calls. ***digitalPrefSpeech***: Digital preferred speech calls. ***asyncData***: Asynchronous data service calls. ***g3Fax***: Group 3 fax calls. ***rejected***: Rejected calls. ***stuIII***: STU III calls. ***notUsedYet***: Bearer Channel has not been used in a call yet. ***directAsyncData***: FastConnect or Direct Async Data Service (DADS) calls.
Mib	TdmaIwf
Values	analogSpeech digitalSpeech analogPrefSpeech digitalPrefSpeech asyncData g3Fax rejected stuIII notUsedYet directAsyncData
Default	No default

ATTRIBUTE TdmaBc lastResponseCode (respCode)

Access	Read: All Write: Illegal
Description	This attribute indicates the MSC/IWF Interface Protocol (MIP) Message Router (MMR) response code returned for the last call which was active on this particular *TdmaIwfBearerChannel*. This attribute has one of the following values: ***noCause***: No cause available. ***unassignedNumber***: Unallocated or unassigned number. ***noRouteToDest***: No route to destination. ***normalClearing***: The call was terminated normally. ***userBusy***: User busy. ***noResponse***: No carrier. ***userNoAnswer***: No answer from user. ***invalidNumberFormat***: Translation or routing problem. ***unspecNormal***: Normal, unspecified.

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temporaryFailure: Temporary failure.
channelUnavailable: Channel unavailable.
resourceUnavailable: Resources unavailable to handle call.
qosUnavailabled: Specified rate of call unavailable.
serviceUnavailable: Service not implemented.
unimplementedOption: Option not implemented.
invalidCallRefValue: Invalid call reference value.
invalidChannel: Identified channel does not exist.
unspecInvalidMessage: Invalid message, unspecified.
missingMandatoryIe: Missing mandatory information element.
invalidMessageType: Message type not implemented.
incompatibleMessage: Message not compatible with call state.
timerRecovery: Recovery on timer expiration.
protocolError: Protocol error, unspecified.

Mib	TdmaIwf
Values	noCause unassignedNumber noRouteToDest normalClearing userBusy noResponse userNoAnswer invalidNumberFormat unspecNormal temporaryFailure channelUnavailable resourceUnavailable qosUnavailable serviceUnavailable unimplementedOption invalidCallRefValue invalidChannel unspecInvalidMessage missingMandatoryIe invalidMessageType incompatibleMessage timerRecovery unspecProtocolError
Default	No default

ATTRIBUTE TdmaBc mateBearerChannel (mateBc)

Access	Read: All Write: Illegal
Description	This attribute contains the name of the mate *TdmaIwfBearerChannel* that this *TdmaIwfBearerChannel* is involved with in the currently active call. In the case of a FastConnect call, this mate is a *TdmaIwfFcBearerChannel*.

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Mib	TdmaIwf
Values	The name of the component
Default	No default

GROUP TdmaBc CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	TdmaIwf

ATTRIBUTE TdmaBc customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	TdmaIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP TdmaBc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	TdmaIwf

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ATTRIBUTE TdmaBc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	TdmaIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE TdmaBc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	TdmaIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE TdmaBc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib TdmaIwf

Values
idle
active (activ)
busy

Default idle

COMPONENT TdmaBc Framer

Groups
GROUP TdmaBc Framer Provisioned (Prov)
GROUP TdmaBc Framer Statistics (Stats)
GROUP TdmaBc Framer LinkOptions (Link)
GROUP TdmaBc Framer OsiState (State)

Scope Device

Description
TdmaBc/<csIndex>,<bcIndex> Framer
The *TdmaIwfFramer* component controls link layer framing for application components sending and receiving data on a link interface. The *TdmaIwfFramer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes which are associated with hardware components. The *TdmaIwfFramer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

Mib TdmaIwf

Common Verbs
Help
List
Display

GROUP TdmaBc Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib TdmaIwf

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ATTRIBUTE TdmaBc Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	TdmaIwf
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP TdmaBc Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *TdmaIwfFramer* component.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Framer txFrames

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *TdmaIwfFramer.* The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Framer rxFrames

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *TdmaIwfFramer.* The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Framer rxBytes

Access	Read only

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Description	This attribute counts the number of bytes received from the link interface by *TdmaIwfFramer*. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

GROUP TdmaBc Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains provisionable attributes for the *TdmaIwfFramer* which controls link layer framing for application components sending and receiving data on a link interface for this particular *TdmaIwfBearerChannel*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Framer framingType

Access	Read: All Write: Service
Criticality	Process
Description	This attribute indicates the type of framing for the link layer data received and transmitted on this channel. This attribute has one of the following values: ***btdsFraming***: Bit transparent framing for the *TdmaIwfBearerChannel* components on MVP cards. ***mtxFraming***: DMS-MTX InterSystem Link Protocol (ISLP) framing required for the *TdmaIwfBearerChannel* components on DS1C/E1C cards.
Mib	TdmaIwf
Values	btdsFraming mtxFraming
Default	No default

GROUP TdmaBc Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	TdmaIwf

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ATTRIBUTE TdmaBc Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	TdmaIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE TdmaBc Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	TdmaIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE TdmaBc Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: TdmaIwf

Values:
idle
active (activ)
busy

Default: idle

COMPONENT TdmaBc Modem

Groups: GROUP TdmaBc Modem Operational (Oper)
GROUP TdmaBc Modem Statistics (Stats)

Scope: Application

Description: *TdmaBc/<csIndex>,<bcIndex> Modem*
This component represents the group of measurements for the modem protocol established for a DMS-MTX IWF call (on the IWF to PSTN modem link) on this particular *TdmaIwfBearerChannel.*
Note that this component is present only if the current or most recent call involved this protocol.

Mib: TdmaIwf

Common Verbs:
Help
List
Display

GROUP TdmaBc Modem Operational (Oper)

Properties: Operational

Description: This group contains operational attributes that measure performance of the *modem* component for this particular *TdmaIwfBearerChannel*.

Mib: TdmaIwf

ATTRIBUTE TdmaBc Modem voiceLaw

Access:
Read: All
Write: Illegal

Description: This attribute indicates the active voice law associated with the *modem* component. This attribute has one of the following values: ***aLaw*** and ***muLaw***. Both protocols are utilized for encoding voice-band audio. For additional information on each, refer to ITU-T G.711 “Pulse Code Modulation (PCM) of Voice Frequencies”.

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Mib	TdmaIwf
Values	aLaw muLaw
Default	No default

ATTRIBUTE TdmaBc Modem rate

Access	Read: All Write: Illegal
Description	This attribute indicates the transmission rate of the current modem in use. All rates are the same in both the transmit and receive directions.
Mib	TdmaIwf
Values	50 300 600 1200 2400 4800 7200 9600 12000 14400 16800 19200 21600 24000 26400 28800 31200 32000 33600 38400 43200 48000 56000 57600 64000
Units	bit/s
Default	No default

ATTRIBUTE TdmaBc Modem modemAlgorithmInUse (algorithm)

Access	Read: All Write: Illegal
Description	This attribute indicates the current modem algorithm(s) active for the channel. This attribute has one of the following values: ***t30***: T.30 is active. T.30 is the Group 3 fax protocol.

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v17: V.17 is active.V.17 is an ITU-T 14400bit/s modem standard.
v21: V.21 is active. V.21 is an ITU-4 300bit/s modem standard.
v22: V.22 ia active. V.22 is an ITU-T modem standard that operates at 1200bit/s and 600 baud.
v22bis: V.22bis is active. V.22bis is an ITU-T modem standard that operates at 2400bit/s and 600 baud.
v27ter: V.27ter is active. V.27ter is an ITU-T 7200bit/s modem standard.
v29: V.29 is active. V.29 is an ITU-T 9600bit/s modem standard.
v32: V.32 is active. V.32 is an ITU-T modem standard that operates at 9600bit/s and 2400 baud.
v32bis: V.32bis is an ITU-T modem standard that operates at a speed of 14.4kbit/s.

Mib: TdmaIwf

Set of:
t30
v17
v21
v22
v22bis
v27ter
v29
v32
v32bis

Default: No default

ATTRIBUTE TdmaBc Modem protocolState (state)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the active protocol state of the modem in use.This attribute has one of the following values:
idle: Modem is in an inactive state and has no current connection established.
training: Modem is attempting to establish a connection with the far end modem via handshaking.
connected: Modem has establish a connection with the far end modem.
releasing: Modem has begun tearing down the connection.

Mib: TdmaIwf

Values:
idle
training
connected
releasing

Default: No default

ATTRIBUTE TdmaBc Modem mobileSideFlowControlState (mobileFlow)

Access:
Read: All
Write: Illegal

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Description	This attribute indicates the state of flow control based on whether flow control was requested by the mobile side of the connection and an indication was sent to an upper layer protocol. This attribute has one of the following values: ***on***: Flow control is active towards the mobile side of the call. ***off***: Flow control is not active towards the mobile side of the call.
Mib	TdmaIwf
Values	on off
Default	No default

ATTRIBUTE TdmaBc Modem pstnSideFlowControlState (pstnFlow)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of flow control based on whether flow control was requested by the PSTN side of the connection and an indication was sent to the Digital Signal Processor. This attribute has one of the following values: ***on***: Flow control is active towards the DSP (PSTN side of the call). ***off***: Flow control is not active towards the DSP (PSTN side of the call).
Mib	TdmaIwf
Values	on off
Default	No default

ATTRIBUTE TdmaBc Modem asyncMode (async)

Access	Read: All Write: Illegal
Description	This attribute indicates whether conversion between synchronous and asynchronous data format (specifically, the stripping or insertion of start and stop bits) is being performed. The value is ***on*** unless the V.42 layer is active or it is a fax call. This attribute has one of the following values: ***on***: Conversion between synchronous and asynchronous data is being performed. ***off***: Conversion between synchronous and asynchronous data is not being performed.
Mib	TdmaIwf
Values	on off
Default	No default

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ATTRIBUTE TdmaBc Modem outbandFlowControl (outbandFlow)

Access	Read: All Write: Illegal
Description	This attribute indicates whether outband flow control conversions are being performed. If outband flow control is on, then when the Modem Application Layer (MAL) receives an xon or xoff from the PSTN, the MAL converts the instruction into a primitive and sends it to the Data Service Control (DSC). In the opposite direction with outband flow control on, when the MAL receives a primitive from the DSC, the MAL converts the primitive into an xon or xoff and forwards it to the PSTN. If outband flow control is off, then all flow control is handled inband. The modem performs either inband or outband flow control unless V.42 layer is active, it is a fax call, or no flow control was specified by the DMS-MTX. This attribute has one of the following values: ***on***: Conversion to and from out-of-band signaling is enabled. ***off***: Conversion to and from out-of-band signaling is disabled.
Mib	TdmaIwf
Values	on off
Default	No default

ATTRIBUTE TdmaBc Modem outbandBreak (outbandBrk)

Access	Read: All Write: Illegal
Description	This attribute indicates whether inband or outband break control conversions are being performed. If outband break control is on, when the modem detects a break condition coming from the PSTN, the Modem Application Layer (MAL) converts the instruction into a primitive and forwards it to the Data Service Control (DSC). In the opposite direction with outband break control on, when the MAL receives a primitive from the DSC, the MAL converts the primitive into a break and forwards it to the PSTN. When a break condition is discovered all subsequent incoming data is discarded until a start bit is received.
Mib	TdmaIwf
Values	on off
Default	No default

ATTRIBUTE TdmaBc Modem autobaud

Access	Read: All Write: Illegal
Description	This attribute indicates whether autobaud is active. The modem is instructed at call setup time by the DMS-MTX on the

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following:
(1) the initial modem data rate value, and
(2) whether a modem is allowed to perform autobauding (***on***) or not (***off***). With autobauding on, the modem is allowed to connect using a valid modem data rate less than or equal to the initial rate specified to the modem by the DMS-MTX. If a modem cannot perform autobauding and the carrier cannot be established at the initial data rate, the modem is disabled.

Mib TdmaIwf

Values on
off

Default No default

GROUP TdmaBc Modem Statistics (Stats)

Properties Operational

Description This group contains operational attributes that measure performance of the modem component for this particular *TdmaIwfBearerChannel*.

Mib TdmaIwf

ATTRIBUTE TdmaBc Modem txBytes

Access Read: All
Write: Illegal

Description This attribute counts the number of payload bytes transmitted. The counter wraps when it exceeds the maximum value.

Mib TdmaIwf

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE TdmaBc Modem rxBytes

Access Read: All
Write: Illegal

Description This attribute counts the number of payload bytes received. The counter wraps when it exceeds the maximum value.

Mib TdmaIwf

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE TdmaBc Modem framingErrors (frmErr)

Access Read: All
Write: Illegal

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Description	This attribute counts the number of framing errors detected by the hardware. This is the absence of a stop bit after a start bit and eight bits of data. All incoming data is discarded until the next start bit is received. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc Fax

Groups	GROUP TdmaBc Fax Operational (Oper) GROUP TdmaBc Fax Statistics (Stats)
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> Fax* This component represents the group of measurements for the fax protocol established for a DMS-MTX IWF call (on the mobile station to IWF link or the IWF to PSTN fax modem/machine link) on this particular *TdmaIwfBearerChannel.* Note that this component is present only if the current or most recent call involved this protocol.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc Fax Operational (Oper)

Properties	Operational
Description	This group contains operational attributes which measure the performance of the fax protocol.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Fax activeMode (mode)

Access	Read: All Write: Illegal
Description	This attribute indicates the mode of the fax T.30 protocol, determined during Exchange Identification (XID) negotiations. The following modes are supported: ***normal***: Normal T.30 protocol, Error Correction Mode (ECM) not used. ***ecm***: Error Correction Mode used. Fax error correction is done using a half-duplex page selective repeat technique.
Mib	TdmaIwf

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Values	normal ecm
Default	No default

ATTRIBUTE TdmaBc Fax protocolState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the protocol state of the fax adaptor. This attribute has one of the following values: ***setup***: Call setup state. ***idle***: Idle state only transmitting Synchronize (SYNC) frames. ***bcsRx***: Receiving Binary Coded Signal (BCS) packet from modem. ***bcsTx***: Transmitting BCS packet to modem. ***msgRx***: Receiving fax message from modem. ***msgTx***: Transmitting fax message to modem.
Mib	TdmaIwf
Values	setup idle bcsRx bcsTx msgRx msgTx
Default	No default

ATTRIBUTE TdmaBc Fax messageRate (msgRate)

Access	Read: All Write: Illegal
Description	This attribute indicates the fax message rate used for sending fax documents.
Mib	TdmaIwf
Values	Decimal (0..65000)
Units	bit/s
Default	No default

GROUP TdmaBc Fax Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes which measure the performance of the fax protocol.
Mib	TdmaIwf

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ATTRIBUTE TdmaBc Fax txPagesToMobile (txPages)

Access	Read: All Write: Illegal
Description	The attribute counts the number of fax pages transmitted to the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Fax rxPagesFromMobile (rxPages)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax pages received from the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc DataServiceControl (Dsc)

Groups	GROUP TdmaBc Dsc Operational (Oper) GROUP TdmaBc Dsc Statistics (Stats)
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> Dsc* This component represents the group of measurements for the DMS-MTX DSC Protocol established for a DMS-MTX IWF call (on the mobile station to the IWF link) on this particular *TdmaIwfBearerChannel.* Note that this component is present only if the current or most recent call involved this protocol.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc Dsc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the DSC asynchronous data service.
Mib	TdmaIwf

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ATTRIBUTE TdmaBc Dsc p0CompressionDirection (p0)

Access	Read: All Write: Illegal
Description	This attribute indicates the direction of compression requested from logical link 0 (LL0). This attribute has one of the following values: ***noCpmpression***: No data compression. ***compInitrResp***: Compression initiator to responder. ***compRespInitr***: compression responder to initiator. ***compBoth***: compression in both directions.
Mib	TdmaIwf
Values	noCompression compInitrResp compRespInitr compBoth
Default	No default

ATTRIBUTE TdmaBc Dsc p1CompressionMaximumCodewords (p1)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of codewords to be requested from logical link 0 (LL0) for compression. A codeword is a binary number that represents a string of characters.
Mib	TdmaIwf
Values	Decimal (512..65535)
Default	No default

ATTRIBUTE TdmaBc Dsc p2CompressionMaximumCharacters (p2)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of characters that can be represented by a single codeword to be requested from logical link 0 (LL0) for compression.
Mib	TdmaIwf
Values	Decimal (6..250)
Default	No default

GROUP TdmaBc Dsc Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes that measure the performance of the DSC asynchronous data service.

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Mib	TdmaIwf

ATTRIBUTE TdmaBc Dsc txBytes

Access	Read: All Write: Illegal
Description	This attribute counts the number of data bytes relayed by DSC in the transmit direction (towards the mobile). The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Dsc rxBytes

Access	Read: All Write: Illegal
Description	This attribute counts the number of data bytes relayed by DSC in the receive direction (from the mobile). The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc RadioLinkProtocol1 (Rlp1)

Groups	GROUP TdmaBc Rlp1 Operational (Oper) GROUP TdmaBc Rlp1 Statistics (Stats)
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> Rlp1* This component represents the group of measurements for the Radio Link Protocol 1 (RLP1) established for a DMS-MTX IWF call (on the mobile station to IWF link) on this particular *TdmaIwfBearerChannel.* Note that this component is present only if the current or most recent call involved this protocol.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc Rlp1 Operational (Oper)

Properties	Operational

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Description	This group contains operational attributes that measure performance of the *TdmaIwfBearerChannel*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Rlp1 layer3L0ReqWinSize (l3ReqW0)

Access	Read: All Write: Illegal
Description	This attribute indicates the window size for Service Access Point (SAP) 0 requested by layer 3. The window size is the maximum number of sequentially numbered Information (I) frames that may be unacknowledged at any given time.
Mib	TdmaIwf
Values	Decimal (1..64)
Default	No default

ATTRIBUTE TdmaBc Rlp1 layer3L1ReqWinSize (l3ReqW1)

Access	Read: All Write: Illegal
Description	This attribute indicates the window size for Service Access Point (SAP) 1 requested by layer 3. The window size is the maximum number of sequentially numbered Information (I) frames that may be unacknowledged at any given time.
Mib	TdmaIwf
Values	Decimal (1..64)
Default	No default

ATTRIBUTE TdmaBc Rlp1 t1ResponseTimer (t1)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T1 timer for Service Access Points (SAP) 0 and 1 negotiated by the Radio Link Protocol 1 (RLP1), during Exchange Information (XID). This attribute specifies the time the receiving RLP1 entity shall wait for a response from the peer TIA-136-310 (formerly IS-130) application. The value used for XID negotiations can be provisioned in the *TdmaCs/* Rlp1 t1ResponseTimer* attribute.
Mib	TdmaIwf
Values	Decimal (5..20)
Units	seconds
Default	No default

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ATTRIBUTE TdmaBc Rlp1 t2LinkActivityTimer (t2)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T2 timer for Service Access Points (SAP) 0 and 1 negotiated by the Radio Link Protocol 1 (RLP1), during Exchange Information (XID). This attribute specifies the maximum time the receiving RLP1 entity shall wait for link activity. The value used for XID negotiations can be provisioned in the *TdmaCs/* Rlp1 t2LinkActivityTimer* attribute.
Mib	TdmaIwf
Values	Decimal (10..120)
Units	seconds
Default	No default

ATTRIBUTE TdmaBc Rlp1 t3PeerAckTimer (t3)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T3 timer for Service Access Points (SAP) 0 and 1 negotiated by the Radio Link Protocol 1 (RLP1), during Exchange Information (XID). The attribute specifies the maximum time the receiving RLP1 entity shall wait for the peer to ACK or NAK data. The value used for XID negotiations can be provisioned in the *TdmaCs/* Rlp1 t3PeerAckTimer* attribute.
Mib	TdmaIwf
Values	Decimal (5..20)
Units	seconds
Default	No default

GROUP TdmaBc Rlp1 Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *TdmaIwfBearerChannel.*
Mib	TdmaIwf

ATTRIBUTE TdmaBc Rlp1 txFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of valid frames transmitted to the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Rlp1 rxFrames

Access	Read: All Write: Illegal
Description	This attributes counts the number of valid frames received from the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Rlp1 badRxFrames

Access	Read: All Write: Illegal
Description	This attribute count the total number of bad RLP1 frames received from the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc V42

Groups	GROUP TdmaBc V42 Operational (Oper) GROUP TdmaBc V42 Statistics (Stats)
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> V42* This component represents the group of measurements for the ITU-T V.42 error correcting protocol established for a DMS-MTX IWF call (on the IWF to PSTN modem link) on this particular *TdmaIwfBearerChannel.* Note that this component is present only if the current or most recent call involved this protocol.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc V42 Operational (Oper)

Properties	Operational

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Description	This group contains operational attributes which measure V.42 error detection and correction performance.
Mib	TdmaIwf

ATTRIBUTE TdmaBc V42 protocolState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of V.42. Valid states are: ***notActive***: The V.42 link connection with the PSTN modem is not established. None of the V.42 functions including the error detection, error correction, and flow control is provided to the data call. This is the initial state of V.42. ***disconnected***: This means that the V42 link is disconnected. ***linkSetup***: The V.42 operation enters this state from the disconnected state after the V.42 sends to the PSTN modem a Set Asynchronous Balanced Mode Extended (SABME) frame in an attempt to establish the error control connection with the PSTN modem. ***frameReject***: The V.42 operation enters into this state after it identifies an invalid frame sent by the peer and it sends back a frame reject (FRMR) frame to the peer. ***disconnectRequest***: The V.42 operation enters into this state after it sends to the peer a disconnect (DISC) frame with the attempt to disconnect the V.42 error control link. ***informationTransfer***: The V.42 enters into this state after it receives a UA (unnumbered acknowledgment) frame which the peer sent upon receipt of the SAMBE frame from IWF V.42. Once in this state, the V.42 can exchange data and supervisory information with its peer. ***waitingAck***: The V.42 enters this state after it sends polling enquiry to its peer. The V.42 sends the polling enquiry when it receives a reject frame (REJ) from its peer or either its acknowledgment timer or inactivity timer timed out on the information frames sent out.
Mib	TdmaIwf
Values	notActive disconnected (disc) linkSetup frameReject (frmRej) disconnectRequest (discReq) informationTransfer (infoXfer) waitingAck (waitAck)
Default	No default

ATTRIBUTE TdmaBc V42 txN401FrameSize (txN401)

Access	Read: All Write: Illegal

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Description	This attribute indicates the current value of parameter N401 for V.42 which is negotiated during Exchange Information (XID). This is the maximum number of octets that can be carried in the information field of an information frame that the IWF V.42 transmits to the PSTN modem. The IWF V.42 puts this or even smaller size of data into the outgoing information frame. The value used for XID negotiations can be provisioned via *TdmaCs/* V42.*
Mib	TdmaIwf
Values	Decimal (0..65355)
Units	octets
Default	No default

ATTRIBUTE TdmaBc V42 rxN401FrameSize (rxN401)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of N401, that is negotiated during Exchange Identification (XID). This is the maximum number of octets that can be carried in the information field of an information frame received from the PSTN modem. An incoming information frame carrying data octets more than this size shall be rejected by the IWF V.42. The value used for XID negotiations can be provisioned via *TdmaCs/* V42.*
Mib	TdmaIwf
Values	Decimal (1..255)
Units	octets
Default	No default

ATTRIBUTE TdmaBc V42 txKWindowSize (txK)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of k, that is negotiated during Exchange Identification (XID). This is the size of flow control sliding window used for the information frames that the V.42 transmits to the PSTN modem. This size governs the maximum number of information frames that the IWF V.42 error-correcting entity can have outstanding (that is, unacknowledged). The value used for XID negotiations can be provisioned via *TdmaCs/* V42.*
Mib	TdmaIwf
Values	Decimal (0..127)
Default	No default

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ATTRIBUTE TdmaBc V42 rxKWindowSize (rxK)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of k that is negotiated during Exchange Identification (XID). This is the size of flow control sliding window used for information frames transmitted from the PSTN modem. This size governs the maximum number of information frames that the peer of the IWF V.42 error-correcting entity can have outstanding (that is, unacknowledged). The value used for XID negotiations can be provisioned via *TdmaCs/* V42.*
Mib	TdmaIwf
Values	Decimal (1..127)
Default	No default

ATTRIBUTE TdmaBc V42 v42ActiveInCall

Access	Read: All Write: Illegal
Description	This attribute indicates whether V42 is really being used in this data call.
Mib	TdmaIwf
Values	notActiveInCall activeInCall
Default	notActiveInCall

ATTRIBUTE TdmaBc V42 v42BisActiveInCall

Access	Read: All Write: Illegal
Description	This attribute indicates whether V42bis is really being used in this data call.
Mib	TdmaIwf
Values	notActiveInCall activeInCall
Default	notActiveInCall

GROUP TdmaBc V42 Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes that measure the V.42 error detection and correction performance.
Mib	TdmaIwf

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ATTRIBUTE TdmaBc V42 rxIBytes

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that the V.42 actually received from the PSTN modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Units	octets
Default	0

ATTRIBUTE TdmaBc V42 txIBytes

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that the V.42 transmitted to the PSTN modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Units	octets
Default	0

ATTRIBUTE TdmaBc V42 rxIFrames

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Information (I) frames that the V.42 received from the PSTN modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 txIFrames

Access	Read: All Write: Illegal
Description	This attribute counts the total number of information frames that the V.42 transmitted to the PSTN modem in a data call. The counter wraps when it exceeds the maximum value.

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Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 retransmittedFrames (retransFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames retransmitted by the IWF V.42 entity in a data call. The V.42 retransmits the same frame when the associated T401 acknowledgment timer timeouts or when a Reject (REJ) supervisory frame has been received from the PSTN modem. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 t1AckTimeouts (t1Timeout)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times that the T401 timer has timed out within a data call. If this timer times-out frequently, the operator may need to adjust the provisioned parameter T401 acknowledgment timer to a larger time amount, since every time that V.42 sends out a frame it sets the T401 timer to wait for the peer's acknowledgment of the frame. When the timer times-out and no acknowledgment has been received, the V.42 sends the same frame to its peer. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 remoteBusyIndications (remoteBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the PSTN modem enters a busy state (the IWF has received a Receive Not Ready message) and asks the IWF V.42 not to send Information (I) frames to it until it is ready to receive information frames again (indicated by receipt of a Receive Ready message or a data message). The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 localBusyIndications (localBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the IWF V.42 enters in a busy condition and asks the peer to stop sending information frames until it has cleared up from the busy condition. The V.42 enters busy condition when its data buffer is about to be overflowed by the incoming Information (I) frames. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 badFramesRx (badFrmRx)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bad frames the IWF V.42 has received from the PSTN remote modem within the data call. In this instance, “bad frames” refer to the V.42 protocol error frames other than the check sequence error frames. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 crcErrorsRx (crcErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames received from the remote PSTN modem that contain incorrect frame check sequence. A high value signifies the condition of the physical medium is poor. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

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COMPONENT TdmaBc V42Bis

Groups	GROUP TdmaBc V42Bis Operational (Oper) GROUP TdmaBc V42Bis Statistics (Stats)
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> V42bis* This component represents the group of measurements for the ITU-T V.42bis data compression protocol established for an IWF call (on the mobile station to the IWF link or the IWF to PSTN fax modem link) on this particular *TdmaIwfBearerChannel.* Note that this component is present only if the current or most recent call involved this protocol.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc V42Bis Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of *IwfV42bis*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc V42Bis protocolModeEncoder (modeEncoder)

Access	Read: All Write: Illegal
Description	This attribute indicates the current mode of the *IwfV42bis* encoder. This mode can be either: ***transparent***: A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences may be inserted into the data stream. ***compressed***: A mode of operation in which data is transmitted in codewords. The encoder switches between the two modes depending on whether the data coming from the Date Terminal Equipment (DTE) is suitable for compression. The data compression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.
Mib	TdmaIwf
Values	transparent compressed
Default	No default

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ATTRIBUTE TdmaBc V42Bis protocolModeDecoder (modeDecoder)

Access	Read: All Write: Illegal
Description	This attribute indicates the current mode of the V.42bis decoder. This mode can be either: ***transparent***: A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences may be inserted into the data stream. ***compressed***: A mode of operation in which data is transmitted in codewords. The encoder (at the mobile or PSTN) switches between the two modes depending on whether the data coming from the Date Terminal Equipment (DTE) is suitable for compression. The data compression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.
Mib	TdmaIwf
Values	transparent compressed
Default	No default

ATTRIBUTE TdmaBc V42Bis p0CompressionDirection (p0)

Access	Read: All Write: Illegal
Description	This attribute indicates the direction in which V.42bis is active, negotiated at link setup by the data link protocol through Exchange Identification (XID) negotiation of parameter P0 (compression direction). The value used for XID negotiations can be provisioned via *TdmaCs/* V42bis*. This attribute has one of the following values: ***noCompression***: No data compression. ***compInitrResp***: The data sent by the IWF to the other entity is compressed. ***compRespInitr***: The data received by the IWF from the other entity is compressed. ***compBoth***: compression in both directions.
Mib	TdmaIwf
Values	noCompression compInitrResp compRespInitr compBoth
Default	No default

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ATTRIBUTE TdmaBc V42Bis p1MaximumCodewords (p1)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of codewords in the dictionary negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P1 (number of codewords). The value used for XID negotiations can be provisioned via *TdmaCs/* V42bis*.
Mib	TdmaIwf
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE TdmaBc V42Bis p2MaximumStringSize (p2)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of characters allowed in a string represented by a codeword negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P2 (maximum string size). The value used for XID negotiations can be provisioned via *TdmaCs/* V42bis.*
Mib	TdmaIwf
Values	Decimal (6..250)
Default	No default

ATTRIBUTE TdmaBc V42Bis lastDecodeError (lastDecodeErr)

Access	Read: All Write: Illegal
Description	This attribute indicates last error found by the decoder. This attribute has one of the following values: ***none***: No errors found. ***badStepup***: Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). ***codewordEqC1***: Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). ***emptyCodeword***: Receipt of a codeword representing an empty dictionary entry. ***reservedCommand***: Receipt of a reserved command code. ***generalError***: Receipt of any other error. The action taken by V.42bis on detecting an error is provisioned via *TdmaCs/* V42bis.*
Mib	TdmaIwf

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Values	none badStepup codewordEqC1 emptyCodeword rsvdCommand generalError
Default	none

ATTRIBUTE TdmaBc V42Bis compRatioEncoder

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder running on the Passport. This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.
Mib	TdmaIwf
Values	Decimal (0.00..300.00)
Default	No default

ATTRIBUTE TdmaBc V42Bis compRatioDecoder

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder at the mobile or PSTN. This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.
Mib	TdmaIwf
Values	Decimal (0.00..300.00)
Default	No default

GROUP TdmaBc V42Bis Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes that measure the performance of *IwfV42bis*.
Mib	TdmaIwf

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ATTRIBUTE TdmaBc V42Bis modeChangesEncode (modeChgEncode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mode changes (from transparent to compressed or from compressed to transparent) by the encoder. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis modeChangesDecode (modeChgDecode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mode changes (from transparent to compressed or from compressed to transparent) by the decoder. The mode changes are determined by the encoder at the mobile or the PSTN. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis resetsEncode

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets sent by the encoder. A reset is a command code sent by the encoder to force dictionary reinitialization. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis resetsDecode

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets received by the decoder. A reset is a command code sent by the encoder to force dictionary reinitialization. The resets of the decoder are determined by the encoder at the mobile or PSTN. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis reinitializations (reInit)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times V.42bis is reinitialized because of a destructive break (a destructive break is a break that causes data to be discarded) occurring on the error-corrected connection initiated by either the mobile or PSTN. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis errorsInDecode (errDecode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of errors found by the decoder. The errors could be any of the following: 1.Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). 2. Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). 3. Receipt of a codeword representing an empty dictionary entry. 4. Receipt of a reserved command code. 5. Receipt of any other error. The counter wraps when it exceeds the maximum value. The action taken by V.42bis on detecting any of these errors is provisioned via *TdmaCs/* V42bis.*
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc UpperRelay (Ur)

Groups	GROUP TdmaBc Ur Operational (Oper) GROUP TdmaBc Ur Statistics (Stats)
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> UpperRelay* This component represents the group of measurements for the Upper Relay function established for each half of a DMS-MTX IWF asynchronous

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data or fax call (internally between the two *TdmaIwfBearerChannel*s involved in a call) from this particular *TdmaIwfBearerChannel* perspective.

Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc Ur Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Ur rxBufferSize

Access	Read: All Write: Illegal
Description	This attribute indicates the size of the receive flow control buffer. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE TdmaBc Ur txFlowControlState (txFlowControl)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the transmit flow control is active or not. This attribute has one of the following values: ***active***: The transmit flow control is active. ***inactive***: The transmit flow control is inactive. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	active inactive
Default	No default

ATTRIBUTE TdmaBc Ur rxFlowControlState (rxFlowControl)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the receive flow control is active or not. This attribute has one of the following values:

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active: The receive flow control is active.
inactive: The receive flow control is inactive.
This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.

Mib	TdmaIwf
Values	active inactive
Default	No default

GROUP TdmaBc Ur Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay.*
Mib	TdmaIwf

ATTRIBUTE TdmaBc Ur txFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the transmit direction. The counter wraps when it exceeds the maximum value. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Ur rxFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the receive direction. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Ur unacknowledgedFrames (unackFrm)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of frames sent that have not been acknowledged for this instance of the UpperRelay. The counter wraps when it exceeds the maximum value.

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Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Ur cumUnacknowledgedFrames (cUnackFrm)

Access	Read: All Write: Illegal
Description	This attribute is the total number of unacknowledged frames for this instance of the UpperRelay. It is not reset when a new call starts.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - TdmaBc

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Language type: U.S. English

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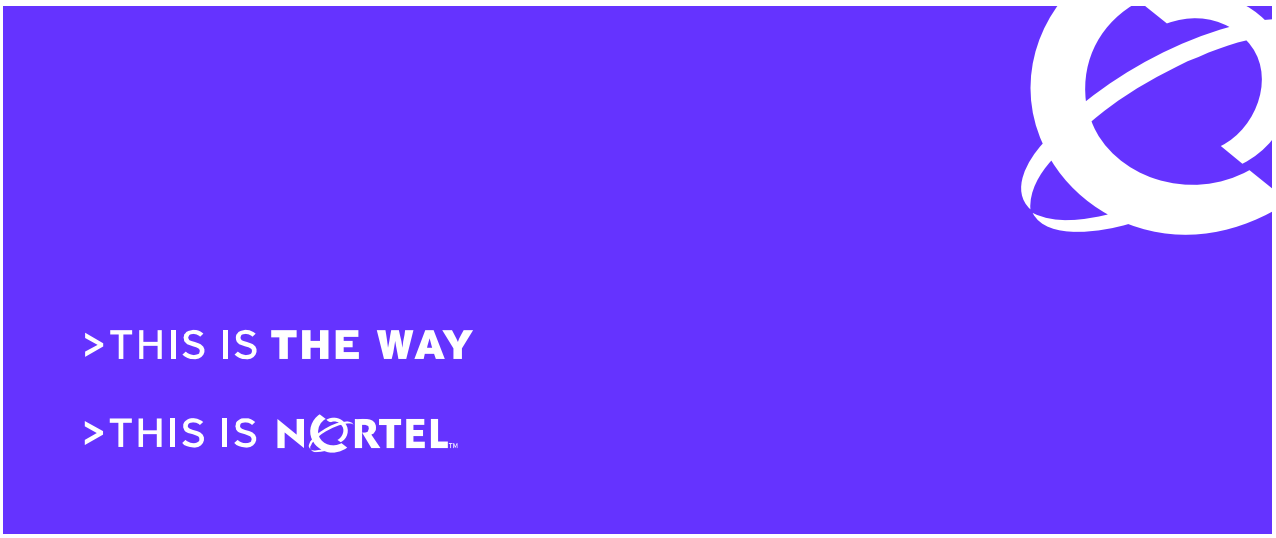

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - TdmaCs

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COMPONENT TdmaIwfCallServer (TdmaCs)

Instance	Decimal (1..10)
Groups	GROUP TdmaCs ServiceProvisioned (ServProv) GROUP TdmaCs MiscProvisioned (MiscProv) GROUP TdmaCs CustomerIdentifierData (CidData) GROUP TdmaCs OsiState (State) GROUP TdmaCs Statistics (Stats)
Scope	Application
Description	*TdmaCs/<csIndex>* The *TdmaIwfCallServer* component represents an instance of a call manager for Mobile Telephone eXchange communications (MTX) InterWorking Function (IWF) calls on this node. The *TdmaIwfCallServer* provides a mechanism to segregate call resources (*TdmaIwfBearerChannels)* and maintenance activities for the *TdmaIwfBearerChannel*(s) associated with that *TdmaIwfCallServer*. The *csIndex* bears no particular significance and is arbitrary.

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This component is specific to the ***tdmaIwfCallServer*** feature of the ***tdmaIwf*** application.

Mib	TdmaIwf
Subcomponents	COMPONENT TdmaCs Modem COMPONENT TdmaCs Fax COMPONENT TdmaCs DataCircuitTerminatingEquipment (Dce) COMPONENT TdmaCs DataServiceControl (Dsc) COMPONENT TdmaCs RadioLinkProtocol1 (Rlp1) COMPONENT TdmaCs V42 COMPONENT TdmaCs V42Bis
Opt. Subcomp.	COMPONENT TdmaCs LogicalProcessor (Lp) COMPONENT TdmaCs FastConnect (Fc)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP TdmaCs ServiceProvisioned (ServProv)

Properties	Provisioned
Description	This group contains all the necessary timers for call setup and call clearing scenarios on the IWF.
Mib	TdmaIwf

ATTRIBUTE TdmaCs tIwf1

Access	Read: All Write: Configuration
Description	This is an internal timer to the call server of the IWF and is used during call setup for ensuring the MIT protocol stack and the NIT modem for a new call have been allocated and initialized.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs tIwf2

Access	Read: All Write: Configuration

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Description	This is an internal timer to the call server of the IWF and is used during call clearing for ensuring the MIT protocol stack and NIT modem for a call have been deallocated correctly.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs t303

Access	Read: All Write: Configuration
Description	This timer is a call setup timer and is used for ensuring a CallProceeding message is received for a Setup message that has been sent by the IWF to the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs t305

Access	Read: All Write: Configuration
Description	This timer is a call clearing timer and is used for ensuring a Release message is received for a Disconnect message the IWF has sent to the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	30

ATTRIBUTE TdmaCs t308

Access	Read: All Write: Configuration
Description	This timer is a call clearing timer and is used for ensuring a ReleaseComplete message is received for the Release message the IWF has sent to the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)

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Units	seconds
Default	4

ATTRIBUTE TdmaCs t313

Access	Read: All Write: Configuration
Description	This is a call setup timer and is used for ensuring a ConnectAck message is received in response for the Connect message the IWF has sent to the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs t999

Access	Read: All Write: Configuration
Description	This timer is used during a mobile termination call setup and is used for ensuring the Setup message is received from the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	300

ATTRIBUTE TdmaCs supportedTechnology

Access	Read: All Write: Configuration
Description	This attribute specifies the wireless technology that is supported for data calls on this IWF.
Mib	TdmaIwf
Values	tdmaOnly cdmaOnly tdmaAndCdma
Default	tdmaOnly

ATTRIBUTE TdmaCs supportedService

Access	Read: All Write: Configuration
Description	This attribute specifies the type(s) of data calls this IWF supports.

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Mib	TdmaIwf
Values	asyncDataOnly g3FaxOnly analogFaxOnly packetOnly asyncDataAndG3Fax asyncDataAndAnalogFax asyncDataAndPacket asyncDataG3FaxAndPacket asyncDataAFaxAndPacket
Default	asyncDataOnly

GROUP TdmaCs MiscProvisioned (MiscProv)

Properties	Provisioned
Description	This group contains general provisioning data for the *TdmaIwfCallServer* that does not fit within other provisioning groups.
Mib	TdmaIwf

ATTRIBUTE TdmaCs commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, this attribute is used to specify the name of the DMS-MTX configured for this *TdmaIwfCallServer* plus any other commentary information.
Mib	TdmaIwf
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE TdmaCs mtxIpAddress (ipAddr)

Access	Read: All Write: Configuration
Description	This attribute specifies the Internet Protocol (IP) Address of the Mobile Telephone Exchange (MTX) that is permitted to set up MTX InterWorking Function (IWF) data calls using this *TdmaIwfCallServer*. This address must be specified in order for this *TdmaIwfCallServer* to provide service. If call setups are attempted from an MSC which does not have this address, those calls are rejected. The *callsRequested* statistic of this *TdmaIwfCallServer* is incremented and appropriate call failure logs are generated at the MSC.
Mib	TdmaIwf
Values	IP address

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Default	0.0.0.0

ATTRIBUTE TdmaCs virtualRouterName (vr)

Access	Read: All Write: Configuration
Criticality	Component
Description	This attribute specifies the virtual router that this *TdmaIwfCallServer* uses for transmitting and receiving signaling messages to and from the DMS-MTX.
Mib	TdmaIwf
Values	The name of the component
Default	No default

ATTRIBUTE TdmaCs voiceLaw (encoding)

Access	Read: All Write: Configuration
Description	This attribute specifies the voice law to be established for the IWF to PSTN modem link for calls established by this *TdmaIwfCallServer*. This attribute has one of the following values: ***aLaw***: A protocol for encoding voice-band audio, Pulse Code Modulation (PCM). ***muLaw***: A protocol for encoding voice-band audio, PCM. Note that this value must match the voice law used at the DMS-MTX connected to this *TdmaIwfCallServer*.
Mib	TdmaIwf
Values	aLaw muLaw
Default	No default

GROUP TdmaCs CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	TdmaIwf

ATTRIBUTE TdmaCs customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the

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component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	TdmaIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP TdmaCs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	TdmaIwf

ATTRIBUTE TdmaCs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	TdmaIwf

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE TdmaCs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	TdmaIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE TdmaCs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	TdmaIwf
Values	idle active (activ) busy
Default	idle

GROUP TdmaCs Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance used for the calls set up by this particular *TdmaIwfCallServer*.

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Mib	TdmaIwf

ATTRIBUTE TdmaCs currentCalls (currCall)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active calls currently serviced by this particular *TdmaIwfCallServer*.
Mib	TdmaIwf
Values	Decimal (0..2047)
Default	0

ATTRIBUTE TdmaCs callsRequested (callsReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF call setup requests received at this particular *TdmaIwfCallServer* from the DMS-MTX. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs callsSetup (callsSet)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls successfully setup by this particular *TdmaIwfCallServer*. A call is considered setup when the IWF-Setup-Request message is received, indicating a request for a data communications service, and the IWF has successfully allocated the necessary resources to fulfill the request. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs callsReleasedNormal (callsRlsdNor)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls that have completed successfully on this particular *TdmaIwfCallServer*. The counter wraps when it exceeds the maximum value.

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Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs callsReleasedAbnormal (callsRlsdAbnor)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls that have been released due to error conditions at this particular *TdmaIwfCallServer* or one if its *TdmaIwfBearerChannel*(s). The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs erroredLFrames (errLFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of CM/IWF Control Interface (CCI) messages received from the DMS-MTX that have an incorrect format. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT TdmaCs Modem

Scope	Application
Description	*TdmaCs/<csIndex> Modem/<modem-type>* This component represents an instance of a particular modem type that enables support of the various modem protocols on the DMS-MTX IWF.
Mib	TdmaIwf
Common Verbs	Help List Display

COMPONENT TdmaCs Fax

Scope	Application
Description	*TdmaCs/<csIndex> Fax* This component represents an instance of fax attributes. These specify

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various default settings for aspects of the fax protocol, which may be used for a DMS-MTX IWF call.

Mib TdmaIwf

Common Verbs
Help
List
Display

COMPONENT TdmaCs DataCircuitTerminatingEquipment (Dce)

Scope Application

Description TdmaCs/<csIndex> Dce
This component represents an instance of the Data Circuit-Terminating Equipment (DCE). The DCE represents a layer of the protocol stack for the network-side connection to the Public Switched Telephone Network. It is responsible for call control, AT-command handling, user-data transport, online-command signaling, break signaling, circuit/signal lead transport, and compression negotiation. The DCE is based on the BMI (BSC, MSC, IWF) portion of the IS-135 standard.

Mib TdmaIwf

Common Verbs
Help
List
Display

COMPONENT TdmaCs DataServiceControl (Dsc)

Groups GROUP TdmaCs Dsc Provisioned (Prov)

Scope Application

Description TdmaCs/<csIndex> Dsc
This component represents an instance of the Data Service Control (DSC). The DSC represents a layer of the protocol stack for the mobile-side connection to the IWF. It is responsible for call control, AT-command handling, user-data transport, online-command signaling, break signaling, circuit/signal lead transport, and compression negotiation. The DSC is based on the BMI (BSC, MSC, IWF) portion of the IS-135 standard.

Mib TdmaIwf

Common Verbs
Help
List
Display

GROUP TdmaCs Dsc Provisioned (Prov)

Properties Provisioned

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Description	This group contains the provisionable attributes for Data Service Control Asynchronous Data Service portion of the wireless protocol stack used for the calls set up by this particular *TdmaIwfCallServer*.
Mib	TdmaIwf

ATTRIBUTE TdmaCs Dsc k0LI0WindowSize (k0)

Access	Read: All Write: Service
Description	This attribute specifies the maximum size of the DSC logical link 0 window.
Mib	TdmaIwf
Values	Decimal (1..64)
Default	64

ATTRIBUTE TdmaCs Dsc k1LI1WindowSize (k1)

Access	Read: All Write: Service
Description	This attribute specifies the maximum size of the DSC logical link 1 window.
Mib	TdmaIwf
Values	Decimal (1..64)
Default	64

COMPONENT TdmaCs RadioLinkProtocol1 (Rlp1)

Instance	halfRate (half) fullRate (full) doubleRate (double) tripleRate (triple)
Groups	GROUP TdmaCs Rlp1 Provisioned (Prov)
Scope	Application
Description	*TdmaCs/<csIndex> Rlp1/<radio-channel-type>* This component represents an instance of Radio Link Protocol 1 (RLP1), indexed by radio channel type. Valid radio channel types are: ***halfRate***, Half rate channel. ***fullRate***, Full rate channel. ***doubleRate***, Double rate channel. ***tripleRate***, Triple rate channel. Many RLP1 attributes are dependent on the frame rate and frame size, that is dictated by the radio channel type. When a *TdmaIwfCallServer* is added, a *RadioLinkProtocol1* instance is added automatically for each

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possible instance value. The attributes are set to default values, dependent on the radio channel type of the component instance.

Mib	TdmaIwf
Common Verbs	Help List Display Add

GROUP TdmaCs Rlp1 Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the Radio Link Protocol 1 (RLP1) parameters used for the calls set up by this particular *TdmaIwfCallServer*. Changes to these attributes do not affect existing calls.
Mib	TdmaIwf

ATTRIBUTE TdmaCs Rlp1 t1ResponseTimer (t1)

Access	Read: All Write: Service
Description	This attribute specifies the time the receiving Radio Link Protocol (RLP1) entity shall wait for a response from the peer TIA-136-310 (formerly IS-130) application. During the Exchange Information (XID) negotiation, both RLP1 entities (mobile station and IWF) can agree to use a specific value for this timer (T1). The IWF attempts to negotiate to the value specified by this attribute. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (5..20)
Units	seconds
Default	5

ATTRIBUTE TdmaCs Rlp1 t2LinkActivityTimer (t2)

Access	Read: All Write: Service
Description	This attribute specifies the maximum time the receiving Radio Link Protocol (RLP1) entity shall wait for link activity. During the Exchange Information (XID) negotiation, both RLP1 entities (mobile station and IWF) can agree to use a specific value for this timer (T2). The IWF attempts to negotiate to the value specified by this attribute. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf

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Values	Decimal (10..120)
Units	seconds
Default	10

ATTRIBUTE TdmaCs Rlp1 t3PeerAckTimer (t3)

Access	Read: All Write: Service
Description	This attribute specifies the maximum time the receiving Radio Link Protocol (RLP1) entity shall wait for the peer to ACK or NAK data. During the Exchange Information (XID) negotiation, both RLP1 entities (mobile station and IWF) can agree to use a specific value for this timer (T3). The IWF attempts to negotiate to the value specified by this attribute. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (5..20)
Units	seconds
Default	5

COMPONENT TdmaCs V42

Groups	GROUP TdmaCs V42 Provisioned (Prov)
Scope	Application
Description	*TdmaCs/<csIndex> V42* This component represents an instance of ITU-T V.42 error correcting data link protocol. Its attributes specify various default settings for aspects of the V.42 protocol, that may be used for an IWF call for the IWF to PSTN modem link.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaCs V42 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the V.42 protocol used for the calls set up by this particular *IwfCallServer*. Changes to these attributes do not affect existing calls.
Mib	TdmaIwf

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ATTRIBUTE TdmaCs V42 t400DetectTimer (t400)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF waits for an Originator Detection Pattern (ODP) or Answerer Detection Pattern (ADP). ODP/ADP is a series of special bit patterns used during the call setup procedures. If the IWF is the originator of the call, it starts sending ODP patterns and waits for an ADP for the duration of T400 from the answerer at call setup time. If the IWF is the answerer of the call, it waits for an ODP for T400 seconds from the originator and if it receives during that time it sends an ADP pattern to the originator at the call setup time. Since both sides operate with different values of T400 timer, a higher value increases the chance of a successful call setup. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (0.75..2.54)
Units	seconds
Default	0.75

ATTRIBUTE TdmaCs V42 t401AckTimer (t401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF waits for an acknowledgment before retransmitting a frame. Since information about the T401 timer is not carried in the Exchange Identification (XID) negotiations at call setup time, both sides operate with different timer values. The value for T401 depends on many factors, such as propagation delay or frame processing time. A frame is retransmitted up to N400 times if the timer T401 expires before an acknowledgment for a frame is actually received. The performance of the data link layer can be impacted by the value of this timer as retransmissions of frames occur on expiry of timer T401. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (0.50..9.00)
Units	seconds
Default	4.00

ATTRIBUTE TdmaCs V42 t402AckDelayTimer (t402)

Access	Read: All Write: Service

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Description	This attribute specifies the maximum amount of time that the IWF may wait following the receipt of any frame requiring a reply before it initiates transmission of an appropriate reply in order to ensure that the reply frame is received by the remote error-correcting entity prior to expiration of the T401 timer of the remote error-correcting entity. Since information about the T402 timer is not carried in the Exchange Identification (XID) negotiations at call setup, both sides operate with different timer values. If this timer expires, then the reply that would have been returned prior to its expiration is not sent. The performance of the data link layer can be impacted by the value of this timer as retransmissions of frames occur on expiry of timer T401. For better performance, a value of *t402AckDelayTimer* (T402) equal to half the value of *t401AckTimer* (T401) is recommended. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (0.25..4.50)
Units	seconds
Default	2.00

ATTRIBUTE TdmaCs V42 t403IdleProbeTimer (t403)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF allows to elapse without frames being exchanged. The link is permitted to remain idle with no frames being exchanged on the data link. Upon expiry of this timer, the IWF polls its peer for status. Since information about the T403 timer is not carried in the Exchange Identification (XID) negotiations at call setup time, both sides operate with different timer values. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (30..90)
Units	seconds
Default	60

ATTRIBUTE TdmaCs V42 txN401FrameSize (txN401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of octets that can be carried in the information field of an Information (I) frame, Exchange Identification (XID) frame, and a Unnumbered Information (UI) frame from the IWF to the remote entity. The default value is 128 octets, and no XID negotiations required for *txN401FrameSize*. If the value for *txN401FrameSize* value is set to other than 128 octets, then XID frames are exchanged to negotiate

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a value. The value provided for *txN401FrameSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 128 is specified, then the IWF negotiates or attempts to negotiate a value between the 128 (as a minimum) and the given value (as a maximum). If a value less than 128 is specified, then the IWF attempts to negotiate a value between the given value (as a minimum) and 128 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to 128 is recommended.
Changes to this attribute do not affect existing calls.

Mib	TdmaIwf
Values	Decimal (1..255)
Units	octets
Default	128

ATTRIBUTE TdmaCs V42 rxN401FrameSize (rxN401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of octets that can be carried in the information field of an Information (I) frame, Exchange Identification (XID) frame, and a Unnumbered Information (UI) frame from the remote entity to the IWF. The default value is 128 octets, and no XID negotiations are required for *rxN401FrameSize*. If the value set for *rxN401FrameSize* is other than 128, XID frames are exchanged to negotiate a value. The value provided for *rxN401FrameSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 128 is specified, then the IWF attempts to negotiate for a value between 128 (as a minimum) and the given value (as a maximum). If a value less than 128 value is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 128 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to the default is recommended. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (1..255)
Units	octets
Default	128

ATTRIBUTE TdmaCs V42 txKWindowSize (txK)

Access	Read: All Write: Service

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Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the IWF to the remote entity. The default value is 15 frames, and if this value is used then no Exchange Identification (XID) negotiations are required for *txKWindowSize*. If the value set for *txKWindowSize* is other than 15, then XID frames are exchanged to negotiate a value. The value provided for *txKWindowSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 15 is specified, then the IWF attempts to negotiate a value between 15 (as a minimum) and the given value (as a maximum). If a value less than 15 is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 15 (as a maximum). Any value can be specified as long at it is within the provisionable limits. However, a value equal to or close to the default is recommended. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (1..255)
Default	15

ATTRIBUTE TdmaCs V42 rxKWindowSize (rxK)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the remote entity to the IWF. The default value is 15 frames, and if this value is used then no Exchange Identification (XID) negotiations are required for *rxKWindowSize*. If the value set for rxKWindowSize is other than 15, then XID frames are exchanged to negotiate a value. The value provided for *rxKWindowSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 15 is specified, then the IWF attempts to negotiate a value between 15 (as a minimum) and the given value (as a maximum). If a value less than 15 is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 15 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to the default is recommended. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (1..255)
Default	15

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ATTRIBUTE TdmaCs V42 n400RetransLimit (n400)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of times the IWF retransmits a frame upon expiry of *t401AckTimer* before appropriate recovery action is taken. Information about N400 (Retransmission Limit) is not carried in the Exchange Identification (XID) negotiation at call setup time so both sides operate with different N400 values. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (0..255)
Default	1

ATTRIBUTE TdmaCs V42 fcsLength

Access	Read: All Write: Service
Description	This attribute specifies whether a 16 bit or a 32 bit Frame Check Sequence (FCS) will be used for the link between the IWF and the far end DCE. This attribute has one of the following values: ***fcs16***: Use only a 16 bit FCS. ***fcs32Or16***: 32 bit FCS is preferred; Use a 16 bit FCS if needed. ***fcs32Only***: Use only a 32 it FCS; If unavailable, drop the connection.
Mib	TdmaIwf
Values	fcs16 fcs32Or16 fcs32
Default	fcs32Or16

COMPONENT TdmaCs V42Bis

Groups	GROUP TdmaCs V42Bis Provisioned (Prov)
Scope	Application
Description	*TdmaCs/<csIndex> V42bis* This component represents an instance of ITU-T V.42bis data compression protocol. Its attributes specify various default settings for aspects of the V.42bis protocol, which may be used in an IWF call on the mobile station to IWF link or the IWF to PSTN modem link or both.
Mib	TdmaIwf
Common Verbs	Help List Display

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GROUP TdmaCs V42Bis Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the V.42bis data compression protocol parameters used for the calls set up by this particular CallServer. Changes to these attributes do not affect existing calls.
Mib	TdmaIwf

ATTRIBUTE TdmaCs V42Bis p0CompressionDirection (p0)

Access	Read: All Write: Service
Description	This attribute specifies the V.42bis data compression direction to be supported. The value for compression direction is negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P0 (compression direction). During XID negotiation of parameter P0, both sides (IWF and mobile or IWF and PSTN) agree on the compression direction. This attribute has one of the following values: ***noCompression***: No compression is present. ***compInitrResp***: The data sent by the IWF to the other entity is compressed. ***compRespInitr***: The data received by the IWF from the other entity is compressed. ***compBoth***: The data sent and received by the IWF is compressed. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	noCompression compInitrResp compRespInitr compBoth
Default	compBoth

ATTRIBUTE TdmaCs V42Bis p1MaximumCodewords (p1)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of V.42bis codewords the IWF supports. A codeword is a binary number that represents a string of characters in compressed form. V.42bis keeps a dictionary of codewords for each compression direction. Changes to this attribute impact the compression ratio for the encoder (component *TdmaBc V42Bis* attribute *compRatioEncoder*). Changes also impact the amount of memory used (more memory is used when increasing the attribute). The gain in performance obtained from the selection of a larger dictionary may be offset by the larger codeword size needed, and for certain types of data,

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better performance may be obtained by using a smaller dictionary.
Changes to this attribute do not affect existing calls.

Mib TdmaIwf

Values Decimal (512..4096)

Default 512

ATTRIBUTE TdmaCs V42Bis p2MaximumStringSize (p2)

Access Read: All
Write: Service

Description This attribute specifies the maximum number of characters allowed in a string represented by a codeword that the IWF supports. Each codeword in a V.42bis dictionary represents a string of characters. Changes to this attribute impact the compression ratio for the encoder.
Changes to this attribute do not affect existing calls.

Mib TdmaIwf

Values Decimal (6..250)

Default 6

ATTRIBUTE TdmaCs V42Bis actionOnError (actOnErr)

Access Read: All
Write: Service

Description This attribute specifies whether or not V.42bis takes down the call or resets the link when any of the following errors occur:
1.Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size).
2. Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry).
3. Receipt of a codeword representing an empty dictionary entry.
4. Receipt of a reserved command code.
5. Receipt of any other error.
If the value is ***resetLink***, the error corrected connection and V.42bis dictionaries are reset. Some data is lost but the call continues. If the value is ***takeDownCall***, the call is taken down.
Changes to this attribute do not affect existing calls.

Mib TdmaIwf

Values resetLink
takeDownCall

Default resetLink

COMPONENT TdmaCs LogicalProcessor (Lp)

Instance Decimal (0..15)

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Groups	GROUP TdmaCs Lp Operational (Oper)
Scope	Application
Description	*TdmaCs/<csIndex> Lp/n* The *TdmaIwfLogicalProcessor* component represents an instance of a *TdmaIwfLogicalProcessor* that may be linked to this *TdmaIwfCallServer*. A *TdmaIwfBearerChannel* is indirectly linked to this *TdmaIwfLogicalProcessor* by way of the *TdmaIwfFramer* component. This component must be added to the *TdmaIwfCallServer* (and the change activated) prior to adding the *TdmaIwfBearerChannel*(s). This component can only be provisioned for one *TdmaIwfCallServer*.
Mib	TdmaIwf
Common Verbs	Help List Display Add DELete

GROUP TdmaCs Lp Operational (Oper)

Properties	Operational
Description	This group contains operational attributes pertaining to information about *TdmaIwfBearerChannels* and *TdmaIwfLogicalProcessor* associated with a *TdmaIwfCallServer* from a high-level view.
Mib	TdmaIwf

ATTRIBUTE TdmaCs Lp configuredBearerChannels (configBc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of *TdmaIwfBearerChannel* components provisioned for the *TdmaIwfLogicalProcessor* represented by this component.
Mib	TdmaIwf
Values	Decimal (0..124)
Default	No default

ATTRIBUTE TdmaCs Lp activeCalls (actCalls)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of calls currently active on this *LogicalProcessor.*
Mib	TdmaIwf

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Values	Decimal (0..124)
Default	No default

ATTRIBUTE TdmaCs Lp modemsSupported (modemSup)

Access	Read: All Write: Illegal
Description	This attribute indicates if modems are supported with this *TdmaIwfLogicalProcessor*. This attribute has one of the following values: ***yes***: Modems are supported with this *TdmaIwfLogicalProcessor*. ***no***: Modems are not supported with this *TdmaIwfLogicalProcessor*.
Mib	TdmaIwf
Values	yes no
Default	No default

ATTRIBUTE TdmaCs Lp fastConnectSupported (fcSup)

Access	Read: All Write: Illegal
Description	This attribute indicates if the FastConnect functionality is supported with this *TdmaIwfLogicalProcessor*. This attribute has one of the following values: ***yes***: FastConnect is supported with this *TdmaIwfLogicalProcessor*. ***no***: FastConnect is not supported with this *TdmaIwfLogicalProcessor*.
Mib	TdmaIwf
Values	yes no
Default	No default

COMPONENT TdmaCs FastConnect (Fc)

Groups	GROUP TdmaCs Fc FcStatistics (FcStats) GROUP TdmaCs Fc FcProvisioning (FcProv)
Scope	Application

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Description	*TdmaCs/<csIndex> FastConnect* This component represents the TDMA IWF FastConnect functionality for this particular *TdmaIwfCallServer*.
Mib	TdmaIwf
Common Verbs	Help List Display Add DELete

GROUP TdmaCs Fc FcStatistics (FcStats)

Properties	Operational
Description	This group contains operational attributes that measure data about FastConnect calls set up by this particular *TdmaIwfCallServer*.
Mib	TdmaIwf

ATTRIBUTE TdmaCs Fc currentCalls (currCall)

Access	Read: All Write: Illegal
Description	This attribute indicates the active FastConnect calls currently serviced by this particular *TdmaIwfCallServer*.
Mib	TdmaIwf
Values	Decimal (0..2047)
Default	0

ATTRIBUTE TdmaCs Fc callsRequested (callsReq)

Access	Read: All Write: Illegal
Description	This attribute counts the IWF FastConnect call setup requests received at this particular *TdmaIwfCallServer* from the DMS-MTX. The counter wraps to zero when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs Fc callsSetUp (callsSet)

Access	Read: All Write: Illegal
Description	This attribute counts the IWF FastConnect calls successfully set up by this particular *TdmaIwfCallServer*. A call is considered set up when the IWF-

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	Setup-Request message is received, indicating a request for a data communications service, and the IWF has successfully allocated the necessary resources to fulfill the request. The counter wraps to zero when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs Fc callsReleasedNormal (callsRlsdNor)

Access	Read: All Write: Illegal
Description	This attribute counts the IWF FastConnect calls that have completed successfully on this particular *TdmaIwfCallServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs Fc callsReleasedAbnormal (callsRlsdAbnor)

Access	Read: All Write: Illegal
Description	This attribute counts the IWF FastConnect calls that have been released due to error conditions at this particular *TdmaIwfCallServer* or one if its *TdmaIwfBearerChannel*s. The MTX logs can indicate reasons for abnormal call releases. The counter wraps to zero when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

GROUP TdmaCs Fc FcProvisioning (FcProv)

Properties	Provisioned
Description	This group contains provisionable attributes for the TDMA IWF FastConnect feature.
Mib	TdmaIwf

ATTRIBUTE TdmaCs Fc fastConnectAccessCode (fcAc)

Access	Read: All Write: All

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Description	This attribute specifies the digits that must be dialed at the mobile for this call to be identified as a FastConnect call. The dialed digits are used to identify a FastConnect call if the mobile does not support the Direct Async Data Service (DADS) service code. Up to ten access codes can be provisioned.
Mib	TdmaIwf
List of	BCD (1..15)
List Size	10
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - TdmaCs

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COMPONENT TdmaIwfFcBearerChannel (TdmaFcBc)

Instance	csIndex [Decimal (1..10)] bcIndex [Decimal (1..14030)]
Groups	GROUP TdmaFcBc Provision (Prov) GROUP TdmaFcBc Operational (Oper) GROUP TdmaFcBc CustomerIdentifierData (CidData) GROUP TdmaFcBc OsiState (State)
Scope	Application
Description	*TdmaIwfFcBearerChannel/<csIndex>,<bcIndex>* This component represents an individual bearer channel resource for the network (LAN) side of a FastConnect call. If the call type requested is a FastConnect call, the *TdmaIwfCallServer* links one *TdmaIwfBearerChannel* and one *TdmaIwfFcBearerChannel* in a single DMS-MTX InterWorking Function (IWF) call. The instance value *csIndex* is the logical identifier for the DMS-MTX and is used for associating the call server with this *TdmaIwfFcBearerChannel* instance. The instance value *bcIndex* is the logical identifier for the *TdmaIwfFcBearerChannel*. It and the csIndex together define a unique *TdmaIwfFcBearerChannel*. This component is specific to the ***tdmaIwfFastConnect*** feature of the ***tdmaIwf*** application.
Mib	TdmaIwf
Dyn. Subcomp.	COMPONENT TdmaFcBc UpperRelay (Ur)
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP TdmaFcBc Provision (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *TdmaIwfFcBearerChannel* component.
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the link to the Logical Processor that this *TdmaIwfFcBearerChannel* is to use.
Mib	TdmaIwf
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP TdmaFcBc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes concerning the operation of this particular *TdmaIwfBearerChannel* for the current or most recent call.
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the MSC/IWF Interface Protocol (MIP) Message Router (MMR) for an IWF element. This attribute has one of the following values: ***idle***: Startup state of IWF element. ***setup***: This call half is being set up. ***active***: This call half has been connected by both the MTX and IWF and is active. ***releas***e: This call half is being released.
Mib	TdmaIwf
Values	idle setup active release
Default	No default

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ATTRIBUTE TdmaFcBc callType

Access	Read: All Write: Illegal
Description	This attribute indicates the current call type. This attribute has one of the following values: ***analogSpeech***: Analog speech calls. ***digitalSpeech***: Digital speech calls. ***analogPrefSpeech***: Analog preferred speech calls. ***digitalPrefSpeech***: Digital preferred speech calls. ***asyncData***: Asynchronous data service calls. ***g3Fax***: Group 3 fax calls. ***rejected***: Rejected calls. ***stuIII***: STU III calls. ***notUsedYet***: Bearer Channel has not been used in a call yet. ***directAsyncData***: FastConnect or Direct Async Data Service (DADS) calls.
Mib	TdmaIwf
Values	analogSpeech digitalSpeech analogPrefSpeech digitalPrefSpeech asyncData g3Fax rejected stuIII notUsedYet directAsyncData
Default	No default

ATTRIBUTE TdmaFcBc lastResponseCode (respCode)

Access	Read: All Write: Illegal
Description	This attribute indicates the MSC/IWF Interface Protocol (MIP) Message Router (MMR) response code returned for the last call which was active on this particular *TdmaIwfBearerChannel*. This attribute has one of the following values: ***noCause***: No cause available. ***unassignedNumber***: Unallocated or unassigned number. ***noRouteToDest***: No route to destination. ***normalClearing***: The call was terminated normally. ***userBusy***: User busy. ***noResponse***: No carrier. ***userNoAnswer***: No answer from user. ***invalidNumberFormat***: Translation or routing problem. ***unspecNormal***: Normal, unspecified.

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temporaryFailure: Temporary failure.
channelUnavailable: Channel unavailable.
resourceUnavailable: Resources unavailable to handle call.
qosUnavailabled: Specified rate of call unavailable.
serviceUnavailable: Service not implemented.
unimplementedOption: Option not implemented.
invalidCallRefValue: Invalid call reference value.
invalidChannel: Identified channel does not exist.
unspecInvalidMessage: Invalid message, unspecified.
missingMandatoryIe: Missing mandatory information element.
invalidMessageType: Message type not implemented.
incompatibleMessage: Message not compatible with call state.
timerRecovery: Recovery on timer expiration.
protocolError: Protocol error, unspecified.

Mib	TdmaIwf
Values	noCause unassignedNumber noRouteToDest normalClearing userBusy noResponse userNoAnswer invalidNumberFormat unspecNormal temporaryFailure channelUnavailable resourceUnavailable qosUnavailable serviceUnavailable unimplementedOption invalidCallRefValue invalidChannel unspecInvalidMessage missingMandatoryIe invalidMessageType incompatibleMessage timerRecovery unspecProtocolError
Default	No default

ATTRIBUTE TdmaFcBc mateBearerChannel (mateBc)

Access	Read: All Write: Illegal
Description	This attribute contains the name of the mate *TdmaIwfBearerChannel* that this *TdmaIwfBearerChannel* is involved with in the currently active call. In the case of a FastConnect call, this mate is a *TdmaIwfFcBearerChannel*.

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Mib	TdmaIwf
Values	The name of the component
Default	No default

GROUP TdmaFcBc CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	TdmaIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP TdmaFcBc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	TdmaIwf

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ATTRIBUTE TdmaFcBc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	TdmaIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE TdmaFcBc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	TdmaIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE TdmaFcBc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	TdmaIwf
Values	idle active (activ) busy
Default	idle

COMPONENT TdmaFcBc UpperRelay (Ur)

Groups	GROUP TdmaFcBc Ur Operational (Oper) GROUP TdmaFcBc Ur Statistics (Stats)
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> UpperRelay* This component represents the group of measurements for the Upper Relay function established for each half of a DMS-MTX IWF asynchronous data or fax call (internally between the two *TdmaIwfBearerChannel*s involved in a call) from this particular *TdmaIwfBearerChannel* perspective.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaFcBc Ur Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay*.
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc Ur rxBufferSize

Access	Read: All Write: Illegal
Description	This attribute indicates the size of the receive flow control buffer. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	Decimal (0..65535)

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Default	No default

ATTRIBUTE TdmaFcBc Ur txFlowControlState (txFlowControl)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the transmit flow control is active or not. This attribute has one of the following values: ***active***: The transmit flow control is active. ***inactive***: The transmit flow control is inactive. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	active inactive
Default	No default

ATTRIBUTE TdmaFcBc Ur rxFlowControlState (rxFlowControl)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the receive flow control is active or not. This attribute has one of the following values: ***active***: The receive flow control is active. ***inactive***: The receive flow control is inactive. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	active inactive
Default	No default

GROUP TdmaFcBc Ur Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay.*
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc Ur txFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the transmit direction. The counter wraps when it exceeds the maximum value. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaFcBc Ur rxFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the receive direction. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaFcBc Ur unacknowledgedFrames (unackFrm)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of frames sent that have not been acknowledged for this instance of the UpperRelay. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaFcBc Ur cumUnacknowledgedFrames (cUnackFrm)

Access	Read: All Write: Illegal
Description	This attribute is the total number of unacknowledged frames for this instance of the UpperRelay. It is not reset when a new call starts.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - TdmaFcBc

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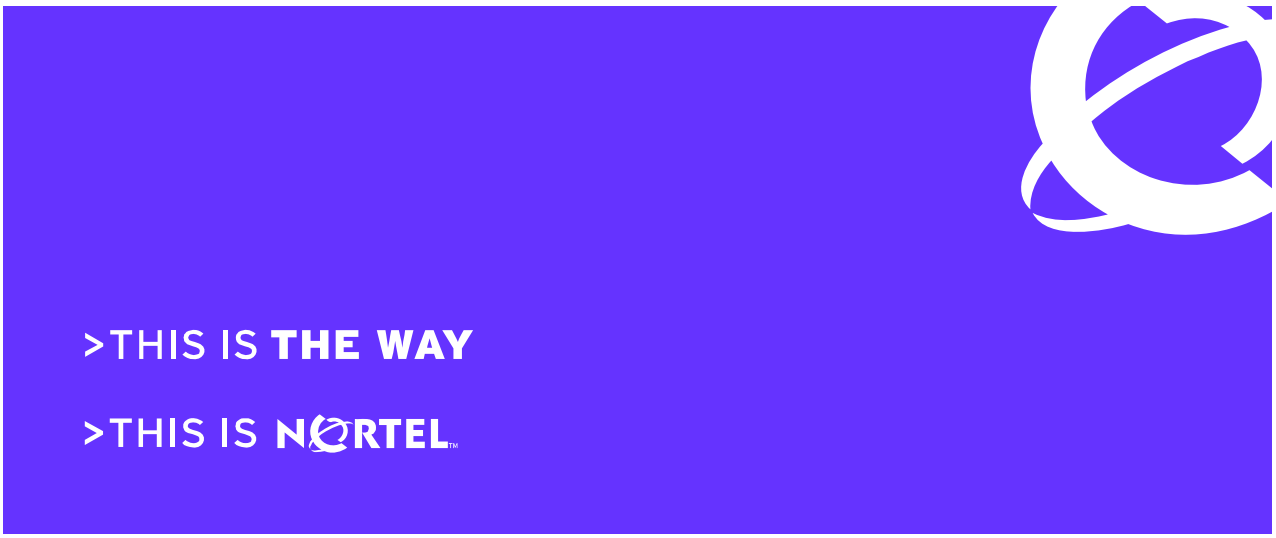

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Time

NN10600-060

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COMPONENT Time (Time)

Groups	GROUP Time Operational (Oper) GROUP Time Provisioned (Prov)
Scope	Device
Description	*Time* The *Time* component provides access to time and date information on this module. It has operational and provisionable attributes and optional provisionable *Server* subcomponents.
Mib	Time
Opt. Subcomp.	COMPONENT Time Server
Common Verbs	Help List Display

GROUP Time Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Time* component.
Mib	Time

ATTRIBUTE Time syncStatus

Access	Read only
Description	This attribute indicates the XNTP (Network Time Protocol) synchronization status of this module. If the value is ***synchronized*** or ***synchronizing***, the *syncSource* attribute indicates the IP address of the main network time server. The values have the following meanings: ***synchronized*** -- The module is synchronized with the network time server. ***unsynchronized*** -- There is no network time server selected as XNTP server for the module to synchronize its time with. ***synchronizing*** -- The module is trying to synchronize with the network time server. ***unknown*** -- The synchronization status of the module is unknown.

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Mib	Time
Values	synchronized unsynchronized synchronizing unspecified
Default	No default

ATTRIBUTE Time moduleTime

Access	Read and write
Description	This attribute indicates the current date and time on this module. The *moduleTime* is obtained by adding an offset to the reference time, which is the Universal Time Coordinated (UTC). When the *moduleTime* is set, it keeps the value even if the card boots. It is the time used for time stamps, such as in alarms and accounting data. The operator resets the current date and time by setting this attribute when *syncStatus* is ***unsynchronized***. Setting this attribute is not allowed if *syncStatus* is ***synchronized*** or ***synchronizing***.
Mib	Time
Values	Time (DHMS)
Default	No default

ATTRIBUTE Time mainServer

Access	Read only
Description	This attribute indicates the IP address of the main network time server that this module synchronizes with. If *syncStatus* is ***unsynchronized,*** then *mainServer* is 0.0.0.0.
Mib	Time
Values	IP address
Default	No default

ATTRIBUTE Time xntpVersion

Access	Read only
Description	This attribute indicates the current protocol version of XNTP running on this module.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Time offset

Access	Read and write

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Description	This attribute specifies the number of minutes to be added to the reference time, which is Universal Coordinated Time (UTC), to obtain the *moduleTime*. It keeps its value even if the card reboots. However, if the node is powered-off for an extended period of time, it may reset to the default value.
Mib	Time
Values	Signed (-720..900)
Units	minutes
Default	0

ATTRIBUTE Time leapSecondsApplied

Access	Read only
Description	This attribute indicates the current number of leap seconds being applied in the system.
Mib	Time
Values	Signed (-1000..1000)
Default	No default

ATTRIBUTE Time syncSources

Access	Read only
Description	This attribute indicates the IP addresses of the network time servers that this module synchronizes with. XNTP uses the clock values of the network time servers to set its *moduleTime*.
Mib	Time
List of	IP address
Default	No default

GROUP Time Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the Time component.
Mib	Time

ATTRIBUTE Time timeDifferenceLimit (tdl)

Access	Read and write
Description	This attribute specifies the allowed difference between the times reported by provisioned time servers. The *timeDifferenceLimit* value is provisioned based on the sensitivity of time dependent applications and the network topology in use. An application more sensitive to time requires consistently close times reported by the time servers. A more elaborate network

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topology may cause the time servers to report a wider range of time differences due to network delays than a simple network. An alarm is issued when the times reported by two time servers differ by more than the specified amount.

The value ***nolimit*** disables the check.

Mib	Time
Values	Decimal (0.001..1000.000) nolimit
Units	msec
Default	nolimit

ATTRIBUTE Time leapSecondDate (lsd)

Access	Read and write
Description	This attribute is provisioned only on systems that require support for processing leap second events. This attribute specifies the UTC date on which the number of leap seconds has or will be changed from *preLeapSeconds* to *postLeapSeconds*; that is, the date on which a leap second is either inserted or deleted. This would normally be on June 30 or December 31. Bulletin C from the International Earth Rotation Service (www.iers.org) announces leap seconds. A leap second is added or removed at the end of a UTC day. That is, if a leap second is inserted, it takes two seconds from 23:59:59 to 0:00:00 instead of one. If a leap second is deleted, time will jump from 23:59:58 to 0:00:00 in one second instead of two. A leap second is applied in the system only when it is detected, which occurs some time after the *leapSecondDate* and can vary depending on the network topology. If a leap second is not detected within 23 hours of the *leapSecondDate*, it will be automatically applied in the system.
Mib	Time
Values	Time (D)
Default	No default

ATTRIBUTE Time preLeapSeconds (preLs)

Access	Read and write
Description	This attribute is provisioned only on systems that require support for processing leap second events. This attribute specifies the number of leap seconds applied in the system

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on or before the UTC date specified by *leapSecondDate*.

preLeapSeconds must differ from *postLeapSeconds* by one.

Mib	Time
Values	Decimal (0..999)
Default	31

ATTRIBUTE Time postLeapSeconds (postLs)

Access	Read and write
Description	This attribute is provisioned only on systems that require support for processing leap second events. This attribute specifies the number of leap seconds applied in the system after the UTC date specified by *leapSecondDate*. *postLeapSeconds* must differ from *preLeapSeconds* by one.
Mib	Time
Values	Decimal (0..999)
Default	32

COMPONENT Time Server

Instance	Decimal (1..10)
Groups	GROUP Time Server Provisioned (Prov) GROUP Time Server OsiState (State) GROUP Time Server Operational (Oper)
Scope	Device
Description	*Time Server/n* The *Server* component represents a single network time server that this module can use for network time synchronization.
Mib	Time
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Time Server Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the provisionable attributes of the *Server* component.
Mib	Time

ATTRIBUTE Time Server ipAddress (ipAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of a network time server that the module will attempt to synchronize with. The value of *ipAddress* must be unique across all *Server* components.
Mib	Time
Values	IP address
Default	No default

ATTRIBUTE Time Server ipStack

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP stack that XNTP uses to communicate with the network time server. If ***ipiFrIpiVc*** is selected, then an *IpiFr* or *IpiVc* component must be provisioned on this module. If ***vrIp*** is selected, then *IP* must be provisioned under the management *VR* on this module.
Mib	Time
Values	ipiFrIpiVc vrIp
Default	ipiFrIpiVc

ATTRIBUTE Time Server stratumLimit

Access	Read and write
Description	This attribute specifies the limit for the stratum reported by the remote time server. Stratum is an integer used by the Network Time Protocol to indicate the topological distance between a client and a time server. A smaller stratum value indicates a better topological distance to a time server. When the stratum reported by the remote time server exceeds this value, alarm 70150015 is raised. A clear alarm is issued when the reported stratum is no longer greater than this value.
Mib	Time
Values	Decimal (1..15)
Default	15

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GROUP Time Server **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Time

ATTRIBUTE Time Server **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Time
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Time Server **operationalState (osiOper)**

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Time
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Time Server usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Time
Values	idle active (activ) busy
Default	idle

GROUP Time Server Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Server* component.
Mib	Time

ATTRIBUTE Time Server xntpVersion

Access	Read only
Description	This attribute indicates the version of XNTP currently in use by the network time server.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Time Server stratum

Access	Read only
Description	This attribute indicates the stratum level of the clock on the network time server.
Mib	Time

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Values	Decimal (0..16)
Default	No default

ATTRIBUTE Time Server poll

Access	Read only
Description	This attribute indicates the time interval for the module to poll the network time server for time synchronization. This value is the log to the base 2 of the poll interval in seconds. In other words, the poll interval in seconds is equal to 2**_poll_.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Time Server pktSent

Access	Read only
Description	This attribute counts the packets sent to the network time server.
Mib	Time
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Time Server pktRecv

Access	Read only
Description	This attribute counts the packets received from the network time server, including the invalid packets.
Mib	Time
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Time Server pktValid

Access	Read only
Description	This attribute counts the valid packets received from the network time server.
Mib	Time
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Time Server timeOffset

Access	Read only

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Description	This attribute indicates the time by which this server's view of time is ahead of the module's view of reference time. Adding this value to the module's view of reference time gives the server's view of time. If the module and the server's view of time differ by more than 1000 seconds, then ***large*** is displayed.
Mib	Time
Values	Signed (-1000000000..1000000000) large
Units	microsec
Default	No default

ATTRIBUTE Time Server delay

Access	Read only
Description	This attribute indicates the roundtrip delay to the time server over the network path between them. If the delay exceeds 100 seconds, then ***large*** is displayed.
Mib	Time
Values	Signed (-100000000..100000000) large
Units	microsec
Default	No default

ATTRIBUTE Time Server status

Access	Read only
Description	This attribute indicates the status of the network time server. ***main*** -- This network time server is working properly, and is the system servers (synchronization sources) of the module. ***primary*** -- This network time server is working properly, and is the primary servers (one of the synchronization sources) of the module ***secondary*** -- This network time server is working properly, but its offset and dispersion is not stable or too high so that it can not be selected as one of the primary time synchronization sources. But if the primary synchronization sources are not available, it can take over the responsibility and become the time synchronization source of the module. ***unused*** -- This network time server is not used as a server (synchronization source) of the module. ***noResponse*** -- This network time server is not responding to the module's time synchronization request. This could be caused by network error or protocol error, or network time server configuration error. ***stratumTooHigh*** -- This network time server has a bad stratum (higher than 15), or its stratum is higher than the module's stratum. ***leapUnsync*** -- This network time server's leap value indicates that this

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	network time server is not synchronized. ***clockUnsync*** -- This network time server's clock values indicates that this network time server is not synchronized. ***rootTooNoisy*** -- This network time server's root dispersion is too high, so that its time stamp is not used. ***peerTooNoisy*** -- The modules dispersion relative to this network time server is too high, so this network time server's time stamp is not used. ***faultStick*** -- This offset of the module relative to this network time server is out of the range or too high, so that it can not be selected as one of the primary time synchronization source.
Mib	Time
Set of	main primary secondary unused noResponse stratumTooHigh leapUnsync clockUnsync rootTooNoisy peerTooNoisy faultStick
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Time

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Trk

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COMPONENT Trunk (Trk)

Instance	Decimal (0..65535)
Groups	GROUP Trk IfEntryProv (IfEntry) GROUP Trk Provisioned (Prov) GROUP Trk Overrides GROUP Trk OsiState (State) GROUP Trk OperationalStatus (OperStatus) GROUP Trk Operational (Oper) GROUP Trk Transport GROUP Trk Statistics (Stats) GROUP Trk SpeedReporting

COLLECTED STATS Trunk

Scope	Network
Description	*Trunk/n* The *Trunk* component provides a connection between two Nortel Networks Multiservice Switches. It controls a protocol stack associated with a logical port on a function processor that provides an interconnection to another node with a *Trunk* component. It requires the existence of the *Routing* component. Note that ***dpnRouting*** also needs to be included in the *featureList* of CP's *LogicalProcessorType* component. Either an *AtmAccess*, *MplsAccess,* or *Unacknowledged* subcomponent

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must be added to provide the underlying link protocol and associated hardware that the *Trunk* will use.

Mib	Trunks
Opt. Subcomp.	COMPONENT Trk UnAcked (UnAcked) COMPONENT Trk AtmAccess (Atm) COMPONENT Trk PathAdmin (Pa) COMPONENT Trk Address (Addr)
Dyn. Subcomp.	COMPONENT Trk LogicalChannel (LCh) COMPONENT Trk PorsStatistics (PorsStats) COMPONENT Trk ForwardingStatistics (FwdStats) COMPONENT Trk DprsStatistics (DprsStats)
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK Trk

Impact	Service
Description	*Lock [-force][-forever] <component name>* This verb causes the specified component to enter the OSI ***shuttingDown*** administrative state. While shutting down, the component continues to provide service to existing clients but rejects any new requests for service. In some cases, locking a component causes all its subcomponents to shut down also. When the component is no longer providing service, it enters the OSI ***locked*** administrative state. **Options:** *-force* If this option is present, service to current clients is terminated and the ***locked*** state is entered immediately (that is, without first going through the ***shuttingDown*** state). Without this option, *Lock* behaves as described above. *-forever* If this option is present, then after service to current clients is terminated and the ***locked*** state is entered, an unlock command is required to get the service into the ***unlocked*** state. Without this option, the service automatically returns to the ***unlocked*** state after five minutes.

GROUP Trk IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.

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Mib	Trunks

ATTRIBUTE Trk ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Trunks
Values	up down testing
Default	up

ATTRIBUTE Trk ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Trunks
Values	Decimal (1..65535)
Default	No default

GROUP Trk Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes provides the parameters used by the layer 3 *Trunk* to *Trunk* staging protocol.
Mib	Trunks

ATTRIBUTE Trk expectedRemoteNodeName (expectedRemote)

Access	Read and write
Description	This attribute specifies the expected node name of the module to which this *Trunk* is connected. Once entered, the node name must correspond to the *Mod nodeName* attribute of the remote node. The *Trunk* end points exchange their node name through the *Trunk* staging protocol. The staged value is validated and the *remoteValidationAction* will be executed for those values not matching the value supplied for this attribute. If this attribute is an empty string, then the comparison is always successful.
Mib	Trunks

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Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Trk remoteValidationAction (validation)

Access	Read and write
Description	This attribute specifies the action to be taken if there is a mismatch between the *expectedRemoteNodeName* attribute and the value received from the remote end. The *remoteValidationAction* determines the action when a value is supplied to the *expectedRemoteNodeName* attribute. If this attribute is provisioned to ***continue*** then upon an unsuccessful validation staging continues, otherwise, if ***disable*** is set then the *Trunk* does not continue to stage but, attempts to stage again after a one minute time out. All unsuccessful validation when the *expectedRemoteNodeName* has been set result in the generation of an alarm.
Mib	Trunks
Values	continue disable
Default	continue

ATTRIBUTE Trk maximumExpectedRoundTripDelay (maxRtd)

Access	Read and write
Description	This is the maximum round trip delay value used by the Trunk staging protocol, in conjunction with *measuredSpeedToIf*, to determine if it has taken too long to successfully stage with a remote Trunk. The value specified must be larger than the *measuredRoundTripDelay* or the Trunk may not successfully stage.
Mib	Trunks
Values	Decimal (1..1500)
Units	msec
Default	1500

ATTRIBUTE Trk idleTimeOut

Access	Read and write
Description	This attribute specifies the Trunk protocol idle time out duration in units of seconds. If the local Trunk does not receive any packets from the link for the period specified by this attribute, the Trunk enters Are You There (AYT) mode for up to two seconds. If the Trunk does not receive any packets from the remote during the AYT mode it will restage; otherwise, it exits AYT mode and continues to provide service.
Mib	Trunks

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Values	Decimal (2..30)
Units	seconds
Default	4

GROUP Trk Overrides

Properties	Provisioned
Description	Theses attribute comprise the set of provisionable override parameters supported by both the *Trunk* and *DpnGateway* components. The attributes are used when reporting operational attributes (used for metric calculations) to the routing system.
Mib	Trunks

ATTRIBUTE Trk overrideTransmitSpeed (ots)

Access	Read and write
Description	This is the overridden value of link speed (bit/s) that, if staged successfully with the remote, is reported to the routing system for metric calculations. A zero indicates that an override value has not been provided and that only the measured value will be reported to the routing system. If this value is changed on a *Trunk* or *DpnGateway* that is enabled, the LOCK and UNLOCK commands must be issued to the component to restage the override with the remote.
Mib	Trunks
Values	Decimal (0; 1000..4294967295)
Units	bit/s
Default	0

ATTRIBUTE Trk overrideRoundTripDelay (ortd)

Access	Read and write
Description	This is the overridden value of link delay (ms) that, if staged successfully with the remote, is reported to the routing system for metric calculations. A zero indicates that an override value has not been provided and that only the measured value will be reported to the routing system. If this value is changed on a *Trunk* or *DpnGateway* that is enabled, the LOCK and UNLOCK commands must be issued to the component to restage the override with the remote.
Mib	Trunks
Values	Decimal (0.0..1500.0)
Units	msec
Default	0.0

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GROUP Trk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Trunks

ATTRIBUTE Trk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Trunks
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Trk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Trunks

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Trk usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Trunks

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Trk availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

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The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Trunks
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

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ATTRIBUTE Trk proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Trunks
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Trk controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Trunks
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Trk alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

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Mib	Trunks
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Trk standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Trunks
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Trk unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

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	The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Trunks
Values	false true
Default	false

GROUP Trk OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Trunks

ATTRIBUTE Trk snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Trunks
Values	up down testing
Default	up

GROUP Trk Operational (Oper)

Properties	Operational
Description	This is the group of operational attributes supported by the *Trunk*.
Mib	Trunks

ATTRIBUTE Trk remoteComponentName (remote)

Access	Read only
Description	This is the component name of the remote end which it has supplied through the *Trunk* staging protocol.
Mib	Trunks
Values	String (1..27, ASCII)
Default	No default

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GROUP Trk Transport

Properties	Operational
Description	This group of attributes contains the set of operational parameters measured and maintained by both the *Trunk* and *DpnGateway* components.
Mib	Trunks

ATTRIBUTE Trk measuredSpeedToIf (spd)

Access	Read only
Description	This attribute indicates the current “transmittable” bandwidth of the underlying facility. For a *Trunk* with a *Unack* subcomponent, and a *DpnGateway* with a *Utp* subcomponent, if a serial port is used, the value is the measured transmit speed of the port; if a channelized port (E1/DS1) is used, the value is the measured transmit speed of the *Channel*. For a *Trunk* with an *AtmAccess* subcomponent, the value is calculated by converting the VCC transmit cell rate to an equivalent bit rate. The VCC transmit cell rate is determined based on the *vccReportingBw* attribute of the *Trunk AtmAccess* component. If *vccReportingBw* has a value of ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***no***, the peak cell rate (PCR) of the VCC, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, is used. If *vccReportingBw* has a value of ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***yes***, the minimum of the PCR, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, and the current cell rate (CCR) of the VCC is used. If *vccReportingBw* has a value of ***acr***, the best measurement of the actual cell rate (ACR) of the VCC is used, which is the minimum of the PCR, the CCR and the actual shaping rate (ASR). For a *Trunk* with an *MplsAccess* subcomponent, the value is the transmit bandwidth reserved on the MPLS transport *Lsp*. For a *DpnGateway* with a *FrAccess* subcomponent, the value indicates the *committedInformationRate* of *FrAccess FrMuxSetup*. A value of zero is displayed when the underlying facility is disabled or the current “transmittable” bandwidth is unknown.
Mib	Trunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

ATTRIBUTE Trk maxTxUnit (mtu)

Access	Read only
Description	This is the maximum transmission unit (byte size) that is supported by the *Trunk* or *DpnGateway* component. This size includes the data and routing headers. A value of zero indicates the MTU has not yet been determined.

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Mib	Trunks
Values	Decimal (0..65535)
Units	bytes
Default	0

ATTRIBUTE Trk measuredRoundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the measured Round Trip Delay (msec) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. The value includes emission, propagation, and queuing delays. A 512 byte data packet is used to perform the measurement. A value of zero is displayed when the link is disabled or the measured Round Trip Delay is unknown.
Mib	Trunks
Values	Decimal (0.0..1500.0)
Units	msec
Default	0.0

GROUP Trk Statistics (Stats)

Properties	Operational
Description	These attributes comprise the statistics collected by the *Trunk* component.
Mib	Trunks

ATTRIBUTE Trk areYouThereModeEntries (ayt)

Access	Read only
Description	This attribute counts the number of times that the component has entered Are You There mode. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk pktFromIf (pkt)

Access	Read only
Description	This attribute counts the number of packets received from the remote module. It does not include the packets received from the interrupting queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks

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Values	Long Integer
Default	No default

ATTRIBUTE Trk trunkPktFromIf (trk)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets (including those from the interrupting queue) received from the remote module. These packets are forwarded to the *Trunk* component. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk trunkPktToIf (trkti)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets (including those through the interrupting queue) transmitted to the remote module. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk discardUnforward (disc)

Access	Read only
Description	This attribute counts the number of packets received from the remote module that have been discarded. It does not include the packets received from the interrupting queue that have been discarded. This counter wraps around to zero when the maximum value is exceeded. Two main reasons that cause this counter to increase are: (1) the remote protocol is not compatible with the local protocol stack or, (2) the packet cannot be forwarded due to a recent loss of connectivity or due to congestion.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk discardTrunkPktFromIf (discTrk)

Access	Read only

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Description	This attribute counts the number of internal trunk protocol packets (including those on the interrupting queue) received from the remote module that have been discarded. This counter wraps around to zero when the maximum value is exceeded. The three main reasons that cause this counter to increase are: (1) the two Trunks are not synchronized, (2) the remote trunk protocol is not the same version as the local protocol, and (3) the remote trunk has restaged.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk intPktFromIf (intPkt)

Access	Read only
Description	This attribute counts the number of packets received on the interrupting queue from the remote module. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk discardIntUnforward (discInt)

Access	Read only
Description	This attribute counts the number of packets received on the interrupting queue from the remote module that have been discarded. This counter wraps around to zero when the maximum value is exceeded. Two main reasons that cause this counter to increment are: (1) the remote protocol is not compatible to the local protocol stack and, (2) the packet cannot be forwarded due to either a recent loss of connectivity or due to congestion.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk stagingAttempts (statt)

Access	Read only
Description	This attribute counts the number of times that the staging protocol has attempted to stage with the remote module. This counter wraps around to zero when the maximum value is exceeded. The main reason that causes this counter to increment is that the local hardware is up but, the local protocol cannot stage with the remote protocol due to a faulty connection.

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If the value is zero, then the local hardware has never enabled successfully.

Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk discardTrunkPktToIf (discTrkti)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets (including those through the interrupting queue) that have been discarded before being transmitted to the remote module. This counter wraps around to zero when the maximum value is exceeded. The main reason that causes this counter to increment is that the trunk can not get sufficient resources to create an internal trunk protocol packet.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk utilization (util)

Access	Read only
Description	This attribute indicates the average trunk utilization. For a *Trunk/n* with an *Unack* subcomponent, the value is the link receive utilization. It is calculated every minute by comparing the number of octets received from the remote module against the value of the *Trunk/n measuredSpeedToIf*. Since the trunk application solely owns the physical link, the maximum link utilization is 100%. For a *Trunk/n* with an *AtmAccess* subcomponent, the value is the VCC(s) transmit utilization. It is calculated every 30 seconds by comparing the number of cells transmitted by *AtmIf Vcc(s)* against the value of the *Trunk/n measuredSpeedToIf*. The VCCs include the trunk VCC indicated by *atmConnection* of *Trunk/n AtmAccess* and the PORS SPO (Short Path Oriented) multiplexing VCC if applicable. The PORS SPO multiplexing VCC only applies to a *Trunk/n* with subcomponents *Pa AtmAccess*, where the *mode* of *AtmAccess* is ***multiplexing***, and the *AtmAccess* is linked to a second VCC indicated by *atmConnection* of *Pa AtmAccess*. Since the trunk application shares a physical link with other applications, the VCCs utilization can exceed 100%, and the value 200% is chosen as the maximum calculated utilization. For a *Trunk/n* with an *MplsAccess* subcomponent, the value is the receive utilization. It is calculated every 30 seconds by comparing the number of octets received from the remote module against the value of the *Trunk/n measuredSpeedToIf*. Since the trunk application shares a physical link

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	with other applications, utilization can exceed 100%, and the value 200% is chosen as the maximum calculated utilization.
Mib	Trunks
Values	Decimal (0..200)
Units	%
Default	No default

ATTRIBUTE Trk pktFromIfByPrio (pktBp)

Access	Read only
Description	This attribute counts the number of packets received by the *Trunk*. It is a vector indexed by the emission priorities (*ep0*, *ep1*, and *ep2*) of the packets. The highest emission priority is *ep0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Vector of	Long Integer
Index	ep0 ep1 ep2
Default	No default

ATTRIBUTE Trk discPktFromIfByPrio (discBp)

Access	Read only
Description	This attribute counts the number of packets received from the remote module that have been discarded. It is a vector indexed by the emission priorities (*ep0*, *ep1* and *ep2*) of the packets. The highest emission priority is *ep0*. These counters wrap around to zero when the maximum value is exceeded. Two main reasons that cause this counter to increment are: (1) the remote protocol is not compatible to the local protocol stack and, (2) the packet cannot be forwarded due to either a recent loss of connectivity or due to congestion.
Mib	Trunks
Vector of	Long Integer
Index	ep0 ep1 ep2
Default	No default

ATTRIBUTE Trk octetFromIfByPrio (octBp)

Access	Read only

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Description	This attribute counts the octets coming from the remote module which are received by the Trunk. It is a vector indexed by the emission priorities (*ep0*, *ep1* and *ep2*) of the packets. The highest emission priority is *ep0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Vector of	Long Integer
Index	ep0 ep1 ep2
Default	No default

GROUP Trk SpeedReporting

Properties	Provisioned
Description	This group of provisionable attributes provides the ability to disable or enable the generation of speed change alarms by the *Trunk* component. It also provides the ability to disable or enable the Dynamic Speed Reporting mechanism.
Mib	Trunks

ATTRIBUTE Trk speedReportingHoldOff (spdHO)

Access	Read and write
Description	This attribute specifies the hold off time for reporting speed increases. When the *measuredSpeedToIf* reaches a level specified by the *speedReportingThresholds* attribute, the value specifies the duration (in units of seconds) for which the *measuredSpeedToIf* must maintain that level before it will be reported.
Mib	Trunks
Values	Decimal (1..1200)
Units	seconds
Default	30

ATTRIBUTE Trk lowSpeedAlarmThreshold (lowAla)

Access	Read and write
Description	This attribute specifies the lower end of the range of normal speeds for this Trunk. If the *measuredSpeedToIf* drops below this value the *Trunk* component generates a SET alarm. When the *measuredSpeedToIf* reaches or exceeds the value of this attribute, the *Trunk* component will generate a CLEAR alarm.
Mib	Trunks
Values	Decimal (0; 1..4294967295)

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Units	bit/s
Default	0

ATTRIBUTE Trk highSpeedAlarmThreshold (hiAla)

Access	Read and write
Description	This attribute specifies the upper end of the range of normal speeds for this Trunk. If the *measuredSpeedToIf* exceeds this value the *Trunk* component generates a SET alarm. When the *measuredSpeedToIf* returns to or falls below the value of this attribute, the *Trunk* component will generate a CLEAR alarm.
Mib	Trunks
Values	Decimal (1..4294967295)
Units	bit/s
Default	4294967295

ATTRIBUTE Trk speedReportingThresholds (spdTh)

Access	Read and write
Description	This attribute controls the behavior of the Dynamic Speed Reporting mechanism. If its value is empty then the mechanism is disabled and neither increases nor decreases are reported. Otherwise, the attribute may contain up to seven threshold levels which are used to control the reporting of speed increases. Speed decreases are always reported immediately. If the *measuredSpeedToIf* increases such that it reaches one of the threshold levels which is greater than the last reported speed, the Trunk starts the *speedReportingHoldOff* timer. If the speed remains above this threshold until the timer expires, the *Trunk* component then reports the *measuredSpeedToIf*; otherwise the increase is not reported.
Mib	Trunks
List of	Decimal (0..4294967295)
Units	bit/s
List Size	7
Default	No default

COLLECTED STATS Trunk

Description	The statistics record generated by the Trunk component.

ATTRIBUTE Trk remoteComponentName (remote)

Description	This attribute is the component name of the remote end which it has supplied through the *Trunk* staging protocol.

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Values String (1..26, ASCII)

ATTRIBUTE Trk measuredSpeedToIfMax

Description This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfMin

Description This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfCurrent

Description This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE Trk measuredRoundTripDelayMax

Description This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.

Values Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayMin

Description This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.

Values Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayCurrent

Description This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.

Values Decimal (0..1500)

ATTRIBUTE Trk porsNormPktFromIf (normPkt)

Description This attribute counts the number of normal priority packets received on the PORS *Trunk* normal priority queue in the last statistics collection interval.

Values Long Integer

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ATTRIBUTE Trk porsNormDiscUnforwardFromIf (normDisc)

Description — This attribute counts the number of normal priority packets discarded from the PORS *Trunk* normal priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsNormOctetFromIf (normOctet)

Description — This attribute counts the number of normal priority bytes received on the PORS *Trunk* normal priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsIntPktFromIf (intPkt)

Description — This attribute counts the number of interrupting priority packets received on the PORS *Trunk* interrupting priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsIntDiscUnforwardFromIf (intDisc)

Description — This attribute counts the number of interrupting priority packets discarded from the PORS *Trunk* interrupting priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk porsIntOctetFromIf (intOctets)

Description — This attribute counts the number of interrupting priority bytes received on the PORS *Trunk* interrupting priority queue in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE Trk remoteComponentName (remote)

Description — This attribute is the component name of the remote end which it has supplied through the *Trunk* or *DpnGateway* staging protocol.

Values — String (1..26, ASCII)

ATTRIBUTE Trk measuredSpeedToIfMax

Description — This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.

Values — Decimal (0..4294967295)

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ATTRIBUTE Trk measuredSpeedToIfMin

Description	This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfCurrent

Description	This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredRoundTripDelayMax

Description	This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayMin

Description	This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayCurrent

Description	This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk fwdPktFromIf (fwdPkt)

Description	This attribute counts the number of forwarding packets received on the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk fwdDiscUnforwardFromIf (fwdDisc)

Description	This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

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ATTRIBUTE Trk fwdOctetFromIf (fwdOctet)

Description	This attribute counts the number of forwarding bytes received on the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk dprsPktFromIfByPrio (dprsPktBp)

Description	This attribute counts the number of DPRS packets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]

ATTRIBUTE Trk dprsDiscPktFromIfByPrio (dprsDiscBp)

Description	This attribute counts the number of DPRS packets received and discarded by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]

ATTRIBUTE Trk dprsOctetFromIfByPrio (dprsOctBp)

Description	This attribute counts the number of DPRS octets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*)

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of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep	[ep0
		ep1
		ep2]
Column	dp	[dp0
		dp1
		dp2
		dp3]

ATTRIBUTE Trk porsPktFromIfByPrio (porsPktBp)

Description: This attribute counts the number of PORS packets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep	[ep0
		ep1
		ep2]
Column	dp	[dp0
		dp1
		dp2
		dp3]

ATTRIBUTE Trk porsDiscPktFromIfByPrio (porsDiscBp)

Description: This attribute counts the number of PORS packets received and discarded by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep	[ep0
		ep1
		ep2]
Column	dp	[dp0
		dp1
		dp2
		dp3]

ATTRIBUTE Trk porsOctetFromIfByPrio (porsOctBp)

Description: This attribute counts the number of PORS octets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission

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priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

COMPONENT Trk UnAcked (UnAcked)

Groups	GROUP Trk UnAcked Provisioned (Prov) GROUP Trk UnAcked OsiState (State)
Scope	Network
Description	*Trunk/n Unacknowledged* The *Unacknowledged* component provides a Layer 2 protocol that adds the minimum of overhead to data on the link. A *Framer* subcomponent is automatically added providing the underlying HDLC framing and associated hardware that the *Unacknowledged* component will use.
Mib	UnackTrunks
Subcomponents	COMPONENT Trk UnAcked Framer
Common Verbs	Help List Display Add DELete

GROUP Trk UnAcked Provisioned (Prov)

Properties	Provisioned
Description	This group of provisionable attributes contains the parameters used by *Unacknowledged*, *Utp,* and *FrAccess* for monitoring link quality.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked maximumErroredInterval

Access	Read and write
Description	This attribute specifies the interval time over which the error threshold (as specified by *receiveErrorSensitivity)* must be continuously exceeded before the *Unacknowledged, Utp,* or *FrAccess* component can be degraded. Once the error interval count exceeds the provisioned value,

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	the *Unacknowledged*, *Utp,* or *FrAccess* component issues an alarm indicating that link quality has degraded, and it disables its parent component. The exception to this is a value of zero, the default, which indicates that the mechanism is completely disabled.
Mib	UnackTrunks
Values	Decimal (0; 1..15)
Units	minutes
Default	0

ATTRIBUTE Trk UnAcked receiveErrorSensitivity

Access	Read and write
Description	This attribute is the allowable error rate beyond which the *Unacknowledged*, *Utp,* or *FrAccess* component can be degraded if it persists for a duration longer than the *maximumErrorInterval*. The threshold is expressed as a percentage of number of errored frames in the last interval per number of frames received in the last interval. The exception to this is a value of zero, which indicates that the mechanism is completely disabled. The configurable values are: 0 = the mechanism is completely disabled 1 = 1/(2**1) 2 = 1/(2**2) 3 = 1/(2**3) : 10 = 1/(2**10)
Mib	UnackTrunks
Values	Decimal (0; 1..10)
Default	3

GROUP Trk UnAcked OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: UnackTrunks

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Trk UnAcked operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: UnackTrunks

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Trk UnAcked usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	UnackTrunks
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Trk UnAcked availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions,

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the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib — UnackTrunks

Set of
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default — No default

ATTRIBUTE Trk UnAcked proceduralStatus (osiProc)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib — UnackTrunks

Set of
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default — No default

ATTRIBUTE Trk UnAcked controlStatus (osiCntrl)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib — UnackTrunks

Set of
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

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Default	No default

ATTRIBUTE Trk UnAcked alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	UnackTrunks
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Trk UnAcked standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

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The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: UnackTrunks

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Trk UnAcked unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: UnackTrunks

Values:
false
true

Default: false

COMPONENT Trk UnAcked Framer

Groups:
GROUP Trk UnAcked Framer Provisioned (Prov)
GROUP Trk UnAcked Framer LinkOptions (Link)
GROUP Trk UnAcked Framer OsiState (State)
GROUP Trk UnAcked Framer Statistics (Stats)
GROUP Trk UnAcked Framer LinkUtilization (Util)
GROUP Trk UnAcked Framer LinkUtilThreshold (UtilThreshold)

COLLECTED STATS Trunk UnAcked Framer

Scope: Device

Description:
Trunk/n Unack Framer

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The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib	UnackTrunks
Common Verbs	Help List Display

GROUP Trk UnAcked Framer **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked Framer **interfaceName**

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	UnackTrunks
Values	Link (Hardware, applicationFramerName)
Default	No default

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GROUP Trk UnAcked Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked Framer framingType

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of framing protocol that will be used for frames transmitted to the link interface and received from the link interface. If the value of this attribute is set to the default *interrupting*, then a Proprietary hdlc protocol is used which allows for voice cells to interrupt transmission of data frames, transmit the voice cell, and then continue transmitting the data frame. If the value of this attribute is set to *hdlc*, then the standard hdlc protocol is used for the sequential transmission of individual frames.
Mib	UnackTrunks
Values	hdlc interrupting
Default	interrupting

ATTRIBUTE Trk UnAcked Framer dataInversion

Access	Read and write
Description	This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed. This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density. Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.
Mib	UnackTrunks
Values	off on
Default	off

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ATTRIBUTE Trk UnAcked Framer **frameCrcType**

Access	Read and write
Description	This attribute defines the type of CRC used. The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used.
Mib	UnackTrunks
Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE Trk UnAcked Framer **flagsBetweenFrames**

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface.
Mib	UnackTrunks
Values	Decimal (1..16)
Default	1

GROUP Trk UnAcked Framer **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked Framer **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — UnackTrunks

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Trk UnAcked Framer operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — UnackTrunks

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Trk UnAcked Framer usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — UnackTrunks

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Values	idle active (activ) busy
Default	idle

GROUP Trk UnAcked Framer **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics data for an unacknowledged Framer component.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked Framer **aborts**

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer **crcErrors**

Access	Read only
Description	This attribute is the total number of frames with CRC errors.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer **lrcErrors**

Access	Read only
Description	This attribute is the total number of frames with LRC errors.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer **nonOctetErrors**

Access	Read only

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Description

This attribute is the total number of frames that were non octet aligned.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer overruns

Access Read only

Description

This attribute is the total number of frames received from the link for which overruns occurred.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer underruns

Access Read only

Description

This attribute is the total number of frames transmitted to the link for which underruns occurred.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer largeFrmErrors

Access Read only

Description

This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer frmModeErrors

Access Read only

Description

This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with

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	the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer **outOfSequenceFrm**

Access	Read only
Description	This attribute is the total number of out of sequence frames in interrupting mode that have been received from the link.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer **repeatedFrm**

Access	Read only
Description	This attribute is the total number of repeated frames (frames with the same sequence number) in interrupting mode that have been received from the link.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer **frmFromIf**

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	UnackTrunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk UnAcked Framer **octetFromIf**

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	UnackTrunks

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Values	Long Integer
Default	No default

GROUP Trk UnAcked Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	UnackTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Trk UnAcked Framer highPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the interrupting data traffic sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with a Transfer Priority (TP) of 11 and/or Emission Priority of 1. The utilization is the average for the last minute.
Mib	UnackTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Trk UnAcked Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available

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bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.

Mib	UnackTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Trk UnAcked Framer **highPrioLinkUtilFromIf**

Access	Read only

Description

This attribute is the utilization of the interrupting data traffic received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with a Transfer Priority (TP) of 11 and/or Emission Priority of 1. The utilization is the average for the last minute.

Mib	UnackTrunks
Values	Decimal (0..100)
Units	%
Default	0

GROUP Trk UnAcked Framer **LinkUtilThreshold (UtilThreshold)**

Properties	Provisioned

Description

This group contains all of the provisioning data required to set the link utilization alarm thresholds. All thresholds are percentages which can take on any value in the range of 0% through 100%. The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the minor alarm threshold is less than the other thresholds and that the major alarm threshold is less than the critical alarm threshold.

Mib	UnackTrunks

ATTRIBUTE Trk UnAcked Framer **minorLinkUtilAlarmThreshold (minor)**

Access	Read and write

Description

This attribute provides the threshold value which defines when a minor alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.

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The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the minor alarm threshold is less than the other thresholds.

Mib UnackTrunks

Values Decimal (0..100)

Units %

Default 75

ATTRIBUTE Trk UnAcked Framer majorLinkUtilAlarmThreshold (major)

Access Read and write

Description

This attribute provides the threshold value which defines when a major alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the major alarm threshold is greater than the minor threshold and less than the critical threshold.

Mib UnackTrunks

Values Decimal (0..100)

Units %

Default 85

ATTRIBUTE Trk UnAcked Framer criticalLinkUtilAlarmThreshold (critical)

Access Read and write

Description

This attribute provides the threshold value which defines when a critical alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the critical alarm threshold is greater than the other thresholds.

Mib UnackTrunks

Values Decimal (0..100)

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Units	%
Default	95

ATTRIBUTE Trk UnAcked Framer linkUtilAlarmStatus (status)

Access	Read and write
Description	This attribute provides control of the generation of link utilization alarms. If the value is ***disabled***, none of the alarms are generated (this is equivalent to setting all of the thresholds to 100%). If the value is ***enabled***, the individual thresholds are handled.
Mib	UnackTrunks
Values	enabled (ena) disabled (dis)
Default	disabled

COLLECTED STATS Trunk UnAcked Framer

Description	The statistics record generated by the Trunk UnAcked Framer component.

ATTRIBUTE Trk UnAcked Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk UnAcked Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk UnAcked Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Trk UnAcked Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Trk UnAcked Framer rxTotalLinkUtil

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Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Trk AtmAccess (Atm)

Groups	GROUP Trk Atm Provisioned (Prov) GROUP Trk Atm Interface GROUP Trk Atm OsiState (State) GROUP Trk Atm UtilThreshold (Util) GROUP Trk Atm Statistics (Stats)

COLLECTED STATS Trunk AtmAccess

Scope	Network
Description	*Trunk/n AtmAccess* The *AtmAc*cess component provides a Layer 2 protocol that adds no overhead to data on the ATM link that it accesses.
Mib	AtmTrunks
Common Verbs	Help List Display Add DELete

GROUP Trk Atm Provisioned (Prov)

Properties	Provisioned
Description	This group of provisionable attributes contains the parameters used by *AtmAccess* for monitoring link quality.
Mib	AtmTrunks

ATTRIBUTE Trk Atm receiveErrorSensitivity

Access	Read and write
Description	This attribute specifies the allowable error rate beyond which the *AtmAccess* component can be degraded if the error rate persists for a duration longer than the *maximumErrorInterval*. The threshold is expressed as a percentage. It is the ratio of the number of errored cells in the last interval over the number of cells received in the last interval. For AAL5, the number of errored cells is converted from *rxFrameDiscard* of *AtmIf Vcc* using the assumption that three ATM cells are used to carry a 128 byte AAL5 frame. The number of received cells is specified by *rxCell* of *AtmIf Vcc*. The configurable values are: 0 = the mechanism is completely disabled 1 = 1/(2**1)

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2 = 1/(2**2)
3 = 1/(2**3)
:
10 = 1/(2**10)

Mib	AtmTrunks
Values	Decimal (0; 1..10)
Default	3

ATTRIBUTE Trk Atm maximumErroredInterval

Access	Read and write
Description	This attribute specifies the interval time over which the error threshold (as specified by *receiveErrorSensitivity)* must be continuously exceeded before the *AtmAccess* component can be degraded. Once the error interval count exceeds the provisioned value, the *AtmAccess* component issues an alarm indicating that link quality has degraded, and it disables its parent component. The exception to this is a value of zero, the default, which indicates that the mechanism is completely disabled.
Mib	AtmTrunks
Values	Decimal (0.0; 0.5; 1.0; 1.5; 2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 6.0; 7.0; 8.0; 9.0; 10.0; 11.0; 12.0; 13.0; 14.0; 15.0)
Units	minutes
Default	0.0

GROUP Trk Atm Interface

Properties	Provisioned
Description	This group of attributes provides the parameters used by the *AtmAccess* component for specifying access to an ATM interface.
Mib	AtmTrunks

ATTRIBUTE Trk Atm atmConnection (ac)

Access	Read and write
Criticality	Component
Description	This attribute specifies the component name of the ATM Layer 2 AAL5 interface that the *AtmAccess* component will use.
Mib	AtmTrunks
Values	Link (Hardware, applicationName)
Default	No default

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ATTRIBUTE Trk Atm bwElastic (bwE)

Access	Read and write
Criticality	Component
Description	This attribute specifies how changes in the bandwidth of the *atmConnection* are handled by the ATM software. If its value is ***no,*** the *atmConnection* will be released by the ATM software if it is incapable of providing the bandwidth specified by the peak cell rate (PCR) defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*. If the value is ***yes,*** the *atmConnection* is not released in this situation, but its bandwidth may be reduced. Also, if this value is ***yes***, the Dynamic Speed Reporting mechanism must be enabled, by provisioning at least one value in the *speedReportingThresholds* attribute of the parent *Trunk* component.
Mib	AtmTrunks
Values	no yes
Default	no

ATTRIBUTE Trk Atm vccReportingBw (vccRepBw)

Access	Read and write
Criticality	Component
Description	This attribute specifies how the bandwidth of the VCC is reported to the parent *Trunk* component. If its value is ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***no***, the peak cell rate (PCR) of the VCC, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd,* is reported. If its value is ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***yes***, the minimum of the PCR, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, and the current cell rate (CCR) of the VCC is reported. If its value is ***acr,*** the best measurement of the actual cell rate (ACR) of the VCC is reported, which is the minimum of the PCR, the CCR and the actual shaping rate (ASR). The value of the reported bandwidth of the VCC is indicated by the *measuredSpeedToIf* attribute of the parent *Trunk* component.
Mib	AtmTrunks
Values	pcr acr
Default	pcr

GROUP Trk Atm OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this

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group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — AtmTrunks

ATTRIBUTE Trk Atm adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — AtmTrunks

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Trk Atm operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib — AtmTrunks

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Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Trk Atm usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AtmTrunks
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Trk Atm availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

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The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	AtmTrunks
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Trk Atm proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

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The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	AtmTrunks
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Trk Atm controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

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The value ***suspended*** indicates that the service has been administratively suspended.

Mib — AtmTrunks

Set of — subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default — No default

ATTRIBUTE Trk Atm alarmStatus (osiAlarm)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — AtmTrunks

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

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ATTRIBUTE Trk Atm standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	AtmTrunks
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Trk Atm unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	AtmTrunks
Values	false true
Default	false

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GROUP Trk Atm UtilThreshold (Util)

Properties	Provisioned
Description	This group contains all of the provisioning data required to set the ATM VCC utilization alarm thresholds. The ATM VCC utilization is indicated by the *lastCalculatedVccUtilization* attribute. All thresholds are percentages which can take on any value in the range of 0% through 200%. The value 200% is used to disable an individual threshold. For values other than 200%, the minor alarm threshold must be less than the other thresholds and the major alarm threshold must be less than the critical alarm threshold.
Mib	AtmTrunks

ATTRIBUTE Trk Atm minorVccUtilAlarmThreshold (minor)

Access	Read and write
Description	This attribute specifies the threshold value at which a minor alarm will be issued based on a sustained average ATM VCC utilization as indicated by the *lastCalculatedVccUtilization* attribute. The Set alarm is issued after 3 minutes of utilization greater than the threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the threshold. The value 200% is used to disable this threshold. For values other than 200%, the minor alarm threshold must be less than the other thresholds.
Mib	AtmTrunks
Values	Decimal (0..200)
Units	%
Default	75

ATTRIBUTE Trk Atm majorVccUtilAlarmThreshold (major)

Access	Read and write
Description	This attribute specifies the threshold value at which a major alarm will be issued based on a sustained average ATM VCC utilization as indicated by the *lastCalculatedVccUtilization* attribute. The Set alarm is issued after 3 minutes of utilization greater than the threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the threshold. The value 200% is used to disable this threshold. For values other than 200%, the major alarm threshold must be greater than the minor threshold and less than the critical threshold.
Mib	AtmTrunks
Values	Decimal (0..200)

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Units	%
Default	85

ATTRIBUTE Trk Atm criticalVccUtilAlarmThreshold (critical)

Access	Read and write
Description	This attribute specifies the threshold value at which a critical alarm will be issued based on a sustained average ATM VCC utilization as indicated by the *lastCalculatedVccUtilization* attribute. The Set alarm is issued after 3 minutes of utilization greater than the threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the threshold. The value 200% is used to disable this threshold. For values other than 200%, the critical alarm threshold must be greater than the other thresholds.
Mib	AtmTrunks
Values	Decimal (0..200)
Units	%
Default	95

ATTRIBUTE Trk Atm vccUtilAlarmStatus (status)

Access	Read and write
Description	This attribute provides control of the generation of ATM VCC utilization alarms. If the value is *disabled*, none of the alarms is generated (this is equivalent to setting all of the thresholds to 200%). If the value is *enabled*, the individual thresholds are handled.
Mib	AtmTrunks
Values	enabled (ena) disabled (dis)
Default	disabled

GROUP Trk Atm Statistics (Stats)

Properties	Operational
Description	This group of attributes contains statistics collected by the *AtmAccess* component.
Mib	AtmTrunks

ATTRIBUTE Trk Atm lastCalculatedVccUtilization (util)

Access	Read only

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Description	This attribute indicates the last calculated receive utilization of the ATM VCC. It is calculated every 30 seconds based on comparing the number of cells received by the *AtmIf Vcc* with the estimated available bandwidth on the *AtmIf Vcc.*
Mib	AtmTrunks
Values	Decimal (0..200)
Units	%
Default	0

ATTRIBUTE Trk Atm lastCalculatedTxVccUtilization (txutil)

Access	Read only
Description	This attribute indicates the last calculated transmit utilization of the ATM VCC. It is calculated every 30 seconds based on comparing the number of cells transmitted by the *AtmIf Vcc* with the estimated available bandwidth on the *AtmIf Vcc.*
Mib	AtmTrunks
Values	Decimal (0..200)
Units	%
Default	0

COLLECTED STATS Trunk AtmAccess

Description	The statistics record generated by the Trunk AtmAccess component.

ATTRIBUTE Trk Atm interfaceName (interface)

Description	This attribute indicates the component name of the local ATM Layer 2 AAL5 interface that the *AtmAccess* component uses.
Values	String (1..45, ASCII)

ATTRIBUTE Trk Atm txCell

Description	This attribute counts the number of cells that have been transmitted to the interface on the *Vcc* in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm txCellClp

Description	This attribute counts the number of cells that have been transmitted to the interface on the *Vcc* with the CLP=1 in the last collection interval.
Values	Long Integer

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Units	cells

ATTRIBUTE Trk Atm txDiscard

Description	This attribute counts the number of cells or frames received from the bus on the *Vcc* that have been discarded (due to congestion or when the *Vcc* interface is disabled) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm txDiscardClp

Description	This attribute counts the number of cells or frames received from the bus on the *Vcc* with the CLP=1 that have been discarded (due to congestion or when the *Vcc* interface is disabled) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm rxCell

Description	This attribute counts the number of cells that have been received from the interface on the *Vcc* in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm rxCellClp

Description	This attribute counts the number of cells that have been received from the interface on the *Vcc* with the CLP=1 in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm rxDiscard

Description	This attribute counts the number of cells or frames received from the interface on the *Vcc* that have been discarded (due to congestion, non-conformance with UPC or AAL reassembly problems) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm rxDiscardClp

Description	This attribute counts the number of cells or frames received from the interface on the *Vcc* with the CLP=1 that have been discarded (due to congestion, non-conformance with UPC or AAL reassembly problems) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm txCellRateMax

Description	This attribute indicates the maximum transmit cell throughput rate of the *Vcc* in the last collection interval.

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Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txCellRateMin

Description	This attribute indicates the minimum transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txCellRateAvg

Description	This attribute indicates the average transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateMax

Description	This attribute indicates the maximum transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateMin

Description	This attribute indicates the minimum transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateAvg

Description	This attribute indicates the average transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateMax

Description	This attribute indicates the maximum receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

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ATTRIBUTE Trk Atm rxCellRateMin

Description	This attribute indicates the minimum receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateAvg

Description	This attribute indicates the average receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateMax

Description	This attribute indicates the maximum receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateMin

Description	This attribute indicates the minimum receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateAvg

Description	This attribute indicates the average receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxTotalVccUtil

Description	This attribute indicates the average total receive *Vcc* utilization computed based on comparing the total number of cells received on the *Vcc* with the estimated available bandwidth in the last collection interval.
Values	Decimal (0..200)
Units	%

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ATTRIBUTE Trk Atm txTotalVccUtil

Description	This attribute indicates the average total transmitted *Vcc* utilization computed based on comparing the total number of cells transmitted on the *Vcc* with the estimated available bandwidth in the last collection interval.
Values	Decimal (0..200)
Units	%

COMPONENT Trk PathAdmin (Pa)

Groups	GROUP Trk Pa Prov GROUP Trk Pa Oper GROUP Trk Pa Adaptation
Scope	Application
Description	*Trunk/n PathAdmin* This component manages all path related activities on behalf of the trunk. This component is provisioned with a maximum count of *LogicalChannels* that it is allowed to create and a maximum percent of the trunk's outgoing bandwidth that it is permitted to allocate to these *LogicalChannels.*
Mib	PorsTrunks
Opt. Subcomp.	COMPONENT Trk Pa AtmAccess (Atm)
Common Verbs	Help List Display Add DELete

GROUP Trk Pa Prov

Properties	Provisioned
Description	This group contains all provisionable attributes relevant to path oriented traffic on a trunk. These attributes provide the maximum number of Logical Channels that are permitted under a *Trunk/n* and the maximum total bandwidth they are allowed to occupy as a percentage of the outgoing trunk bandwidth.
Mib	PorsTrunks

ATTRIBUTE Trk Pa maxLc (maxLc)

Access	Read: All Write: All
Criticality	Process
Description	This attribute indicates the number of Logical Channels (*LCh/n*) supported on this trunk. This attribute is used to allocate memory on the trunk FP for the PORS forwarding tables.Unless running in mapped mode on ATM

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hardware, the *PathAdmin* will add 100 channels to *maxLc* to reduce the chances of allocation clashes. However, you should never see more than *maxLc* channels in use for any extended period of time. On ATM hardware in mapped mode the *PathAdmin* will only add 10 channels to *maxLc* to permit more efficient use of the available VCC space.

The *PathAdmin* may not be able to honor a request for *maxLc* channels. This will happen when the neighbor *PathAdmin* asks for less channels than this *PathAdmin*. To resolve the conflict the *PathAdmin* will always pick the minimum of the two *maxLc* values. This minimum value is called the *negotiatedMaxLc* and can be viewed as an operational parameter of the *PathAdmin*.

Note that in mapped mode on ATM hardware, the value of this attribute provides an upper bound to the number of VCCs that this *Trunk/n PathAdmin* can occupy. It is not a guarantee that *maxLc* VCCs will be available to this *PathAdmin* because the VCC space is a shared resource on the card or port.

Mib	PorsTrunks
Values	Decimal (0..65435)
Default	512

ATTRIBUTE Trk Pa maxReservedBwOut (mrbwout)

Access	Read: All Write: All
Description	This attribute controls the percentage of trunk bandwidth which may be reserved by outgoing path oriented traffic on the trunk. The sum of *requiredBandwidth* attributes for all paths on this trunk must not exceed this attribute. Setting this attribute to zero (0) prevents paths from being established on this trunk. The limit of reserved bandwidth for incoming path oriented traffic is set using the same attribute on the trunk component on the other end of the trunk.This attribute may be changed without the trunk being restaged. If the value is decreased, calls may be bumped as necessary to free up bandwidth. Increasing the value has no impact on existing calls and new calls are able to use the new bandwidth. If this attribute is set to greater than 100%, connectionless traffic is given a minimum of 1Kbit per second for administrative traffic. A value greater than 100% overbooks the trunk bandwidth. By overbooking bandwidth, more calls are able to be established using the unused bandwidth reserved by idle *PLCs*.
Mib	PorsTrunks
Values	Decimal (0..200)
Units	%
Default	50

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ATTRIBUTE Trk Pa trunkSecurity (tsec)

Access	Read: All Write: All
Criticality	Process
Description	This attribute indicates the security level of the trunk. Zero(0) represents the most secure trunk and seven(7) represents the least secure. The path's minimum security requirement is indicated by the *Plc requiredSecurity* attribute, with values identical in range and meaning to this attribute. PORS ensures that the route selected does not contain a trunk whose *PathAdmin trunkSecurity* attribute is numerically greater than the path's *requiredSecurity*.
Mib	PorsTrunks
Values	Decimal (0..7)
Default	0

ATTRIBUTE Trk Pa supportedTrafficTypes (sttyp)

Access	Read: All Write: All
Criticality	Process
Description	This attribute indicates the type of traffic that can be transmitted on the trunk. There are eight(8) possible traffic types, and the trunk can transmit all of them if desired. The ***voice, data*** and ***video*** traffic types are defined, and five(5) other traffic types can be defined by the network administration. This attribute is used in the route selection process to limit the route to trunks that support the traffic type carried by the path. The *requiredTrafficType* attribute of the *PLC* indicates the type of traffic carried on the path.
Mib	PorsTrunks
Set of	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	(voice, data, video, trafficType1, trafficType2)

ATTRIBUTE Trk Pa trunkType (ttyp)

Access	Read: All Write: All
Criticality	Process

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Description	This attribute lists the type of the trunk. There can be up to eight(8) types of trunks. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six(6) remaining types that can be defined by the network administration. The set of allowed trunk types for a path is indicated in the *permittedTrunkType* attribute of the *PLC*. When selecting a route, PORS only chooses trunks whose P*athAdmin trunkType* are in the *permittedTrunkTypes* set of the path.
Mib	PorsTrunks
Values	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	terrestrial

ATTRIBUTE Trk Pa customerParameter (cpar)

Access	Read: All Write: All
Criticality	Process
Description	This attribute indicates the customer defined parameter for the trunk. Its value, a number from zero(0) to seven(7), is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary *PLC* attribute, *requiredCustomerParameter*, also has a value from zero(0) to seven(7). The Route Selector does not consider trunks whose *PathAdmin customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	PorsTrunks
Values	Decimal (0..7)
Default	0

ATTRIBUTE Trk Pa trunkCost (tcost)

Access	Read: All Write: All
Description	This attribute is the cost metric for the trunk. This value is assigned by the network administration to represent the network cost of using this trunk. It can be related to distance, speed, dollars, or any other factor that could be taken into consideration. If the trunkAttributeToMinimize is set to *trunkCost*, PORS finds a route with the smallest sum of the PathAdmin *trunkCost* attribute over all trunks. The trunk cost can be increased or decreased without disrupting the service to the link. If it is increased and

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	the PORS optimization feature is enabled calls will move off this link to lower cost links when possible. If the cost is decreased new calls will be attracted to this link.
Mib	PorsTrunks
Values	Decimal (1..255)
Default	128

ATTRIBUTE Trk Pa overrideTrunkDelay (ovrtd)

Access	Read: All Write: All
Description	This attribute specifies the override value of parent trunk's half round trip delay (propagation delay), which is used by the *PathAdmin* to negotiate the value of *negotiatedTrunkDelay*. A value of zero indicates that an override value has not been provided, and that the measured propagation delay value is used for negotiation.
Mib	PorsTrunks
Values	Decimal (0..1500)
Units	msec
Default	0

GROUP Trk Pa Oper

Properties	Operational
Description	This group contains all operational attributes relevant to path oriented and connectionless bandwidth utilization and path activity on a trunk.
Mib	PorsTrunks

ATTRIBUTE Trk Pa state

Access	Read: All Write: Illegal
Description	This attribute gives the operational state of the *PathAdmin* component. The *PathAdmin* may be ***up, down, goingDown, staging*** or ***downWaitingRestage***.
Mib	PorsTrunks
Values	String (1..80, ASCII)
Default	No default

ATTRIBUTE Trk Pa usedLc (ulc)

Access	Read: All Write: Illegal

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Description	This attribute gives the total number of Logical Channels currently busy on the trunk. When this number reaches *maxLc*, no more paths are allowed to instantiate through this trunk. Note that it is possible for *usedLc* to be less than *maxLc* but for there to be no currently free *LogicalChannels*. This is because a *LogicalChannel* can be in one of several intermediate states between ***free*** and ***busy***.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk Pa negotiatedMaxLc (nmlc)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of *maxLc* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *maxLc* provisionable attributes the smaller of the two is chosen on both sides. This attribute reflects the minimum of these two *maxLc*'s.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk Pa maxReservableBwOut (mrbwo)

Access	Read: All Write: Illegal
Description	This attribute gives the total bandwidth that this *PathAdmin* is allowed to reserve. This number is computed by multiplying the parent trunk's *measuredSpeedToIf* attribute by the *maxReservedBwOut* provisionable attribute of this *PathAdmin*.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk Pa overReservedBwOut (orbwo)

Access	Read: All Write: Illegal
Description	When bumping is required to free up enough bandwidth for a new path there exists a short period of time when both the new path and the soon to be bumped path are occupying the same bandwidth. This means that the total amount of reserved bandwidth will exceed *maxReservableBwOut.*

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When this happens the *unreservedBwOut* attribute will be 0 and the *overReservedBwOut* attribute will be non-zero to indicate by how much we are currently overcommitted. This value should quickly drop back to zero as the bumping starts to clear the lower *holdingPriority* calls.

Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk Pa unreservedBwOut (urbwo)

Access	Read: All Write: Illegal
Description	This attribute gives the total of amount of bandwidth that is still available for reservation by new connections. When this number reaches 0 the *PathAdmin* will no longer admit new connections to the trunk. This number represents available bandwidth in the outward going direction. To determine the inward available bandwidth you must query the *PathAdmin* at the other end of this *Trunk*.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk Pa clashCount (clcnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path setup requests that resulted in an *LCh/n* or *Vcc/x.y* clash. A large value for this number is an indicator of poor performance by the *PathAdmin* in its allocation of *LCh/n* or *Vcc/x.y* components. In general the channels will be allocated in opposite orders at each end of the *Trunk* but this may not always be the case. Note that as the *PathAdmin* runs out of *LCh/n* or *Vcc/x.y* components the number of clashes will increase.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk Pa negotiatedSupportedTrafficTypes (nsttyp)

Access	Read: All Write: Illegal

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Description	This attribute gives the actual value of *supportedTrafficTypes* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *supportedTrafficTypes* provisionable attributes the union of the two is chosen on both sides. This attribute reflects the union of these two *supportedTrafficTypes* 's. It is this union that is advertised to all other nodes in the network and which is used for routing decisions.
Mib	PorsTrunks
Set of	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Trk Pa negotiatedTrunkSecurity (ntsec)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of the *trunkSecurity* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *trunkSecurity* provisionable attributes the larger of the two is chosen on both sides. This attribute reflects the maximum of these two *trunkSecurity*'s.
Mib	PorsTrunks
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Trk Pa negotiatedCustomerParameter (ncpar)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of customerParameter that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s customerParameter provisionable attributes the larger of the two is chosen on both sides. This attribute reflects the maximum of these two customerParameter's.
Mib	PorsTrunks
Values	Decimal (0..7)
Default	No default

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ATTRIBUTE Trk Pa negotiatedTrunkCost (ntcost)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of *trunkCost* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *trunkCost* provisionable attributes the larger of the two is chosen on both sides. This attribute reflects the maximum of these two trunkCost's.
Mib	PorsTrunks
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Trk Pa negotiatedAtmMode (namode)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of *PathAdmin Atm mode* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. This is only applicable to ATM cards since the mode on non ATM hardware is not specified. The ***multiplexing*** mode implies that all voice traffic will be multiplexed onto the *Atm atmConnection Vcc* and all data will be multiplexed onto the *Trunk Atm atmConnection Vcc*. The ***mapping*** mode implies that each unique logical channel will be allocated its own *Vcc*. The mode ***notApplicable*** implies either this is not ATM hardware or that no *Atm* subcomponent exists under this or the peer *PathAdmin*.
Mib	PorsTrunks
Values	multiplexing (mux) mapping (map) notApplicable (na)
Default	No default

ATTRIBUTE Trk Pa negotiatedTrunkDelay (ntdel)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of parent trunk's half round trip delay (propagation delay) that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmins* the larger of the two propagation delays is chosen on both sides. This attribute reflects the maximum of these two propagation delays.
Mib	PorsTrunks
Values	Decimal (0..1500)

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Units	msec
Default	No default

ATTRIBUTE Trk Pa negotiatedTrunkType (nttyp)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of *trunkType* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *trunkType* provisionable attributes the provisioned values are used on both sides. That is, both sides maintain their provisioned value..
Mib	PorsTrunks
Values	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Trk Pa adaptationLevel (adpl)

Access	Read: All Write: Illegal
Description	This attribute indicates the current PORS adaptation level of the parent trunk. The adaptation mechanism is controlled by *Adaptation* group, which is used to alleviate the high utilization condition on the parent trunk. 0 - adaptation is not active. 1 - new calls are prevented from being established over the parent trunk. 2 - some connections starting from the lowest *holdingPriority* attempt to reroute their paths using alternate trunks. 3 - some connections starting from the lowest *holdingPriority* are bumped away from the parent trunk.
Mib	PorsTrunks
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Trk Pa reservedBwOutByHp (rbw)

Access	Read: All Write: Illegal

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Description	This attribute gives the total bandwidth reserved by paths for each of five (5) holding priorities. For example the bandwidth used by *holdingPriority* 0 paths is shown in the left most value.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Replication	Decimal (0..4)
Default	No default

ATTRIBUTE Trk Pa attemptCountByHp (pacnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path instantiation attempts this trunk has processed since its creation. This number includes successful and unsuccessful attempts. This attribute provides five (5) values of this count, one for each path *holdingPriority*.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Replication	Decimal (0..4)
Default	No default

ATTRIBUTE Trk Pa failCountByHp (pfcnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path instantiation failures that have happened since the creation of this trunk. This attribute provides five (5) values of this count, one for each path *holdingPriority*.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Replication	Decimal (0..4)
Default	No default

ATTRIBUTE Trk Pa clearCountByHp (pccnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path clear requests this trunk has processed since its creation. This attribute provides five (5) values of this count, one for each path *holdingPriority*.

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Mib	PorsTrunks
Values	Decimal (0..4294967295)
Replication	Decimal (0..4)
Default	No default

ATTRIBUTE Trk Pa bumpCountByHp (pbcnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path bumping requests this trunk has processed since its creation. This attribute provides 5 values of this count, one for each path *holdingPriority*.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Replication	Decimal (0..4)
Default	No default

GROUP Trk Pa Adaptation

Properties	Provisioned
Description	This group of provisionable attributes controls the PORS adaptive routing mechanism. Adaptation is triggered by high trunk utilization, and is used to alleviate the high utilization condition on the parent *Trunk/n* component. For a *Trunk/n* with *an Unack* subcomponent, the link receive utilization (indicated by *utilization* of *Trunk/n)* is used for triggering adaptation. For a *Trunk/n* with an *AtmAccess* subcomponent, the aggregation of the transmit VCCs utilization (indicated by *utilization* of *Trunk/n)*, VP utilization, and PORT utilization (normal port or IMA port if *Ima* is used) is used for triggering adaptation.
Mib	PorsTrunks

ATTRIBUTE Trk Pa maxAdaptationLevel (maxadpl)

Access	Read: All Write: All
Description	This attribute specifies the maximum adaptation level that the parent trunk can reach. It determines the highest degree of adaptation that can be triggered by high trunk utilization. When the first degree of adaptation is triggered, new calls are prevented from being established over the parent trunk, and the *adaptationLevel* changes to level one (1).

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When the second degree of adaptation is triggered, some connections starting from the lowest *holdingPriority* attempt to reroute their paths using alternate trunks, and the *adaptationLevel* changes to level two (2).

When the third degree of adaptation is triggered, some connections starting from the lowest *holdingPriority* are bumped away from the parent trunk, and the *adaptationLevel* changes to level three (3).

The configurable values are:
0 - The adapation mechanism is disabled.
1 - Only the first degree of adaptation can be triggered.
2 - Up to two degrees of adaptation can be triggered.
3 - Up to three degrees of adaptation can be triggered.

Regardless of its value, the operator command *CLEAR -hotSwap or CLEAR* (without an option) can always be issued on a particular *LCh/n* to cause the entire path to be rerouted if possible or bumped.

Mib PorsTrunks

Values Decimal (0..3)

Default 0

ATTRIBUTE Trk Pa adaptationBandwidth (adpbw)

Access Read: All
Write: All

Description This attribute specifies the amount of bandwidth to be potentially freed up by rerouting connections if possible or freed up by bumping connections on the trunk when the second or third degree of adaptation is triggered.

The *adaptationBandwidth* value is used to determine the number of connections to be rerouted or bumped starting from the lowest *holdingPriority*, such that the total of the chosen connections reserved outgoing bandwidth *requiredTxBandwidth* reaches this *adaptationBandwidth* value.

If its value is greater than the *maxReservableBwOut* of *Trunk/n Pa*, the *maxReservableBwOut* amount of bandwidth is used for rerouting or bumping.

Mib PorsTrunks

Values Decimal (0..4294967295)

Units bit/s

Default 64000

ATTRIBUTE Trk Pa adaptationThreshold (adpth)

Access Read: All
Write: All

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Description

This attribute specifies three utilization thresholds used to trigger the three degrees of adaptation. It is a vector indexed by (*level1*, *level2*, and *level3*).

While the PORS *adaptationLevel* is zero (0),
- if the trunk utilization has exceeded the *level1* value for the period of time specified by the *set* value of *adaptationHoldOffTime*, the first degree of adaptation is triggered. Meanwhile, the *Trunk/n Pa* component generates a SET alarm indicating that the PORS adaptation mechanism is active. The PORS *adaptationLevel* increases to level one (1).

While the PORS *adaptationLevel* is one (1),
- if the trunk utilization has exceeded the *level2* value for the period of time specified by the *set* value of *adaptationHoldOffTime*, the second degree of adaptation is triggered. The PORS *adaptationLevel* increases to level two (2).
- Otherwise, if the trunk utilization has exceeded the *level1* value for an additional period of time specified by the *set* value of *adaptationHoldOffTime*, the PORS *adaptationLevel* remains unchanged.
- Otherwise, if the trunk utilization has subsequently fallen back to a level at or below the *level1* value for the period of time specified by the *clear* value of *adaptationHoldOffTime*, new calls are allowed to be established over the parent trunk. Meanwhile, the *Trunk/n Pa* component generates a CLEAR alarm indicating that the PORS adaptation mechanism is no longer active. The PORS *adaptationLevel* decreases to level zero (0).

While the PORS *adaptationLevel* is two (2),
- if the trunk utilization has exceeded the *level3* value for the period of time specified by the *set* value of *adaptationHoldOffTime*, the third degree of adaptation is triggered. The PORS *adaptationLevel* increases to level three (3).
- Otherwise, if the trunk utilization has exceeded the *level2* value for an additional period of time specified by the *set* value of *adaptationHoldOffTime*, the second degree of adaptation is triggered again, and the PORS *adaptationLevel* remains unchanged.
- Otherwise, if the trunk utilization has subsequently fallen back to a level at or below the *level2* value for the period of time specified by the *clear* value of *adaptationHoldOffTime*, the PORS *adaptationLevel* decreases to level one (1).

While the PORS *adaptationLevel* is three (3),
- if the trunk utilization has exceeded the *level3* value for an additional period of time specified by the *set* value of *adaptationHoldOffTime*, the third degree of adaptation is triggered again, and the PORS *adaptationLevel* remains unchanged.
- Otherwise, if the trunk utilization has subsequently fallen back to a level at or below the *level3* value for the period of time specified by the *clear* value of *adaptationHoldOffTime*, the PORS *adaptationLevel* decreases to level two (2).

For a *Trunk/n* with an *Unack* subcomponent, the link receive utilization (indicated by *utilization* of *Trunk/n*) is monitored against the thresholds.

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Since the trunk application solely owns the physical link, the maximum link receive utilization is 100%. The restrictions on the setting of the three thresholds are:
- when *maxAdaptationLevel* is 1, the value of *(level1)* must be in the range of 0% to 100%.
- when *maxAdaptationLevel* is 2, the values of *(level1* and *level2)* must be the range of 0% to 100%, and the value of *level1* must be less than or equal to the value of *level2*.
- when *maxAdaptationLevel* is 3, the values of (*level1*, *level2*, and *level3*) must be in the range of 0% to 100%, and the value of *level1* must be less than or equal to the value of level2, which must be less than or equal to the value of level3.

For a *Trunk/n* with an *AtmAccess* subcomponent, the aggregation of transmit VCCs utilization (indicated by *utilization* of *Trunk/n*), VP utilization, and PORT utilization (normal port or IMA port if *Ima* is used) is monitored against the thresholds. Since the trunk application shares a physical link with other applications, both the VCCs and VP utilizations can exceed 100%, and the value 200% is chosen as the maximum calculated utilization for VCCs and VP, so all thresholds can take on any value in the range of 0% to 200%. The restrictions on the setting of the three thresholds are:
- when *maxAdaptationLevel* is 2, the value of *level1* must be less than or equal to the value of *level2*.
- when *maxAdaptationLevel* is 3, the value of *level1* must be less than or equal to the value of level2, which must be less than or equal to the value of level3.

Mib	PorsTrunks
Vector of	Decimal (0..200)
Units	%
Index	level1 level2 level3
Default	(level1: 75, level2: 85, level3: 95)

ATTRIBUTE Trk Pa adaptationHoldOffTime (adpho)

Access	Read: All Write: All
Description	This attribute specifies two interval times. It is a vector indexed by (*set clear*). The *set* value specifies the period of time for which the trunk utilization must be above the utilization threshold specified by *adaptationThreshold* before the corresponding degree of adaptation is triggered. The *clear* value specifies the period of time for which the trunk utilization must be at or below the utilization threshold specified by *adaptationThreshold* before the PORS *adaptationLevel* is decreased by one (1).

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Mib	PorsTrunks
Vector of	Decimal (5..60)
Units	minutes
Index	set clear
Default	([2] 30)

COMPONENT Trk Pa AtmAccess (Atm)

Groups	GROUP Trk Pa Atm Prov
Scope	Network
Description	*Trunk/n PathAdmin AtmAccess* This subcomponent is optionally added to the *PathAdmin* component on ATM hardware. Without this subcomponent the *PathAdmin* will transport all Path Oriented traffic as AAL5 encapsulated cells on the *Trunk AtmAccess localConnection* VCC. With this subcomponent added under the *PathAdmin* the *PathAdmin* will operate in one of two modes. These modes are referred to as mapping and multiplexing and the selection of the mode is done by setting the *PathAdmin AtmAccess mode* attribute to either ***mapping*** or ***multiplexing***. When the mode is set to ***mapping***, the *PathAdmin* will create new VCCs for each new *LCh* that it sets up. In mapped mode the CPU usage is normally 0 for a connection and so the ATM FP can support a great many more mapped mode connections than it can multiplexed mode connections. Connections whose *maximumTransmissionUnit* is exactly 45 will use the SPO adaption layer to efficiently fit a single voice frame into a single cell with minimum overhead. All other connections will use the AAL5 adaption layer protocol. When the mode is set to ***multiplexing***, the *PathAdmin* will look at the attribute *atmConnection* which points to a second provisioned ATM VCC. The *PathAdmin* will then multiplex voice frames onto this second VCC using a proprietary Short Path Oriented adaption layer which encapsulates one voice frame into one voice cell with low overhead. The *PathAdmin* will multiplex all non voice traffic over the *Trunk/n AtmAccess atmConnection* VCC using the AAL5 protocol.
Mib	PorsAtmTrunks
Common Verbs	Help List Display Add DELete

GROUP Trk Pa Atm Prov

Properties	Provisioned

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Description	This group of attributes provides the parameters used by the *AtmAccess* component for specifying access to an ATM interface.
Mib	PorsAtmTrunks

ATTRIBUTE Trk Pa Atm atmConnection (ac)

Access	Read and write
Criticality	Process
Description	This attribute specifies the component name of the ATM Virtual Circuit that the *AtmAccess* component will use. The format of the component name is *AtmIf/n Vcc/x.y Nep*
Mib	PorsAtmTrunks
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE Trk Pa Atm mode (mode)

Access	Read and write
Criticality	Process
Description	This attribute specifies the operating mode of the PathAdmin. When set to ***multiplexing*** the *PathAdmin* to multiplex voice calls to the given atmConnection using single cell per voice packet transport. All other calls will be multiplexed using AAL5 over the Trunk's VCC. When set to ***mapping*** the *PathAdmin* will allocate a VCC per *LCh/n*. In ***mapping*** mode the *atmConnection* should not be set. The VCC chosen for a given connection can be seen in the *LCh localConnection* attribute.
Mib	PorsAtmTrunks
Values	multiplexing (mux) mapping (map)
Default	multiplexing

COMPONENT Trk LogicalChannel (LCh)

Instance	Decimal (1..65535)
Groups	GROUP Trk LCh Oper
Scope	Application
Description	*Trunk/n LogicalChannel/n* This component is automatically created when a new path sets up over the *Trunk* and is deleted when that path terminates. An application component name followed by a series of *LogicalChannel* component names followed by an application component name serve to uniquely identify a path. Issuing a *clear* to this component will cause the entire path to collapse and

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all resources to be freed. Normally the end point components will attempt to reroute after a clear and may even reroute over this same trunk.

Mib PorsTrunks

Common Verbs
Help
List
Display

VERB CLEAR Trk LCh

Impact Service

Description

Clear [-hotSwap] <component name>
Clearing an *LCh* (with no options specified) causes the entire path to be abruptly terminated and its resources freed. The end point applications see a disruption in service while their *LC*s attempt to find new routes. It is possible that the new route may go right back over the trunk from which it was cleared. Clearing is normally used in conjunction with a trunk lock. The trunk is locked and its *LCh/n* manually cleared. This is more controlled than to *lock force* a trunk.

Options:
-hotSwap
If this option is present, the entire path is not terminated abruptly. Instead, the end point application sends traffic using the existing path while its *LC* attempts to find an alternate route. If an alternate route is found and a path is established, the data traffic is swapped from the current path to the alternate path, the current path is terminated, and the alternate path becomes the current path. Otherwise, if an alternate route is not found, the existing path continues to be used.

When '*clear -hotSwap*' is issued against an *LCh/n* which is on a ***manual*** or ***forced*** path, the path gets re-setup.

GROUP Trk LCh Oper

Properties Operational

Description This group contains all operational attributes pertaining to the *Logical Channel* component owned by this trunk.

Mib PorsTrunks

ATTRIBUTE Trk LCh nextHop (nhop)

Access
Read: All
Write: Illegal

Description The *nextHop* is the name of the component across the bus which is forwarding packets to us. Inversely the *nextHop* of our *nextHop* component is us. More precisely*, LCh/n* components point to each other across the bus via their *nextHop* attributes. In the case where the next hop is an

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application the *nextHop* attribute will indicate the component name of this application.

Mib PorsTrunks

Values The name of the component

Default No default

ATTRIBUTE Trk LCh setupPriority (sp)

Access Read: All
Write: Illegal

Description This attribute gives the priority at which a path is established. Zero (0) is the highest priority and four (4) is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (or numerically less) than the existing path's *holdingPriority*.

Mib PorsTrunks

Values Decimal (0..4)

Default No default

ATTRIBUTE Trk LCh holdingPriority (hp)

Access Read: All
Write: Illegal

Description This attribute gives the priority that a path holds once it is established. Zero (0) is the highest priority and four (4) is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (or numerically less) than the existing path's *holdingPriority*.

Mib PorsTrunks

Values Decimal (0..4)

Default No default

ATTRIBUTE Trk LCh emissionPriority (ep)

Access Read: All
Write: Illegal

Description This attribute indicates the urgency with which packets on the *LCh*'s path are emitted by this trunk. The *emissionPriority* translates into the trunk's emission queue. Zero (0) indicates the highest *emissionPriority*, while three (3) indicates the lowest. Packets with a higher *emissionPriority* (or

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numerically less) are put on an emission queue which is serviced before a queue which accepts packets of a lower *emissionPriority* and hence experience smaller delays traversing congested trunks.

Mib	PorsTrunks
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Trk LCh discardPriority (dp)

Access	Read: All Write: Illegal
Description	This attribute indicates the importance of the packets on the path. Zero (0) is used for paths carrying the most important traffic, and two (3) is used for paths carrying the least important traffic. In times of congestion, the *discardPriority* is used by packet forwarding on the trunk to determine which packets are discarded first to reduce the load. Packets with a higher *discardPriority* (or numerically less) are discarded after packets with a lower *discardPriority* (or numerically higher).
Mib	PorsTrunks
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Trk LCh requiredTxBandwidth (tbw)

Access	Read: All Write: Illegal
Description	This attribute gives the bandwidth (in bits per second units) reserved by this *LCh/n* for emitting packets on the trunk.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk LCh requiredRxBandwidth (rbw)

Access	Read: All Write: Illegal
Description	This attribute gives the bandwidth (in bits per second units) reserved by this *LCh/n* for receiving packets on the trunk.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s

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Default	No default

ATTRIBUTE Trk LCh mode

Access	Read: All Write: Illegal
Description	This attribute gives the operational mode of the *LogicalChannel* component. It indicates what kind of transport is being performed on the packets in the channel. There are 7 possible values of this attribute as follows: ***unknown*** - not currently in busy state, type of forwarding not determined yet. ***hdlcFrmMux -*** frames are being multiplexed (multiple *LCh/n* on same port or channel) using HDLC encapsulation. ***aal5FrmMux*** - frames are being multiplexed (multiple *LCh/n* on same ATM VCC) using the AAL5 segmentation and recombination protocol. ***spoFrmMux*** - frames are being multiplexed (multiple *LCh/n* on same ATM VCC) using the Short Path Oriented segmentation and recombination protocol. This is a proprietary protocol which encapsulates voice frames into a single ATM cell unlike AAL5 which would require two cells to transport the 45 byte voice frames. ***aal5FrmMap*** - frames are being mapped (a single *LCh/n* per ATM VCC) using the AAL5 segmentation and recombination protocol. AAL5 mapped frames are forwarded by hardware in both directions and require no CPU intervention. ***spoFrmMap*** - frames are being mapped (a single *LCh/n* per ATM VCC) using the Short Path Oriented segmentation and recombination protocol. SPO mapped frames are forwarded by hardware in both directions and require no CPU intervention in all but one special case. In particular CPU is required only if frames are being forwarded to an *LCh/n* whose *mode* is ***spoFrmMux***. ***cellMap*** - ATM cells are being relayed directly over the bus with no segmentation and recombination protocol. The segmentation and recombination is only done at transition points between frame based cards and ATM cell based cards so this hop represents a pure tandem cell hop, ATM card to ATM card. No CPU is required to process these cells.
Mib	PorsTrunks
Values	unknown (unknwn) hdlcFrmMux (hdlcMx) aal5FrmMux (al5Mux) spoFrmMux (spoMux) spoFrmMap (spoMap)

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aal5FrmMap (al5Map)
cellMap (celMap)

Default — No default

ATTRIBUTE Trk LCh maximumTransmissionUnit (mtu)

Access — Read: All
Write: Illegal

Description — This attribute gives the size of the largest frame this service will send. A value of 0 means that the *Mtu* is unknown. A value of 45 or less (but non zero) means that ATM single cell transport will be used wherever possible. Otherwise ATM AAL5 adaption layer transport will be required to handle all frames.

Mib — PorsTrunks

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Trk LCh localConnection (lcon)

Access — Read: All
Write: Illegal

Description — The *localConnection* attribute specifies the name of the connection on the local interface. On ATM hardware this is in the form *AtmIf/n Vcc/x.y.* On non ATM hardware this attribute is empty.

Mib — PorsTrunks

Values — The name of the component

Default — No default

COMPONENT Trk PorsStatistics (PorsStats)

Groups — GROUP Trk PorsStats Operational (Oper)

Scope — Application

Description — *Trunk/n PorsStatistics*
This is a dynamic subcomponent of a *Trunk* which appears when a *PathAdmin* component is provisioned under the *Trunk* supporting interrupting priority queue. It contains statistics associated with PORS traffic for a *Trunk* component.

Mib — Trunks

Common Verbs — Help
List
Display

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GROUP Trk PorsStats Operational (Oper)

Properties	Operational
Description	This operational group provides the PORS Trunks interrupting and normal traffic statistics for operator console display.
Mib	Trunks

ATTRIBUTE Trk PorsStats porsNormPktFromIf (normPkt)

Access	Read only
Description	This attribute counts the number of normal priority packets received on the PORS Trunk normal priority queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats porsNormDiscUnforwardFromIf (normDisc)

Access	Read only
Description	This attribute counts the number of normal priority packets discarded from the PORS Trunk normal priority queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats porsNormOctetFromIf (normOctet)

Access	Read only
Description	This attribute counts the number of normal priority bytes received on the PORS Trunk normal priority queue.This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats porsIntPktFromIf (intPkt)

Access	Read only
Description	This attribute counts the number of interrupting priority packets received on the PORS Trunk interrupting priority queue. This counter wraps around to zero when the maximum value is exceeded.

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Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats porsIntDiscUnforwardFromIf (intDisc)

Access	Read only
Description	This attribute counts the number of interrupting priority packets discarded from the PORS Trunk interrupting priority queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats porsIntOctetFromIf (intOctets)

Access	Read only
Description	This attribute counts the number of interrupting priority bytes received on the PORS Trunk interrupting priority queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats pktFromIfByPrio (pktBp)

Access	Read only
Description	This attribute counts the number of PORS packets received by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

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ATTRIBUTE Trk PorsStats discPktFromIfByPrio (discBp)

Access	Read only
Description	This attribute counts the number of PORS packets received from the remote module that have been discarded. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

ATTRIBUTE Trk PorsStats octetFromIfByPrio (octBp)

Access	Read only
Description	This attribute counts the number of PORS octets received by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

COMPONENT Trk ForwardingStatistics (FwdStats)

Groups	GROUP Trk FwdStats Operational (Oper)
Scope	Application

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Description	*Trunk/n ForwardingStatistics* This is a dynamic subcomponent of a *Trunk* or *DpnGateway* which appears when packet forwarding traffic is used over the *Trunk* or *DpnGateway*. It contains statistics associated with packet forwarding traffic for *Trunks* and *DpnGateways*.
Mib	Trunks
Common Verbs	Help List Display

GROUP Trk FwdStats Operational (Oper)

Properties	Operational
Description	This operational group counts the *Trunk* or *DpnGateway* packet forwarding traffic statistics for operator console display.
Mib	Trunks

ATTRIBUTE Trk FwdStats fwdPktFromIf (fwdPkt)

Access	Read only
Description	This attribute counts the number of forwarding packets received by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk FwdStats fwdDiscUnforwardFromIf (fwdDisc)

Access	Read only
Description	This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk FwdStats fwdOctetFromIf (fwdOctet)

Access	Read only
Description	This attribute counts the number of forwarding bytes received by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.

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Mib	Trunks
Values	Long Integer
Default	No default

COMPONENT Trk DprsStatistics (DprsStats)

Groups	GROUP Trk DprsStats Operational (Oper)
Scope	Application
Description	*Trunk/n DprsStatistics* This is a dynamic subcomponent of a *Trunk* which appears when DPRS traffic is used over the *Trunk*. It contains statistics associated with packet forwarding traffic for *Trunks*.
Mib	Trunks
Common Verbs	Help List Display

GROUP Trk DprsStats Operational (Oper)

Properties	Operational
Description	This operational group counts the *Trunk* or *DpnGateway* packet forwarding traffic statistics for operator console display.
Mib	Trunks

ATTRIBUTE Trk DprsStats pktFromIfByPrio (pktBp)

Access	Read only
Description	This attribute counts the number of DPRS packets received by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

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ATTRIBUTE Trk DprsStats discPktFromIfByPrio (discBp)

Access	Read only
Description	This attribute counts the number of DPRS packets received from the remote module that have been discarded by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

ATTRIBUTE Trk DprsStats octetFromIfByPrio (octBp)

Access	Read only
Description	This attribute counts the number of DPRS octets received by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

COMPONENT Trk Address (Addr)

Instance	String (1..40, ASCII)
Groups	GROUP Trk Addr Prov

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Scope	Application
Description	*Trunk/n Address* This subcomponent is optionally added to the *Trunk* component to specify an NSAP address of a single destination that can be reached through that trunk, or to specify an NSAP address prefix which describes a set of destinations that can be reached through that trunk.
Mib	Trunks
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Trk Addr Prov

Properties	Provisioned
Description	This group of attributes specifies the provisionable characteristics of the *TrkReachableAddress* component.
Mib	Trunks

ATTRIBUTE Trk Addr cost (cost)

Access	Read and write
Description	This attribute specifies a cost of using the trunk to reach a destination or destinations described by *TrkReachableAddress* component. The value is assigned by the network administrator to represent the network cost of using this trunk. It can be related to distance, speed, dollars, or any other factor that could be taken into consideration.
Mib	Trunks
Values	Decimal (0..65435)
Default	200

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Trk

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Trm

NN10600-060

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Language type: U.S. English

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COMPONENT TransportResource (Trm)

Scope	Network
Description	*TransportResource* This component resides on all Nortel Networks Multiservice Switches and is responsible for managing link resources. It acts as an intermediary between a link and all the routing systems that use the link.
Mib	BaseRouting
Dyn. Subcomp.	COMPONENT Trm Link (Lk) COMPONENT Trm LinkGroup (Lg)
Common Verbs	Help List Display

COMPONENT Trm Link (Lk)

Instance	Decimal (1..1023)
Groups	GROUP Trm Lk Operational (Oper) GROUP Trm Lk ForwardingStatistics (FwdStats)
Scope	Network
Description	*Trm Link/<n>* This component is a dynamic subcomponent of *TransportResource*. It has operational attributes only which are stored and maintained by this component for listing links.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Trm Lk Operational (Oper)

Properties	Operational
Description	*Trm Lk/<n> Operational* This group of attributes is used to list links. These links are all registered

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with Transport Resource Manager. They have a status which reflects the current view of the link.

Mib	BaseRouting

ATTRIBUTE Trm Lk status

Access	Read only
Description	This attribute indicates if the inactive link is disabled, joining, waiting to join, or in standby mode. ***inactive*** - The link is known to TRM but is not active. This can mean that it is disabled, or has not yet started to join. ***joining*** - The link has requested to join the routing systems. ***online***- The link is active and has joined one or more routing systems.
Mib	BaseRouting
Values	inactive joining online
Default	No default

ATTRIBUTE Trm Lk throughput

Access	Read only
Description	This attribute indicates the throughput of the link. This value represents a nominal bandwidth available for connection-less traffic, after the maximum reserved for path-oriented traffic has been subtracted from trunk bandwidth. If a trunk speed override is specified, it is used instead. The “throughput” value can be exceeded by connection-less traffic whenever path-oriented traffic is not using it’s reserved bandwidth.
Mib	BaseRouting
Values	Decimal (1..640000000)
Units	kbit/s
Default	No default

ATTRIBUTE Trm Lk maxTxUnit

Access	Read only
Description	This attribute indicates the maximum data unit in bytes of this link. It represents the maximum frame length (including user data and routing headers) that can be sent on the link.
Mib	BaseRouting
Values	Decimal (1..65535)

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Units	bytes
Default	No default

ATTRIBUTE Trm Lk linkComponentName

Access	Read only
Description	This attribute indicates the link's component name. A link is either a trunk or a gateway to another module. The component name may be used to obtain additional information from the link system.
Mib	BaseRouting
Values	The name of the component
Default	No default

ATTRIBUTE Trm Lk delay

Access	Read only
Description	This attribute indicates the round trip delay of the link in milliseconds. This value represents a nominal delay for connection-less traffic. Connection-less traffic is biased away from trunks carrying path-oriented traffic by increasing this value. The value of this attribute is a function of the percentage of reserved path-oriented bandwidth and takes a maximum value of 1500ms for 100% path-oriented trunks. If a delay override is specified, it will be used instead.
Mib	BaseRouting
Values	Decimal (1.0..1500.0)
Units	msec
Default	No default

GROUP Trm Lk ForwardingStatistics (FwdStats)

Properties	Operational
Description	This group of attributes is used to display egress statistics collected by packet forwarding on this link. The statistics can be used to monitor congestion conditions and packet discards on a link.
Mib	BaseRouting

ATTRIBUTE Trm Lk fciSet

Access	Read only
Description	This attribute counts the packets whose FCI bits are set by packet forwarding due to congestion on this link, and when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.

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Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lk overflowAttempts

Access	Read only
Description	This attribute counts the number of times DPRS packet forwarding attempts to overflow packets to another link in a link group due to congestion on this link. It is used only when the *forwardingPolicy* attribute in the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lk pathOverflowAttempts

Access	Read only
Description	This attribute counts the number of times DPRS packet forwarding attempts to overflow packets to another link group due to congestion on the link group of this link. It is used only when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lk discardCongested

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to congestion on this link and when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This attribute is a vector with three entries. Each entry corresponds to a discard priority of the packet. The first entry represents the discard count of packets with discard priority 1, the second entry discard priority 2, and the third entry discard priority 3. Each entry (counter) wraps around to zero when the maximum value is reached.

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Mib	BaseRouting
Vector of	Decimal (0..2147483647)
Index	discardPriority_1 (dp1) discardPriority_2 (dp2) discardPriority_3 (dp3)
Default	No default

COMPONENT Trm LinkGroup (Lg)

Instance	String (1..12, ASCII)
Scope	Network
Description	*Trm LinkGroup /<neighborNodeName>* This component is a dynamic subcomponent of *TransportResource*. It has operational attributes only which are stored and maintained by this component for the purpose of displaying link groups. A link group contains 1 to 4 links, all of which are active. The neighbor node name is the node name provisioned in the *Module* component on the remote node if the link group connects to a Nortel Networks Multiservice Switch. Otherwise it is the remote module node name provisioned in the components of gateways in this link group. Links in a link group can have differing throughputs and round trip delays. If the difference within the set of throughputs, or within the set of delays is significant, some links may not be used. The rule that is applied is that links within 50% of the throughput of the highest throughput link are used for the throughput RCOS. similarly links within 50% of the delay of the lowest delay link are used for the throughput RCOS. As links are added or removed from the link group, the set of links which are used is re-evaluated.
Mib	BaseRouting
Dyn. Subcomp.	COMPONENT Trm Lg Link (Lk) COMPONENT Trm Lg LogicalNetworkNumber (LNN)
Common Verbs	Help List Display

COMPONENT Trm Lg Link (Lk)

Instance	Decimal (1..1023)
Groups	GROUP Trm Lg Lk Operational (Oper) GROUP Trm Lg Lk ForwardingStatistics (FwdStats)
Scope	Network

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Description	*Trm Lg/<neighborNodeName> Link /<linkInstance>* This component is a dynamic subcomponent of *LinkGroup*. It has operational attributes only which are stored and maintained by this component for displaying links in a link group. There are 1 to 4 active links in a link group. A link group object is not created until there is at least one active link in the group. Inactive links are not shown in a link group.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Trm Lg Lk Operational (Oper)

Properties	Operational
Description	*Trm Lk/<n> Operational* This group of attributes is used to list links. These links are all registered with Transport Resource Manager. They have a status which reflects the current view of the link.
Mib	BaseRouting

ATTRIBUTE Trm Lg Lk status

Access	Read only
Description	This attribute indicates if the inactive link is disabled, joining, waiting to join, or in standby mode. ***inactive*** - The link is known to TRM but is not active. This can mean that it is disabled, or has not yet started to join. ***joining*** - The link has requested to join the routing systems. ***online***- The link is active and has joined one or more routing systems.
Mib	BaseRouting
Values	inactive joining online
Default	No default

ATTRIBUTE Trm Lg Lk throughput

Access	Read only
Description	This attribute indicates the throughput of the link. This value represents a nominal bandwidth available for connection-less traffic, after the maximum reserved for path-oriented traffic has been subtracted from trunk bandwidth. If a trunk speed override is specified, it is used instead. The “throughput” value can be exceeded by connection-less traffic whenever path-oriented traffic is not using it’s reserved bandwidth.

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Mib	BaseRouting
Values	Decimal (1..640000000)
Units	kbit/s
Default	No default

ATTRIBUTE Trm Lg Lk maxTxUnit

Access	Read only
Description	This attribute indicates the maximum data unit in bytes of this link. It represents the maximum frame length (including user data and routing headers) that can be sent on the link.
Mib	BaseRouting
Values	Decimal (1..65535)
Units	bytes
Default	No default

ATTRIBUTE Trm Lg Lk linkComponentName

Access	Read only
Description	This attribute indicates the link's component name. A link is either a trunk or a gateway to another module. The component name may be used to obtain additional information from the link system.
Mib	BaseRouting
Values	The name of the component
Default	No default

ATTRIBUTE Trm Lg Lk delay

Access	Read only
Description	This attribute indicates the round trip delay of the link in milliseconds. This value represents a nominal delay for connection-less traffic. Connection-less traffic is biased away from trunks carrying path-oriented traffic by increasing this value. The value of this attribute is a function of the percentage of reserved path-oriented bandwidth and takes a maximum value of 1500ms for 100% path-oriented trunks. If a delay override is specified, it will be used instead.
Mib	BaseRouting
Values	Decimal (1.0..1500.0)
Units	msec
Default	No default

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GROUP Trm Lg Lk ForwardingStatistics (FwdStats)

Properties	Operational
Description	This group of attributes is used to display egress statistics collected by packet forwarding on this link. The statistics can be used to monitor congestion conditions and packet discards on a link.
Mib	BaseRouting

ATTRIBUTE Trm Lg Lk fciSet

Access	Read only
Description	This attribute counts the packets whose FCI bits are set by packet forwarding due to congestion on this link, and when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lg Lk overflowAttempts

Access	Read only
Description	This attribute counts the number of times DPRS packet forwarding attempts to overflow packets to another link in a link group due to congestion on this link. It is used only when the *forwardingPolicy* attribute in the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lg Lk pathOverflowAttempts

Access	Read only
Description	This attribute counts the number of times DPRS packet forwarding attempts to overflow packets to another link group due to congestion on the link group of this link. It is used only when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)

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Default	No default

ATTRIBUTE Trm Lg Lk discardCongested

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to congestion on this link and when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This attribute is a vector with three entries. Each entry corresponds to a discard priority of the packet. The first entry represents the discard count of packets with discard priority 1, the second entry discard priority 2, and the third entry discard priority 3. Each entry (counter) wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Vector of	Decimal (0..2147483647)
Index	discardPriority_1 (dp1) discardPriority_2 (dp2) discardPriority_3 (dp3)
Default	No default

COMPONENT Trm Lg LogicalNetworkNumber (LNN)

Instance	Decimal (0..2047)
Groups	GROUP Trm Lg LNN Operational (Oper)
Scope	Network
Description	*Trm Lg/<neighborNodeName> LNN /<logical network number>* This component is a dynamic subcomponent of *LinkGroup*. It has operational attributes only which are stored and maintained by this component for displaying address plans supported over this link group. A logical network number (which is used as an instance to this component) uniquely identifies an address plan and its traffic in a network.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Trm Lg LNN Operational (Oper)

Properties	Operational
Description	*Trm Lg/<neighborNodeName> LNN/<logical network number> Operational* This group of attributes is the information associated with an address plan.
Mib	BaseRouting

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ATTRIBUTE Trm Lg LNN linkType

Access	Read only
Description	This attribute indicates how the LNN is transported over the link group. It can be one of three types: *trunk* - the LNN is supported by Topology over a link between two Nortel Networks Multiservice Switches. *internal gateway* - the LNN is supported by an address plan (but not Topology) over a link between two Nortel Networeks Multiservice Switches. *external gateway* - the LNN is supported by an address plan (but not Topology) over a link between a Nortel Networks Multiservice Switch and a node that is not a Nortel Networks Multiservice Switch.
Mib	BaseRouting
Values	trunk internalGateway externalGateway
Default	No default

ATTRIBUTE Trm Lg LNN addressPlanComponentName (addrPlanCompName)

Access	Read only
Description	This attribute indicates the component name of the address plan which owns the logical network number of this component.
Mib	BaseRouting
Values	The name of the component
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Trm

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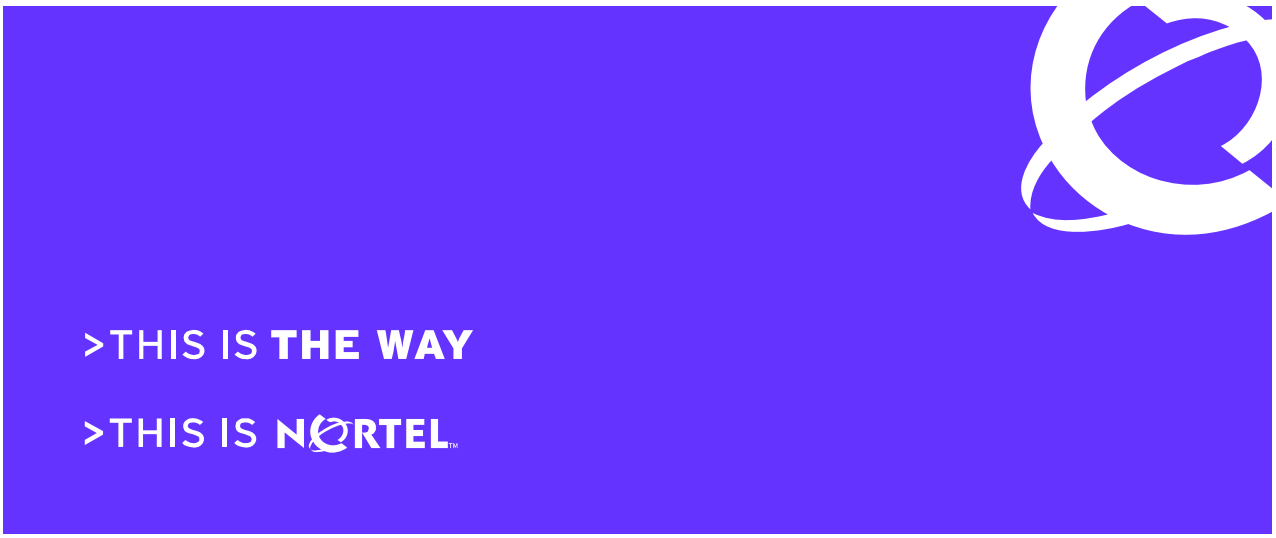

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vct

NN10600-060

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Document issue: 7.2S1
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Type: NTP
Language type: U.S. English

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COMPONENT VcTester (Vct)

Instance	Decimal (1..16)
Groups	GROUP Vct Provisioned (Prov)
Scope	Application
Description	This is the VcTester: a tool designed to test the Passport Virtual Circuit System (vcs)..
Mib	VcTester
Subcomponents	COMPONENT Vct DataNetworkAddress (Dna)
Opt. Subcomp.	COMPONENT Vct DirectCall (Dc)
Dyn. Subcomp.	COMPONENT Vct Vc COMPONENT Vct Vcfr
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vct Provisioned (Prov)

Properties	Provisioned
Description	This group provides the set of parameters for theVcTester component
Mib	VcTester

ATTRIBUTE Vct logicalProcessor (lp)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the logical processor on which the VcTester will run
Mib	VcTester
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Vct vcName (vcn)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of vc (fvc or gvc) which will be used by VcTester.
Mib	VcTester
Values	gvc fvc
Default	gvc

COMPONENT Vct DataNetworkAddress (Dna)

Groups	GROUP Vct Dna Address GROUP Vct Dna OutgoingOptions GROUP Vct Dna IncomingOptions GROUP Vct Dna CallOptions
Scope	Application
Description	*Fruni/n Dna* This is the description of the generic application *Dna* component. It includes the superset of all attributes which may apply to a *Vc*. Particular applications will typically offer only a subset of these attributes by providing a definition of their own *Dna* subcomponent.
Mib	VcTester
Opt. Subcomp.	COMPONENT Vct Dna ClosedUserGroup (Cug) COMPONENT Vct Dna HuntGroupMember (HgM)
Common Verbs	Help List Display

GROUP Vct Dna Address

Properties	Provisioned
Description	*Address* group contains attributes common to all *Dna's*. Every *Dna* used in

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	the network is defined with this group of 2 attributes. String of address digits is complemented by type of address and Npi. These attributes are used to interpret format of the address digits.
Mib	VcTester

ATTRIBUTE Vct Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	VcTester
Values	x121 e164
Default	x121

ATTRIBUTE Vct Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	*Dna* attribute contains digits which form unique identifier of the customer interface. It can be compared (approximation only) to telephone number where phone number identifies unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	VcTester
Values	BCD (1..15)
Default	No default

GROUP Vct Dna OutgoingOptions

Properties	Provisioned
Description	*OutgoingOptions* group defines call options of a *Dna* for calls which are made out of the interface represented by *Dna*. All these options are not used for calls arriving to the interface represented by *Dna*.
Mib	VcTester

ATTRIBUTE Vct Dna outCalls (ouc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) can be made using this particular *D*na. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute

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corresponds to the ITU-T 'Outgoing Calls Barred' feature for *Dnas* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.

Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna outNormalCharge (onc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing normal charged calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna outReverseCharge (orc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing reverse charged calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, outCalls is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna outForceReverseCharge (ofr)

Access	Read and write
Description	This attribute specifies whether to force outgoing reverse charged calls. This attribute, if set to a value of ***yes*** forces reverse charging on all outgoing calls (from the DTE to the network) using this particular *Dna* unless the caller specifies a NUI in which case the call is charged to the NUI. If set to a value of ***no*** then reverse charging is not forced for outgoing

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	calls. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.This attribute must be semantically consistent with the corresponding attribute, *outReverseChargeCalls*.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna outNormalPriority (onp)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing normal priority calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***. This option can be also included in X.25 signaling, in such case it will be overruled.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna outHighPriority (ohp)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing high priority calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***. This option can be also included in X.25 signaling, in such case it will be overruled.
Mib	VcTester
Values	disallowed allowed
Default	allowed

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ATTRIBUTE Vct Dna outDefaultPriority (odf)

Access	Read and write
Description	This attribute, if set to ***normal*** indicates that the default priority for outgoing calls (from the DTE to the network) using this particular *Dna* is normal priority - if the priority is not specified by the DTE. If this attribute is set to ***high*** then the default priority for outgoing calls using this particular *Dna* is high priority. It can be overridden by the discardPriority under DLCI Direct Call subcomponent. This option can be also included in X.25 signaling, in such case it will be overruled.
Mib	VcTester
Values	normal high
Default	normal

ATTRIBUTE Vct Dna outIntl (oic)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing international calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls are allowed. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna outFsRestrictedResponse (ofrc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing fast select calls (from the DTE to the network) with a restricted response can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by

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	the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna outFsUnrestrictedResponse (ofu)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing fast select calls (from the DTE to the network) with an unrestricted response can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna outPathSensitivitySignal (oss)

Access	Read and write
Description	This is the sensitivity signaling. If this attribute is set to ***allowed***, the signaled value on sensitivity will be used.
Mib	VcTester
Values	allowed disallowed
Default	disallowed

ATTRIBUTE Vct Dna outDefaultPathReliability (opr)

Access	Read and write
Description	This attribute specifies the default class of routing for reliability routing for all outgoing calls (from the DTE to the network) using this particular *Dna*. The chosen default class of routing applies to all outgoing calls established using this *Dna*, and applies to the packets travelling in both directions on all outgoing calls (local to remote, and remote to local). For incoming calls, the default class of routing is chosen by the calling party (as opposed to DPN, where either end of the call can choose the default routing class). This attribute, if set to a value of ***normal***, indicates that the default class of

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routing is normal reliability routing. If set to a value of ***high***, then the default class of routing is high reliability routing.

High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the *Vc* handles the duplication and disordering to ensure that packets are delivered to the DTE properly.

For the Frame Relay service, duplication of packets is not desired, in which case, ***normal*** reliability may be chosen as the preferred class of routing.

Mib	VcTester
Values	normal high
Default	high

ATTRIBUTE Vct Dna outPathReliabilityOverRide (oro)

Access	Read and write
Description	If outReliabilityOverRide set in the call request, the called end will use the calling end provisioning data on reliability to override his provisioning data.
Mib	VcTester
Values	yes no
Default	no

ATTRIBUTE Vct Dna outPathReliabilitySignal (ores)

Access	Read and write
Description	*outPathReliabilitySignal* is reliability routing signaling. If this attribute is set to ***allowed***, the signaled value on reliability will be used.
Mib	VcTester
Values	allowed disallowed
Default	disallowed

ATTRIBUTE Vct Dna outAccess (oua)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that outgoing calls

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(from the DTE to the network) to the open (non-CUG) part of the network are permitted. It also permits outgoing calls to DTE's that have Incoming Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Outgoing Access' feature for *Dna's* in that outgoing access is granted if this attribute is set to a value of ***allowed***.

Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna defaultTransferPriority (dtp)

Access	Read and write
Description	This attribute specifies the default transfer priority to network for all outgoing calls using this particular *Dna*. It is overRidden by the *transferPriority* provisioned in the *DLCI* Direct Call sub-component. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput. The default of *defaultTransferPriority* is ***normal.***
Mib	VcTester
Values	normal high
Default	normal

ATTRIBUTE Vct Dna transferPriorityOverRide (tpor)

Access	Read and write
Description	When this attribute is set to ***yes***, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer

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priority.

For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority*.

The default of *transferPriorityOverRide* is ***no***.

Mib	VcTester
Values	yes no
Default	no

GROUP Vct Dna IncomingOptions

Properties	Provisioned
Description	*IncomingOptions* defines set of options for incoming calls. These options are used for calls arriving to the interface represented by *Dna*. For calls originated from the interface, *IncomingOptions* attributes are not used.
Mib	VcTester

ATTRIBUTE Vct Dna incCalls (inc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for *Dna's* in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incHighPriorityReverseCharge (ihp)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming high priority, reverse charged calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***,then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute, together with *the incNormalPriorityReverseChargeCalls* attribute corresponds to the ITU-T 'Reverse Charging Acceptance' feature for *Dna's* in that

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reverse charged calls are accepted if both attributes are set to a value of ***allowed***.
This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.

Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incNormalPriorityReverseCharge (inp)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming normal priority, reverse charged calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute, together with th*e incHighPriorityReverseChargeCalls* attribute corresponds to the ITU-T 'Reverse Charging Acceptance' feature for *Dna's* in that reverse charged calls are accepted if both attributes are set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incIntlNormalCharge (iin)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming international normal charged calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to/from the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls (also normal charged) are allowed. This attribute is ignored if the corresponding attribute, ***incCalls*** is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

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ATTRIBUTE Vct Dna incIntlReverseCharge (iir)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming international reverse charged calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to/from the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls (also normal charged) are allowed. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incFastSelect (ifs)

Access	Read and write
Description	This attribute specifies whether fast select calls may be received. This attribute, if set to a value of ***allowed*** indicates that incoming fast select calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Fast Select Acceptance' feature for *Dnas* in that incoming fast select calls are accepted if this attribute is set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna incSameService (iss)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls from the same service type (eg: X.25, ITI, SNA) (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester

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Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incChargeTransfer (ict)

Access	Read and write
Description	This attribute, if set to a value of ***yes*** indicates that the charges for incoming normal charged calls from a DTE with the same DNIC (calls from the network to the DTE) will be transferred to the called DTE. If set to a value of ***no***, then charges will not be transferred. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna incAccess (ina)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTE's that have Outgoing Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Incoming Access' feature for *Dnas* in that incoming access is granted if this attribute is set to a value of ***allowed***.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

GROUP Vct Dna CallOptions

Properties	Provisioned
Description	*CallOptions* group defines additional options for calls not related directly to direction of a call.
Mib	VcTester

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ATTRIBUTE Vct Dna serviceCategory (cat)

Access	Read and write
Description	This attribute is assigned for each different type of service within which this *Dna* is configured. It is placed into the Service Category attribute in the accounting record by both ends of the *Vc*.
Mib	VcTester
Values	gsp x25 enhancedIti ncs mlti sm ici dsp3270 iam mlhi term3270 iti bsi hostIti x75 hdsp3270 api3201 sdlc snaMultiHost redirectionServ trSnaTpad offnetNui gasServer vapServer vapAgent frameRelay ipiVc gvcIf
Default	frameRelay

ATTRIBUTE Vct Dna packetSizes (pks)

Access	Read and write
Description	This attribute indicates the allowable packet sizes supported for call setup using this *Dna*. ITU-T recommends that packet size ***128*** always be supported. Attributes defaultRecvFrmNetworkPacketSize and defaultSendToNetworkPacketSize are related to this attribute.

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Mib	VcTester
Set of	16 32 64 128 256 512 1024 2048 4096
Default	(128, 256, 512)

ATTRIBUTE Vct Dna defaultRecvFrmNetworkPacketSize (rps)

Access	Read and write
Description	This attribute indicates the default local receive packet size from network to DTE for all calls using this particular *Dna*. Attribute packetSizes has to be set with corresponding value.
Mib	VcTester
Values	16 32 64 128 256 512 1024 2048 4096
Default	128

ATTRIBUTE Vct Dna defaultSendToNetworkPacketSize (sps)

Access	Read and write
Description	This attribute indicates the default local send packet size from DTE to network for all calls using this particular *Dna*. Attribute packetSizes has to be set with corresponding value.
Mib	VcTester
Values	16 32 64 128 256 512 1024

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2048
4096

Default 128

ATTRIBUTE Vct Dna defaultRecvFrmNetworkThruputClass (drt)

Access Read and write

Description This attribute indicates the default receive throughput class for all calls using this particular *Dna*.

Mib VcTester

Values Decimal (3..15)

Default 10

ATTRIBUTE Vct Dna defaultSendToNetworkThruputClass (dst)

Access Read and write

Description This attribute indicates the default send throughput class for all calls using this particular *Dna*.

Mib VcTester

Values Decimal (0..15)

Default 10

ATTRIBUTE Vct Dna defaultRecvFrmNetworkWindowSize (rws)

Access Read and write

Description This attribute indicates the default number of data packets that can be received by the DTE from the DCE before more packets can be received. This view is oriented with respect to the DTE.

Mib VcTester

Values Decimal (1..7)

Default 2

ATTRIBUTE Vct Dna defaultSendToNetworkWindowSize (sws)

Access Read and write

Description This attribute indicates the number of data packets that can be transmitted from the DTE to the DCE and must be acknowledged before more packets can be transmitted.

Mib VcTester

Values Decimal (1..7)

Default 2

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ATTRIBUTE Vct Dna packetSizeNegotiation (psn)

Access	Read and write
Description	This attribute, if set to ***local*** indicates that packet sizes can be negotiated locally at the interface irrespective of the remote interface. If set to ***endToEnd***, then local negotiation is not permitted and packet sizes are negotiated between both ends of the VC.
Mib	VcTester
Values	endToEnd local
Default	endToEnd

ATTRIBUTE Vct Dna cugFormat (cft)

Access	Read and write
Description	This attribute specifies which cug format is used when DTE signals CUG indices, basic or extended. This attribute, if set to ***extended*** indicates that the DTE signals and receives CUG indices in extended CUG format. If set to a value of ***basic***, then the DTE signals and receives CUG indices in the basic CUG format.
Mib	VcTester
Values	basic extended
Default	basic

ATTRIBUTE Vct Dna cug0AsNonCugCall (cnc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that when a CUG index of 0 is signaled in a call request packet, the call is treated as a non-CUG call. If this attribute is set to ***disallowed***, then a CUG index of 0 is treated as an index, and an attempt is made to find the particular CUG corresponding with the *Dna*.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna signalPreferentialCugToLink (spc)

Access	Read and write
Description	This attribute, if set to ***no***, indicates that, at the destination (called) DTE, when a CUG call is received using the called DTE's preferential CUG, the preferential CUG's index is not signaled to the called DTE in the incoming

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call request packet. Otherwise, the preferential CUG's index is signaled to the link in the incoming call request packet.

Mib VcTester

Values
no
yes

Default no

ATTRIBUTE Vct Dna signalIntlAddressToLink (sia)

Access Read and write

Description

This attribute, if set to ***yes***, indicates that all addresses presented by the network (DCE) to the link (DTE) within incoming call request., call connected and clear packets are presented in international format with no prefix digit. International format includes DNIC in the address.

Mib VcTester

Values
no
yes

Default no

ATTRIBUTE Vct Dna fastSelectCallsOnly (fso)

Access Read and write

Description

This attribute, if set to ***yes***, indicates that the service is permitted restricted fast select calls in both the incoming and the outgoing directions using this *Dna*. If set to ***no***, then non fast select calls are permitted as well.

Mib VcTester

Values
no
yes

Default no

ATTRIBUTE Vct Dna preselectRpoa (prp)

Access Read and write

Description This attribute, if set to ***yes***, indicates that this *Dna* subscribes to a pre-selected RPOA, in which case, the pre-selected RPOA is contained in the *rpoa* attribute described below. If set to ***no***, then a pre-selected RPOA is not subscribed.

Mib VcTester

Values
no
yes

Default no

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ATTRIBUTE Vct Dna accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator and it is an arbitrary number.
Mib	VcTester
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vct Dna accountCollection (aco)

Access	Read and write
Description	This attribute indicates that accounting records are to be collected by the network for the various reasons: billing, test, study, auditing. The last of the parameters, force, indicates that accounting records are to be collected irrespective of other collection reasons. If none of these reasons are set, then accounting will be suppressed.
Mib	VcTester
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE Vct Dna serviceExchange (sre)

Access	Read and write
Description	This attribute is an arbitrary number, entered by the network operator. The value of *serviceExchange* is included in the accounting record generated by *Vc*.
Mib	VcTester
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vct Dna egressAccounting (ega)

Access	Read and write
Description	*egressAccounting* specifies if Egress accounting is enabled by Frame Relay service. Disabling of Egress accounting means that only segment

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counts are collected by VC and there are no frame relay counts in accounting records for Frame Relay service. Enabling of Egress accounting means that the accounting records for Frame Relay contain frame relay specific counts.

Mib VcTester

Values yes
no

Default no

ATTRIBUTE Vct Dna rpoa

Access Read and write

Description *rpoa* - Recognized Private Operating Agency is a ITU-T specified facility which allows the user to specify--at call setup time--the next transit network the call should use. The *rpoa* can override all routing decisions. If *Dna* subscribes to *preselectRpoa* as indicated by the previously described attribute, (*preselectRpoa* set to ***yes***) then this attribute contains preselected *rpoa*. If the *preselectRpoa* attribute is set to ***no***, then this attribute can be left at its default.
This preselected *rpoa* will be used for all outgoing call request packets using this *Dna* if an *rpoa* is not explicitly specified in the call request. The *rpoa* represents the *dnic* of the directly connected network through which the call will be routed in the presence of the *rpoa*.

Mib VcTester

Values BCD (4)

Default 0000

ATTRIBUTE Vct Dna dataPath (dpa)

Access Read and write

Description

This attribute specifies the data path to be used by Virtual Circuits on this interface. If the connection has a *DirectCall* component then the value can be overridden by the *dataPath* attribute of the *DirectCall* component.

This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established.

The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection.

A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value.

dprsOnly - dynamic packet routing system is used

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dprsMcsOnly - DPRS Multiservice Cut-Through Switching path is used.

dprsMcsFirst - DPRS Multiservice Cut-Through Switching path is used if it is available. If it is not available ***dprsOnly*** is used.

Mib	VcTester
Values	dprsOnly dprsMcsOnly dprsMcsFirst
Default	dprsOnly

COMPONENT Vct Dna ClosedUserGroup (Cug)

Instance	Decimal (0..255)
Groups	GROUP Vct Dna Cug CugOptions
Scope	Application
Description	*Fruni/n Dna Cug* *ClosedUserGroup* options defines options associated with national or international *Cug* Identifier. Other *Dna's* in the network can have *Cug's* defined which groups these *Dna's* by *Cug interlockCode*. If *Dna's* are defined with *Cugs*, calls from *Dna's* which do not have the same *interlockCode* defined are refused. Attributes *incAccess* and *outAccess* can override this rule.
Mib	VcTester
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vct Dna Cug CugOptions

Properties	Provisioned
Description	This group defines options for. Attributes in this group defines *ClosedUserGroup* options associated with *interlockCode*. *Dna's* with the same *Cug* (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same *Cug* group are defined here.
Mib	VcTester

ATTRIBUTE Vct Dna Cug type

Access	Read and write

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Description	This attribute specifies the Cug type - the Cug is either a national Cug, or an international Cug. International closed user groups are usually established between DTE's for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTE's for which there is no X.75 Gateway between. (National Cugs cannot normally traverse an X.75 Gateway). If this attribute is set to ***national***, then the *Cug* is a national *Cug*, in which case, the *dnic* should be left at its default value since it is not part of a national *Cug*. If this attribute is set to ***international***, then the *Cug* is an international *Cug*, in which case, the *dnic* should be set appropriately as part of the *Cug interlockCode*.
Mib	VcTester
Values	national international
Default	national

ATTRIBUTE Vct Dna Cug dnic

Access	Read and write
Description	This attribute specifies the *dnic* (Data Network ID Code) of the *Cug* by which packet networks are identified. This attribute is not applicable if the *Cug* is a ***national*** *Cug*, as specified by the Cug *type* attribute. There are usually 1 or 2 *dnics* assigned per country, for public networks. The U.S. is an exception where each BOC has a *dnic*. Also, a group of private networks can have its own *dnic*. *dnic* value is not an arbitrary number. It is assigned by international agreement and controlled by ITU-T.
Mib	VcTester
Values	BCD (4)
Default	0000

ATTRIBUTE Vct Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the *Cug* identifier of a national or international *Cug* call. It is an arbitrary number and it also can be called Cug in some descriptions. Interfaces (*Dna's*) defined with this number can make calls to *Dna's* with the same *interlockCode*.
Mib	VcTester
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vct Dna Cug preferential (pre)

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Access	Read and write
Description	This attribute, if set to ***yes*** indicates that this *Cug* is the preferential *Cug*, in which case it will be used during the call establishment phase if the DTE has not explicitly specified a *Cug* index in the call request packet. If set to ***no***, then this *Cug* is not the preferential *Cug*. Only one of the *Cugs* associated with a particular *Dna* can be the preferential *Cug* - only one *Cug* can have this attribute set to ***yes***.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna Cug outCalls (ouc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that outgoing calls (from the DTE into the network) can be made using this particular *Cug*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for *cugs* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna Cug incCalls (inc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular *Cug*. If set to ***disallowed***, then incoming calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for *Cugs* in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna Cug privileged (pri)

Access	Read and write

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Description	This attribute, if set to ***yes*** indicates that this *Cug* is a privileged *Cug*. In DPN, at least one side of a call setup within a *Cug* must have the *Cug* as a privileged *Cug*. If set to ***no***, then the *Cug* is not privileged. If both the local DTE and the remote DTE subscribe to the *Cug*, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTE's in which case the other DTE's cannot call one another, but can call the host. In this example, the host would have the privileged *Cug*, and the other DTE's would belong to the same *Cug*, but it would not be privileged.
Mib	VcTester
Values	no yes
Default	yes

COMPONENT Vct Dna HuntGroupMember (HgM)

Groups	GROUP Vct Dna HgM Interface (If) GROUP Vct Dna HgM Operational (Op)
Scope	Application
Description	*GvcIf/n Dna/n HgMember* This component specifies the Hunt Groups to which this member belongs. A hunt group member subscribes to at least one hunt group.
Mib	VcTester
Subcomponents	COMPONENT Vct Dna HgM HuntGroupAddress (HgAddr)
Common Verbs	Help List Display Add DELete

GROUP Vct Dna HgM Interface (If)

Properties	Provisioned
Description	This group contains the interface parameters between the *HuntGroupMember* and the Hunt Group server.
Mib	VcTester

ATTRIBUTE Vct Dna HgM availabilityUpdateThreshold (aut)

Access	Read and write
Description	This attribute indicates the number of channels that have to be freed or occupied before the Availability Message Packet (AMP) is sent to the Hunt Group Server informing it of the status of this interface.
Mib	VcTester

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Values	Decimal (0..4096)
Default	1

GROUP Vct Dna HgM Operational (Op)

Properties	Operational
Description	This group contains the operational attributes of the *HuntGroupMember* component.
Mib	VcTester

ATTRIBUTE Vct Dna HgM maxAvailableChannels (maxAc)

Access	Read only
Description	This attribute indicates the maximum number of available channels for this *HuntGroupMember*.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Dna HgM availableChannels (ac)

Access	Read only
Description	This attribute indicates the number of available channels reported to the hunt group in the Availability Message Packet (AMP). It is modified by adding 1 by the application when a channel is freed and subtracting 1 when a channel is occupied.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Dna HgM availabilityDelta (ad)

Access	Read only
Description	This attribute indicates the net change in the available channels since the last Availability Message Packet (AMP) was sent to the Hunt Group. Once the absolute value of this attribute reaches the *availabilityUpdateThreshold* an AMP is sent to the host and the *availabilityDelta* is reset to 0. If this attribute is positive it means an increase of the number of available channels. If it is negative it means a decrease in the number of available channels.
Mib	VcTester
Values	Signed (-4096..4096)
Default	No default

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COMPONENT Vct Dna HgM HuntGroupAddress (HgAddr)

Instance	Decimal (0..1)
Groups	GROUP Vct Dna HgM HgAddr Address (Addr)
Scope	Application
Description	*GvcIf/n Dna/n HgM HuntGroupAddress/n* This component specifies the Hunt Group address to which this member belongs. A hunt group member belongs to at least one hunt group.
Mib	VcTester
Common Verbs	Help List Display Add DELete

GROUP Vct Dna HgM HgAddr Address (Addr)

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes. String of address digits complemented by the NPI.
Mib	VcTester

ATTRIBUTE Vct Dna HgM HgAddr numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) the *Dna* that is entered. Address may belong to X.121 or E.164 plans.
Mib	VcTester
Values	x121 e164
Default	x121

ATTRIBUTE Vct Dna HgM HgAddr dataNetworkAddress (dna)

Access	Read and write
Description	This attribute contains digits which form unique identifier of the customer interface. It can be compared (approximation only) telephone number where phone number identifies unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	VcTester
Values	BCD (1..15)

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Default	No default

COMPONENT Vct DirectCall (Dc)

Instance	Decimal (1..10)
Groups	GROUP Vct Dc Options
Scope	Application
Description	*Fruni/n Dlci*/n dc This component defines direct call options for calls issued without operator intervention. Connection is complete and can be initiated automatically. Frequency of connection tries is controlled by retry timer.
Mib	VcTester
Common Verbs	Help List Display Add DELete

GROUP Vct Dc Options

Properties	Provisioned
Description	*Options* group defines attributes associated with direct call. It defines complete connection in terms of path and call options. This connection can be permanent (pvc) or switched (svc). It can have facilities. The total number of bytes of facilities including the facility codes, and all of the facility data from all of the four classes of facilities: ITU-T_Facilities DTE_Facilities National_Facilities International_Facilities must not exceed maximum subnet packet size defined for the whole network in ModuleData Vcs component.
Mib	VcTester

ATTRIBUTE Vct Dc localNpi (lnpi)

Access	Read and write
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *localDna*.
Mib	VcTester
Values	x121 e164
Default	x121

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ATTRIBUTE Vct Dc localDna (ldna)

Access	Read and write
Description	This attribute specifies the Data Network Address (*Dna*) of the local DTE. This address is used in formatting of call request to *remoteDna*.
Mib	VcTester
Values	BCD (0..15)
Default	No default

ATTRIBUTE Vct Dc remoteNpi (rnpi)

Access	Read and write
Description	Remote numbering Plan Indicator (Npi) indicates the numbering plan used in the *remoteDna*.
Mib	VcTester
Values	x121 e164
Default	x121

ATTRIBUTE Vct Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (*Dna*) of the remote. This is the called (destination) DTE address (*Dna*) to which this direct call will be sent. Initially, the called DTE address attribute must be present, that is, there must be a valid destination address. However, it may be possible in the future to configure the direct call with a mnemonic address, in which case, this attribute will contain a zero-length *Dna*, and the mnemonic address will be carried as one of the facilities.
Mib	VcTester
Values	BCD (1..15)
Default	No default

ATTRIBUTE Vct Dc remoteLcn (rlcn)

Access	Read and write
Description	This attribute provides the remote LCN (Logical Channel Number) - it is used only for PVCs, where attribute *type* is set to ***permanentMaster*** or ***permanentSlave*** or ***permanentBackupSlave***. In ***switched*** case, value of *remoteLcn* is not known when call request is made.
Mib	VcTester

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Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vct Dc type

Access	Read and write
Description	This attribute specifies the type of *Vc* call: ***switched,*** ***permanentMaster***, ***permanentSlave***, ***permanentSlaveWithBackup,*** ***permanentBackupSlave***, ***spvcMaster***, ***spvcSlave***, ***spvcSlaveWithBackup,*** ***spvcBackupSlave***. If the value of this attribute is set to ***switched*** then the remote end must also be provisioned as ***switched***. No information at the remote end is defined about this switched interface. If the value is set to ***permanentMaster,*** then a permanent connection will be established between 2 ends. The remote end must be defined as a ***permanentSlave***, ***permanentBackupSlave*** or ***permanentSlaveWithBackup***. The connection cannot be established if the remote end is defined as anything else. The end defined as ***permanentMaster*** always initiates the calls. It will attempt to call once per minute. If the value is set to ***permanentSlave*** then a permanent connection will be established between 2 ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote end is defined as anything else. The ***permanentSlave*** *end* will attempt to call once per minute. If the value is set to ***permanentSlaveWithBackup*** then a permanent connection will be established between the two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote interface end is defined as anything else. The ***permanentSlaveWithBackup*** *end* will attempt to call once per minute. When *type* is set to ***permanentSlaveWithBackup*** connection will be cleared if interface becomes unavailable. This enables a retry of the connection which can be redirected to ***permanentBackupSlave***. If the value is set to ***permanentBackupSlave*** then a permanent connection will be established between the 2 ends only if the ***permanentMaster*** end is disconnected from the ***permanentSlaveWithBackup*** end and a backup call is established by the redirection system. If the ***permanentSlaveWithBackup*** interface becomes visible again, the ***permanentBackupSlave*** end is disconnected

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and the ***permanentSlaveWithBackup*** end is reconnected to the ***permanentMaster*** end. The ***permanentBackupSlave*** end does not try to establish pvc call.

Mib — VcTester

Values
switched (svc)
permanentMaster (master)
permanentSlave (slave)
permanentBackupSlave (backSl)
permanentSlaveWithBackup (slavWB)
spvcMaster (spvcM)
spvcSlave (spvcS)
spvcBackupSlave (spvcBackS)
spvcSlaveWithBackup (spvcSWBack)

Default — switched

ATTRIBUTE Vct Dc svcAutoCallRetry (acr)

Access — Read and write

Description — *svcAutoCallRetry* is used only for ***switched*** calls, in which case the attribute *type* is set to ***switched***. Otherwise, this attribute is ignored by the *Vc*s.
This attribute, if set to ***yes*** for Svc, indicates that the *Vc* will continually try to establish the SVC rather than clearing the *Vc* after the first unsuccessful call attempt. Further, if the call fails while in data transfer phase, then the *Vc* will automatically attempt to reconnect. The call attempts are made by the *Vc* once per time provisioned in *InterfaceOptions* as *callRetryTimer*, repeatedly. If set to ***no*** for SVCs, then the *Vc* behaves in the standard mode, making a single call attempt.

Mib — VcTester

Values
no
yes

Default — no

ATTRIBUTE Vct Dc userData (usd)

Access — Read and write

Description — This attribute contains the user data, if present. *userData* is a 0 to 16 length string which is appended to the call request packet that is presented to the called (destination) DTE.

User data can be a 0 to 128 byte string for fast select calls; otherwise it is 0 to 16 byte string.

Fast select calls are indicated as such using the X.25 ITU-T facility for 'Reverse Charging'.

The length of the user data attribute is not verified during service

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provisioning. If more than 16 bytes of user data is specified on a call without the fast select option, then the call is cleared with a clear cause of 'local procedure error', and a diagnostic code of 39 (as defined in the ITU-T X.25 Recommendation).

Mib	VcTester
Values	String (0..128, Hex)
Default	No default

ATTRIBUTE Vct Dc discardPriority (dp)

Access	Read and write
Description	This attribute specifies the discard priority for outgoing call using this *DLCI*. The discard priority has three provisioning values: ***normal, high,*** and ***useDnaDefPriority***. Traffic with ***normal*** priority are discarded first than the traffic with ***high*** priority. The *Dna* default value (provisioned by *outDefaultPriority*) is taken if this attribute is set to the value ***useDnaDefPriority***. The default of *discardPriority* is ***useDnaDefPriority***.
Mib	VcTester
Values	normal high useDnaDefPriority
Default	useDnaDefPriority

ATTRIBUTE Vct Dc dataPath (dpa)

Access	Read and write
Description	This attribute specifies the data path to be used by Virtual Circuits on this interface. The value of the *dataPath* attribute in the *Dna* component is overridden by this attribute if the value is not ***useDnaValue***. This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established. The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection. A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value. ***dprsOnly*** - dynamic packet routing system is used

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dprsMcsOnly - dprs Multi-Service Cut-Through Switching path is used.

dprsMcsFirst - dprs Multi-Service Cut-Through Switching path is used if it is available. If it is not available ***dprsOnly*** is used.

useDnaValue - use the value provisioned in *Dna* component.

Mib VcTester

Values
dprsOnly (dpOnly)
dprsMcsOnly (mcOnly)
dprsMcsFirst (mcFrst)
useDnaValue (dnaVal)

Default dprsOnly

ATTRIBUTE Vct Dc cugIndex (ci)

Access Read and write

Description

This attribute specifies the CUG index which is to be signaled in PVC call requests to the remote end.

The type of CUG signaling is defined in attribute *cugType* in this component.

Mib VcTester

Values Decimal (0..255)

Default 0

ATTRIBUTE Vct Dc cugType (ct)

Access Read and write

Description

This attribute specifies the type of CUG signaling to be used in PVC call request. Index of CUG to be used is defined in attribute *cugIndex* in this component.

Possible values are:
cug - signal cug
cugOa - signal cug with outgoing access
doNotSignal - no CUG in call request

Mib VcTester

Values
cug
cugOa
doNotSignal

Default doNotSignal

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ATTRIBUTE Vct Dc ccittFax (cfa)

Access	Read and write
Description	This is the i'th ITU-T facility required for this direct call. Within the provisioning system, the user specifies the facility code along with the facility parameters. The facility is represented internally as a hexadecimal string following the X.25 ITU-T representation for facility data. The user specifies the facility code when adding, changing or deleting a facility. The upper two bits of the facility code indicate the class of facility. From the class of the facility, one can derive the number of bytes of facility data, as follows: Class A - 1 byte of fax data Class B - 2 bytes of fax data Class C - 3 bytes of fax data Class D - variable length of fax data.
Mib	VcTester
Values	String (0..128, Hex)
Replication	Hex (H.1; H.2; H.3; H.4; H.9; H.42; H.43; H.44; H.47; H.48; H.49; H.c4; H.c6)
Default	No default

ATTRIBUTE Vct Dc dteFax (dfa)

Access	Read and write
Description	This is the i'th DTE facility required for this direct call. Within the provisioning system, the user specifies the facility code along with the facility parameters. The facility is represented internally as a hexadecimal string following the X.25 ITU-T representation for facility data.
Mib	VcTester
Values	String (0..128, Hex)
Replication	Hex (H.a; H.b; H.c9; H.ca; H.cb; H.d2; H.d3)
Default	No default

ATTRIBUTE Vct Dc intlFax (ifa)

Access	Read and write
Description	This is the i'th International facility required for this direct call. Within the provisioning system, the user specifies the facility code along with the facility parameters. The facility is represented internally as a hexadecimal string following the X.25 ITU-T representation for facility data.

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Mib	VcTester
Values	String (0..128, Hex)
Replication	Hex (H.1..H.ff)
Default	No default

COMPONENT Vct Vc

Groups	GROUP Vct Vc CallData (Cad) GROUP Vct Vc IntervalData (Intd) GROUP Vct Vc Statistics (Stats)
Scope	Application
Description	*... Vc()* This component defines display of general Vc dynamic attributes
Mib	VcTester
Common Verbs	Help List Display

GROUP Vct Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to General *Vc*. It can be displayed only for General *Vc* which is created by application.
Mib	VcTester

ATTRIBUTE Vct Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc*** or ***svc***. *type* is provided at provisioning time.
Mib	VcTester
Values	pvc svc
Default	No default

ATTRIBUTE Vct Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.

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Mib	VcTester
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Vct Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	VcTester
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Vct Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	VcTester

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Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	VcTester
Values	x121 e164
Default	No default

ATTRIBUTE Vct Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	VcTester
Values	BCD (1..15)
Default	No default

ATTRIBUTE Vct Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	VcTester
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vct Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	VcTester
Values	x121 e164
Default	No default

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ATTRIBUTE Vct Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	VcTester
Values	BCD (1..15)
Default	No default

ATTRIBUTE Vct Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	VcTester
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vct Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	VcTester
Values	yes no
Default	No default

ATTRIBUTE Vct Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	VcTester
Values	yes no
Default	No default

ATTRIBUTE Vct Vc localRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	VcTester

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Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Vct Vc localTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	VcTester
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Vct Vc localTxWindowSize

Access	Read only
Description	This attribute displays the send window size provided on incoming call packets or the default when a call request packet does not explicitly provide the window size.
Mib	VcTester
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Vct Vc localRxWindowSize

Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets or the default when a call request does not explicitly provide the window sizes.

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Mib	VcTester
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Vct Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	VcTester
Values	high normal
Default	No default

ATTRIBUTE Vct Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	VcTester
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Vct Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	VcTester
Values	normal high
Default	No default

ATTRIBUTE Vct Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

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ATTRIBUTE Vct Vc subnetTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of the data packets on this *Vc*.
Mib	VcTester
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Vct Vc subnetTxWindowSize

Access	Read only
Description	This attribute displays the current send window size of *Vc*.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vc subnetRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of receive packets.
Mib	VcTester
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

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ATTRIBUTE Vct Vc subnetRxWindowSize

Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets and to the default when a call request does not explicitly provide the window sizes.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vc maxSubnetPktSize

Access	Read only
Description	This attribute displays the maximum packet size allowed on *Vc*.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vc transferPriorityToNetwork

Access	Read only
Description	This attribute displays the priority in which data is transferred to the network. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput.
Mib	VcTester
Values	normal high
Default	No default

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ATTRIBUTE Vct Vc transferPriorityFromNetwork

Access	Read only
Description	This attribute displays the priority in which data is transferred from the network. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, and the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, and the routing metric is set to throughput.
Mib	VcTester
Values	normal high
Default	No default

GROUP Vct Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	VcTester

ATTRIBUTE Vct Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vc segmentsRx

Access	Read only

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Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	VcTester
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vct Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as

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	one of the attributes in matching duplicate records generated at each end of the call.
Mib	VcTester
Values	Decimal (0..4294967295)
Default	No default

GROUP Vct Vc Statistics (Stats)

Properties	Operational
Description	*... Statistics(Stats)* This group defines general attributes collected by general *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods.
Mib	VcTester

ATTRIBUTE Vct Vc ackStackingTimeouts

Access	Read only
Description	This attribute counts the number of ack stacking timer expiries. It is used as an indicator of the acknowledgment behavior across the subnet when ack stacking is in effect. If it expires often, usually this means end users will experience longer delay. The ack stacking timer specifies how long the *Vc* will wait before finally sending the subnet acknowledgment. if this attribute is set to a value of 0, then the *Vc* will automatically return acknowledgment packets without delay. If this attribute is set to a value other than zero, then the *Vc* will wait for this amount of time in an attempt to piggyback the acknowledgment packet on another credit or data packet. If the *Vc* cannot piggyback the acknowledgment packet within this time, then the packet is returned without piggybacking.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute counts the number of subnet frames discarded due to the sequence number being out of range.

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	Two Categories apply for the General *Vc* 1) lost Acks (previous Range) 2) unexpected Packets (next Range) *Vc* internally maintains its own sequence number of packet order and sequencing. Due to packet retransmission, *Vc* may receive duplicate packets that have the same *Vc* internal sequence number. Only 1 copy is accepted by the *Vc* and other copies of the same packets are detected through this count. This attribute can be used to record the frequency of packet retransmission due to *Vc* and other part of the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc duplicatesFromSubnet

Access	Read only
Description	This attribute counts the number of subnet packets discarded due to duplication. It is used to detect software error fault or duplication caused by retransmitting.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc frmRetryTimeouts

Access	Read only
Description	This attribute counts the number of frames which have retransmission time-out. If packets from *Vc* into the subnet are discarded by the subnet, the source *Vc* will not receive any acknowledgment. The retransmission timer then expires and packets will be retransmitted again. Note that the *Vc* idle probe may be retransmitted and is included in this count. This statistics does not show the distribution of how many times packets are retransmitted (e.g. first retransmission results in successful packet forwarding).
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc peakRetryQueueSize

Access	Read only

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Description	This attribute indicates the peak size of the retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest body of unacknowledged packets.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc peakOoSeqQueueSize

Access	Read only
Description	This attribute indicates the peak size of the out of sequence queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute indicates the peak size of the sequence packet queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets, which by the receipt of an expected packet have been transformed to expected packets. The number of times this peak is reached is not recorded as it is traffic dependent.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc peakStackedAcksRx

Access	Read only
Description	This attribute indicates the peak size of wait acks. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest collective acknowledgment.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc subnetRecoveries

Access	Read only

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Description	This attribute counts the number of successful *Vc* recovery attempts. This attribute is used as an indicator of how many times the *Vc* path is broken but can be recovered. This attribute is useful to record the number of network path failures.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc windowClosuresToSubnet

Access	Read only
Description	This attribute counts the number of window closures to subnet. A packet may have been sent into the subnet but its acknowledgment from the remote *Vc* has not yet been received. This is a 8 bit sequence number.This number is useful in detecting whether the *Vc* is sending any packet into the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc windowClosuresFromSubnet

Access	Read only
Description	This attribute counts the number of window closures from subnet. This attribute is useful in detecting whether the *Vc* is receiving any packet from the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc wrTriggers

Access	Read only
Description	This attribute displays the number of times the *Vc* stays within the W-R region. The W-R region is a value used to determined the timing of credit transmission. Should the current window size be beneath this value, the credits will be transmitted immediately. Otherwise, they will be transmitted later with actual data. The wrTriggers statistic is therefore used to analyze the flow control and credit mechanism.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

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COMPONENT Vct Vcfr

Groups	GROUP Vct Vcfr CallData (Cad) GROUP Vct Vcfr IntervalData (Intd) GROUP Vct Vcfr FrameRelayData (Frd)
Scope	Application
Description	This component defines the statistics collected by Frame Relay Vc. It is needed for lightweight vc.
Mib	VcTester
Common Verbs	Help List Display

VERB Ping Vct Vcfr

Impact	Passive
Description	*Ping [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] FrUni/<n> Dlci/<n> Vc* *Ping* causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the *ping* query packet will be the same as that of the Frame Relay data except at the source and destination module. The *ping* packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP. Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified. The *ping* command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the *roundTripDelay* option is specified, the command reports the time taken to reach the destination and back. For the *roundTripDelay* option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the *ping* packets are

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generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The *ping* command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the *sendPktSize* and *returnPktSize* options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Passport common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default packet data size, 128 octets, will be used. This option is ignored if the *-rtd* option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Passport common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default packet data size, 128 octets, will be used. This option is ignored if the *-rtd* option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP Vct Vcfr CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.

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Mib	VcTester

ATTRIBUTE Vct Vcfr type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	VcTester
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE Vct Vcfr state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	VcTester
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Vct Vcfr previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	VcTester
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6

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	dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Vct Vcfr diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vcfr previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vcfr calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	VcTester
Values	x121 e164
Default	No default

ATTRIBUTE Vct Vcfr calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	VcTester
Values	BCD (1..15)
Default	No default

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ATTRIBUTE Vct Vcfr calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	VcTester
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vct Vcfr callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	VcTester
Values	x121 e164
Default	No default

ATTRIBUTE Vct Vcfr callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	VcTester
Values	BCD (1..15)
Default	No default

ATTRIBUTE Vct Vcfr callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	VcTester
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vct Vcfr accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.

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Mib	VcTester
Values	yes no
Default	No default

ATTRIBUTE Vct Vcfr fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	VcTester
Values	yes no
Default	No default

ATTRIBUTE Vct Vcfr pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	VcTester
Values	high normal
Default	No default

ATTRIBUTE Vct Vcfr accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	VcTester
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Vct Vcfr priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	VcTester
Values	normal high
Default	No default

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ATTRIBUTE Vct Vcfr segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vcfr maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vcfr rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	VcTester
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Vct Vcfr rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	VcTester
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Vct Vcfr emissionPriorityToNetwork (epto)

Access	Read only

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Description	This attribute displays the network internal emission priority to the network.
Mib	VcTester
Values	normal high interrupting
Default	No default

ATTRIBUTE Vct Vcfr emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	VcTester
Values	normal high interrupting
Default	No default

ATTRIBUTE Vct Vcfr dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.
Mib	VcTester
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vct Vcfr dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components.

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If the connection is using ***dprsOnly*** data path, this attribute is empty.

If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.

Mib	VcTester
List of	The name of the component
Default	No default

GROUP Vct Vcfr IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	VcTester

ATTRIBUTE Vct Vcfr elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vcfr segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vcfr segmentsSent

Access	Read only

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Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vcfr startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	VcTester
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vct Vcfr callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	VcTester
Values	Decimal (0..4294967295)
Default	No default

GROUP Vct Vcfr FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified,

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	statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	VcTester

ATTRIBUTE Vct Vcfr frmCongestedToSubnet

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr cannotForwardToSubnet

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	VcTester
Values	Decimal (0..5000)

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Default	No default

ATTRIBUTE Vct Vcfr outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vcfr combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	VcTester

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Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr ooSeqByteCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-

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	sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses this statistics to set a maximum size for the out-of-sequenced queue.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	VcTester
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Vct Vcfr pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

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ATTRIBUTE Vct Vcfr subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vcfr peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	VcTester
Values	Decimal (0..50000)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vct

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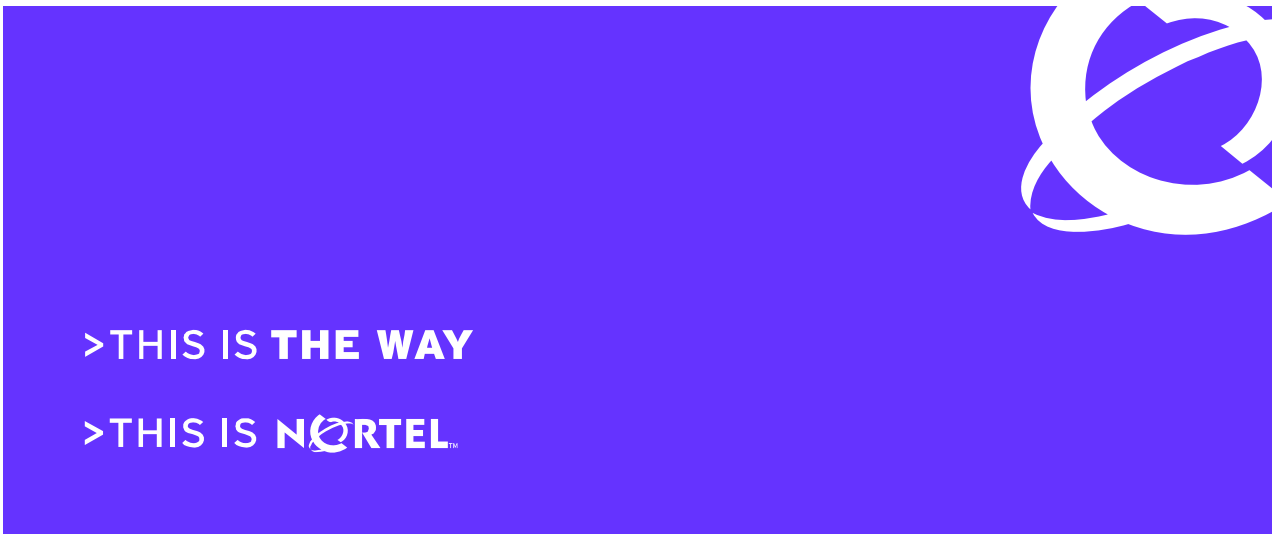

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vm

NN10600-060

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COMPONENT VirtualMedia (Vm)

Instance	Decimal (0..15)
Scope	Application
Description	*VirtualMedia/n* The *VirtualMedia* component represents an instance of a logical media. *VirtualMedia* provides IP connectivity between virtual routers on the same module, and supports an ‘always-up IP interface’ concept; i.e interface stays up unless it is administratively disabled or the hardware goes down. *VirtualMedia* can be used to support inter-VR communication, or by BGP-4 to establish an ‘always-up IP interface’.
Mib	VirtualMedia
Subcomponents	COMPONENT Vm Interface (If)
Common Verbs	Help List Display Add DELete

COMPONENT Vm Interface (If)

Instance	Decimal (0..15)
Groups	GROUP Vm If MediaProv (Mp) GROUP Vm If CustomerIdentifierData (CidData) GROUP Vm If IfEntryProv (IfEntry) GROUP Vm If OperationalStatus (OperStatus) GROUP Vm If OsiState (State) GROUP Vm If Provisioned (Prov)
Scope	Application
Description	*Vm/n Interface/n* This component represents a logical interface to the *VirtualMedia*. The

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given *VirtualMedia* instance can have at most one *Interface* linked to a *ProtocolPort* of a given *VirtualRouter*.

Mib: VirtualMedia

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vm If MediaProv (Mp)

Properties: Provisioned

Description: This group contains the base provisioning data for the media base component.

Mib: VirtualMedia

ATTRIBUTE Vm If linkToProtocolPort (pp)

Access: Read and write

Criticality: Component

Description: This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.

Mib: VirtualMedia

Values: Link (Service, linkToMedia)

Default: No default

GROUP Vm If CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: VirtualMedia

ATTRIBUTE Vm If customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a

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	CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	VirtualMedia
Values	Decimal (0; 1..8191)
Default	0

GROUP Vm If IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	VirtualMedia

ATTRIBUTE Vm If ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualMedia
Values	up down testing
Default	up

ATTRIBUTE Vm If ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VirtualMedia
Values	Decimal (1..65535)
Default	No default

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GROUP Vm If OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VirtualMedia

ATTRIBUTE Vm If snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualMedia
Values	up down testing
Default	up

GROUP Vm If OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VirtualMedia

ATTRIBUTE Vm If adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively

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	permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VirtualMedia
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vm If operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VirtualMedia
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vm If usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VirtualMedia
Values	idle active (activ) busy
Default	idle

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GROUP Vm If Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *If* component.
Mib	VirtualMedia

ATTRIBUTE Vm If mode

Access	Read and write
Criticality	Component
Description	This attribute specifies the mode of operation of the *Vm If*. The following modes are supported: ***alwaysUpInterface***, ***alwaysUpSummaryInterface*** and ***interVrConnection***. ***alwaysUpInterface***: This mode limits the *Vm If* to provide the functionality of an 'always up interface' only. Inter-VR communcation is not possible when this mode is selected. Memory consumption by the *Vm If* is significantly less on the FP when this mode is selected. Hence this mode should be used when the sole purpose of the *Vm If* is to provide an always up interface for an application like BGP4. ***alwaysUpSummaryInterface***: This mode limits the *Vm If* to provide the functionality of an 'always up interface' in which more than one host can be sumarized. Inter-VR communcation is not possible when this mode is selected. Memory consumption by the *Vm If* is significantly less on the FP when this mode is selected. Hence this mode should be used when the sole purpose of the *Vm If* is to provide an always up interface for an application like VPN in which specific host information is configured by the user. ***interVrConnection***: This mode provides the full capability of VirtualMedia, that is, 'always up interface' and inter-VR communication.
Mib	VirtualMedia
Values	alwaysUpInterface interVrConnection alwaysUpSummaryInterface
Default	alwaysUpInterface

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vm

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vncs

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COMPONENT VoiceNetworkingCallServer (Vncs)

Instance	Decimal (1..16)
Groups	GROUP Vncs Provisioned (Prov) GROUP Vncs Statistics (Stats)
	COLLECTED STATS VoiceNetworkingCallServer
Scope	Network
Description	*Vncs/n* The *Vncs* component provides the information to the Path Oriented Routing System (PORS) required during switched voice call establishment. It translates the directory number prefix into the routing information and the voice service profile parameters. Each instance of this component represents one numbering plan.
Mib	VncsCallServer
Subcomponents	COMPONENT Vncs DiallingPlan (DP) COMPONENT Vncs VoiceProfile (Vp)
Common Verbs	Help List Display Add DELete

GROUP Vncs Provisioned (Prov)

Properties	Provisioned
Description	This group represents the provisionable attributes of the VNCS server.
Mib	VncsCallServer

ATTRIBUTE Vncs commentText

Access	Read: All Write: All

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Description	This attribute specifies the name of the customer that is using this VNCS server. Typical use of this attribute is to store customer name.
Mib	VncsCallServer
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Vncs voiceRoutes (vRoutes)

Access	Read only
Description	This attribute indicates which *VoiceRoute* components are using this *Vncs*.
Mib	VncsCallServer
List of	Link (Service, voiceNetworkingCallServer)
Default	No default

GROUP Vncs Statistics (Stats)

Properties	Operational
Description	This group provides data for the *Vncs* component.
Mib	VncsCallServer

ATTRIBUTE Vncs totalTranslations

Access	Read: All Write: Illegal
Description	This attribute counts the total number of translation requests received by VNCS. This counter wraps to zero when it reaches its maximum value.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	0

COLLECTED STATS VoiceNetworkingCallServer

Description	The statistics record generated by the VoiceNetworkingCallServer component.

ATTRIBUTE Vncs totalTranslations

Description	This spooled statistic counts the number of translation requests received by *Vncs* in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vncs completeTranslations

Description	This spooled statistic counts the number of completed translations handled under each *DiallingPlan* component in the last statistics collection

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interval. The complete translations are the one that resulted in the return by VNCS server of the reply message with the routing information and *VoiceProfile* parameters associated with the directory number prefix supplied in the translation request message.

Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs incompleteTranslations

Description	This spooled statistic counts the number of incomplete translations handled under each *DiallingPlan* component in the last statistics collection interval. The incomplete translations are the one that require more digits in the directory number prefix to uniquely identify routing attributes.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs failedTranslations

Description	This spooled statistic counts the number of failed translations handled under this *DiallingPlan* component in the last statistics collection interval. The failed translations are the one for which the directory number prefix could not be found in the database.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs usageCount

Description	This spooled statistic counts the number of times each *VoiceProfile* useage count is accessed to set up a connection in the last statistics collection interval.
Vector of	Decimal (0..65535)
Index	Decimal (1..64)

COMPONENT Vncs DiallingPlan (DP)

Instance	Decimal (0..2)
Groups	GROUP Vncs DP Statistics (Stats)
Scope	Network
Description	*Vncs/n diallingPlan/x* The *DiallingPlan* subcomponent contains part of the Voice Networking Call

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Server database that belongs under one dialling plan. There are three dialling plans supported, dialling plan 0, dialling plan 1 and dialling plan 2.

Mib	VncsCallServer
Opt. Subcomp.	COMPONENT Vncs DP DirectoryNumber (Dn)
Common Verbs	Help List Display Add

GROUP Vncs DP Statistics (Stats)

Properties	Operational
Description	This group provides the operational components for the *AccessCode* component. It displays total DirectoryNumber components under this access code, total translation requests received and total requests failed under this access code.
Mib	VncsCallServer

ATTRIBUTE Vncs DP completeTranslations

Access	Read: All Write: Illegal
Description	This attribute counts the total number of complete translations handled under this *AccessCode* component. The complete translations are the one that resulted in the return by VNCS server of the reply message with the routing information and voice profile parameters associated with the directory number prefix supplied in the translation request message. This counter wraps to zero when it reaches its maximum value.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vncs DP incompleteTranslations

Access	Read: All Write: Illegal
Description	This attribute counts the total number of incomplete translations handled under this *AccessCode* component. The incomplete translations are the one that require more digits in the directory number prefix to uniquely identify routing attributes. This counter wraps to zero when it reaches its maximum value.
Mib	VncsCallServer
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vncs DP failedTranslations

Access	Read: All Write: Illegal
Description	This attribute counts the total number of failed translations handled under this *AccessCode* component. The failed translations are the one for which the directory number prefix could not be found in the database. the value wraps up when it reaches maximum.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vncs DP DirectoryNumber (Dn)

Instance	BCD (1..40, Wildcarded)
Groups	GROUP Vncs DP Dn Provisioned (Prov)
Scope	Network
Description	*Vncs/n DP/x DirectoryNumber/x* The *DirectoryNumber* subcomponent represents a prefix directory number excluding the access code. The instance value must be 1 to 40 digits each of value 0 through 9 or wildcard digit. The wildcard digit is represented by "?". It is used to indicate to VNCS that the digit in that position should be ignored for routing purposes. Wildcard inconsistencies must not exist. If a prefix directory number already exists with a digit in a particular position, a new prefix may not be added with a wild card in that position and if the prefix already exists with a wild card in the particular position, a new prefix may not be added with a specific digit in the same position.
Mib	VncsCallServer
Common Verbs	Help List Display Add DELete

GROUP Vncs DP Dn Provisioned (Prov)

Properties	Provisioned
Description	This group represents attributes that the prefix directory number maps to.
Mib	VncsCallServer

ATTRIBUTE Vncs DP Dn destinationNodeId (nodeId)

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Access	Read: All Write: All
Description	This attribute in conjunction with the *destinationComponentId* attribute identifies the destination of a voice connection. The *destinationNodeId* and the *destinationComponentId* attributes are being replaced by the *DataNetworkAddress (Dna)* attribute. For the migration procedure consult NTP NN10600-410. If the *destinationComponentId*, the *destinationNodeId* and the *Dna* attributes are all set, the call routing is based on the *destinationNodeId* and the *destinationComponentId*, unless the call is initiated from the MPA module, which will use the *Dna* attribute. The valid destination call identifier settings are: 1. *destinationNodeId* and *destinationNodeId* attributes set 2. *destinationNodeId*, *destinationNodeId* and *Dna* attributes set 3. *Dna* attribute set For calls initiated from the MPA, only options 2 and 3 are valid.
Mib	VncsCallServer
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vncs DP Dn destinationComponentId (dci)

Access	Read: All Write: All
Description	This attribute in conjunction with the *destinationNodeId* attribute identifies the destination of a voice connection. The only valid component name for this attribute value is *vroute*. The *destinationNodeId* and the *destinationComponentId* attributes are being replaced by the *DataNetworkAddress (Dna)* attribute. For the migration procedure consult NTP NN10600-410 If the *destinationComponentId*, the *destinationNodeId* and the *Dna* attributes are all set, the call routing is based on the *destinationNodeId* and the *destinationComponentId*, unless the call is initiated from the MPA module, which will use the *Dna* attribute. The valid destination call identifier settings are: 1. *destinationNodeId* and *destinationNodeId* attributes set 2. *destinationNodeId*, *destinationNodeId* and *Dna* attributes set 3. *Dna* attribute set For calls initiated from the MPA, only options 2 and 3 are valid.

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Mib	VncsCallServer
Values	The name of the component
Default	No default

ATTRIBUTE Vncs DP Dn voiceProfileNumber (vpn)

Access	Read: All Write: All
Description	This attribute identifies the voice profile number.
Mib	VncsCallServer
Values	Decimal (1..64)
Default	1

ATTRIBUTE Vncs DP Dn numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* of the destination component. An address may belong to the X.121 or E.164 numbering plans. X.121 is used in packet switched data networks.
Mib	VncsCallServer
Values	x121 e164
Default	e164

ATTRIBUTE Vncs DP Dn dataNetworkAddress (dna)

Access	Read and write
Description	The *Dna* attribute contains digits which form a unique identifier of the destination of a voice connection. This attribute is used instead of the *destinationNodeId* and *destinationComponentId* attributes to identify the destination of the voice connection. This attribute is only used if the *destinationNodeId* and the *destinationComponentId* attributes are not set or if the call is initiated from the MPA module.
Mib	VncsCallServer
Values	BCD (0..15)
Default	No default

COMPONENT Vncs VoiceProfile (Vp)

Instance	Decimal (1..64)

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Groups	GROUP Vncs Vp LogicalConnectionOptions (LCOps) GROUP Vncs Vp FramerOptions (FrOps) GROUP Vncs Vp Statistics (Stats)
Scope	Network
Description	*Vncs/n VoiceProfile/n* A *VoiceProfile* component contains all provisionable logical connection attributes and framer attributes used to set up a virtual circuit. Directory-number prefixes are mapped to *VoiceProfile* instances by the *Vncs Dp Dn* component. Many directory-number prefixes use the same profile.
Mib	VncsCallServer
Common Verbs	Help List Display Add DELete

GROUP Vncs Vp LogicalConnectionOptions (LCOps)

Properties	Provisioned
Description	The attributes of this group collectively form part of a template used to describe and set up a switched logical connection. The attributes of a switched logical connection are similar to the attributes of a permanent logical connection.
Mib	VncsCallServer

ATTRIBUTE Vncs Vp setupPriority (spri)

Access	Read and write
Description	This attribute specifies the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	VncsCallServer
Values	Decimal (0..4)
Default	2

ATTRIBUTE Vncs Vp holdingPriority (hpri)

Access	Read and write

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Description	This attribute specifies the priority that a path holds once it is established. Zero is the highest priority and four is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	VncsCallServer
Values	Decimal (0..4)
Default	2

ATTRIBUTE Vncs Vp bumpPreference (bpref)

Access	Read and write
Description	This attribute specifies when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *setupPriority* in order to acquire its bandwidth and be established. By default, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. A connection may be set to bump in order to use the best available route it may have.
Mib	VncsCallServer
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Vncs Vp requiredTrafficType (rttyp)

Access	Read and write
Description	This attribute specifies the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.
Mib	VncsCallServer
Values	voice data video

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trafficType1 (tt1)
trafficType2 (tt2)
trafficType3 (tt3)
trafficType4 (tt4)
trafficType5 (tt5)

Default voice

ATTRIBUTE Vncs Vp permittedTrunkTypes (pttyp)

Access Read and write

Description This attribute specifies up to eight types of trunks that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS chooses only trunks whose *trunkType*s are in the *permittedTrunkTypes* for the path.

Mib VncsCallServer

Set of terrestrial
satellite
trunkType1 (tt1)
trunkType2 (tt2)
trunkType3 (tt3)
trunkType4 (tt4)
trunkType5 (tt5)
trunkType6 (tt6)

Default (terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Vncs Vp requiredSecurity (rsec)

Access Read and write

Description This attribute specifies the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.

Mib VncsCallServer

Values Decimal (0..7)

Default 4

ATTRIBUTE Vncs Vp requiredCustomerParm (rcparm)

Access Read and write

Description This attribute specifies the allowed customer defined parameter of the trunks on the route. Its value, a number from zero to seven, is chosen by

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network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.

Mib	VncsCallServer
Values	Decimal (0..7)
Default	4

ATTRIBUTE Vncs Vp pathAttributeToMinimize (pamin)

Access	Read and write
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metric for all trunks included in the route.
Mib	VncsCallServer
Values	cost delay
Default	cost

ATTRIBUTE Vncs Vp maximumAcceptableCost (maxCost)

Access	Read and write
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done for any minimization criterion. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.
Mib	VncsCallServer
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Vncs Vp maximumAcceptableDelay (maxDelay)

Access	Read and write
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delays of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way

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delay of a 512-byte packet. Remember, that the trunk during its staging measures a *measuredRoundTripDelay*. This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512-byte packet is used to perform the measurement.
If for any trunk the half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection.
While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay*.

Mib	VncsCallServer
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Vncs Vp emissionPriority (epri)

Access	Read and write
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	VncsCallServer
Values	Decimal (0..2)
Default	0

ATTRIBUTE Vncs Vp discardPriority (dpri)

Access	Read and write
Description	This attribute specifies the importance of the packets on the path. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically) are discarded after packets with a higher *discardPriority* (numerically).
Mib	VncsCallServer
Values	Decimal (1..3)
Default	1

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ATTRIBUTE Vncs Vp pathFailureAction (pfa)

Access	Read and write
Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails, the application is informed of the failure. With this option set to ***reRoutePath***, the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.
Mib	VncsCallServer
Values	reRoutePath disconnectConnection
Default	reRoutePath

ATTRIBUTE Vncs Vp optimization (opt)

Access	Read and write
Description	This attribute specifies whether this connection should attempt to optimize its path when requested by the *Rtg Pors* component. Every path is optimal when it is established, but as network traffic patterns and configurations change this path may no longer be optimal. The PORS connection manager on a module requests circuits to optimize at the *optimizationInterval*.
Mib	VncsCallServer
Values	disabled enabled
Default	enabled

ATTRIBUTE Vncs Vp maximumAcceptableGatewayCost (maxGateCost)

Access	Read and write
Description	This attribute indicates an upper bound on the gateway cost metric of a route, which is the sum of the gateway cost metrics of all gateway links on the route. It has the same semantics as the *maximumAcceptableCost* except that gateway cost metrics are used instead of trunk cost metrics. Gateway cost metrics are provisioned under *Trunk Address* component of

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a gateway link specifying a gateway costs of reaching an address through the link.

Mib	VncsCallServer
Values	Decimal (0..65535)
Default	2048

GROUP Vncs Vp FramerOptions (FrOps)

Properties	Provisioned
Description	This group contains attributes which define how audio data is carried across the network.
Mib	VncsCallServer

ATTRIBUTE Vncs Vp silenceSuppression

Access	Read and write
Description	This attribute specifies when silence suppression is desired during voice traffic on an audio call. If *silenceSuppression* is ***off***, silence suppression is never desired. If *silenceSuppression* is ***on***, silence suppression is always desired. If *silenceSuppression* is ***congested***, silence suppression is desired only when the network is congested. If *silenceSuppression* is ***slow***, silence suppression is desired only after 20 seconds without audio. If *silenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are desired. The negotiated silence suppression is available in *Vsr Svs Framer negotiatedSilenceSuppression*.
Mib	VncsCallServer
Values	off on congested slow slowAndCongested
Default	on

ATTRIBUTE Vncs Vp silenceSuppressionFactor

Access	Read and write
Description	This attribute specifies the expected savings (percent reduction) in required bandwidth if silence suppression is used. If silence suppression is used, the bandwidth required for the connection will be lower than if silence suppression is not used. However, the routing system will not be aware of the unused bandwidth unless that bandwidth is specified by this

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attribute.
If the value specified for the expected savings is too low, then some bandwidth made available by the use of silence suppression will be wasted. If the value specified for the expected savings is too high, then some connections may fail to set up because the routing system will over-calculate the amount of bandwidth available.
The effectiveness of silence suppression can be influenced by language related speech patterns.

Mib	VncsCallServer
Values	Decimal (0..60)
Units	%
Default	40

ATTRIBUTE Vncs Vp dataCallsAccepted (dca)

Access	Read and write
Description	This attribute specifies whether data calls are allowed if this profile is used.
Mib	VncsCallServer
Values	no yes
Default	yes

ATTRIBUTE Vncs Vp faxIdleSuppressionG711G726

Access	Read: Passive Write: Service
Description	This attribute specifies the fax idle suppression parameter used during negotiation with the remote end across the subnet. It applies only to fax traffic, not voice or modem traffic. The negotiated G.711/G.726 fax idle suppression is available in *Vsr Svs Framer negotiatedFisG711G726.*
Mib	VncsCallServer
Values	off on
Default	on

ATTRIBUTE Vncs Vp insertedOutputDelay

Access	Read: Passive Write: Service
Description	This attribute specifies the amount of added output delay used to compensate for cross network delay variations. It applies to voice, modem and fax traffic. It is required to add output delay so that the statistical

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variation in the transit time of cells crossing the network does not cause gaps in speech. Backbone networks where high priority traffic consumes a high percentage of trunk bandwidth will require a higher *insertedOutputDelay* to compensate for the greater cell delay variation (CDV).

This attribute is ignored if this call runs on a ***1pDS1V*** or ***1pE1V*** card.

Mib: VncsCallServer

Values:
5
15
22
30
35
40
45
50
75
100
125
150

Units: msec

Default: 22

ATTRIBUTE Vncs Vp dtmfRegeneration (detGen)

Access:
Read: Passive
Write: Service

Description: This attribute specifies the DTMF regeneration parameter used during negotiation with the remote end across the subnet.

If *dtmfRegeneration* is ***on***, it is desired that DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is desired to be generated before being sent to the link.

If *dtmfRegeneration* is ***off***, it is desired that DTMF tones are transported transparently as audio.

DTMF regeneration is not supported on ***1pDS1V***, ***1pE1V***, and ***J2MV*** cards. On these cards, the value of *dtmfRegeneration* is ignored.

The negotiated DTMF regeneration is available in *Vsr Svs Framer negotiatedDtmfRegeneration*.

Mib: VncsCallServer

Values:
off
on

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Default	off

ATTRIBUTE Vncs Vp v17EncodedAsG711G726

Access	Read and write
Criticality	Process
Description	This attribute specifies how services using this *VoiceProfile* negotiate with V.17 fax machines. This attribute is not used unless the negotiated ***fax*** encoding, available in *Vsr Svs Framer negotiatedEncoding*, is ***v29V27Relay*** and the negotiated ***modemFax*** encoding, available in *Vsr Svs Framer negotiatedEncoding*, is ***g711***, ***g726*** or ***g711G726***. If *v17EncodedAsG711G726* is ***no,*** it is desired that V.17 fax machines be instructed to use V.29 so that V.29 fax traffic sent by fax machines can be demodulated and encoded using fax relay. If *v17EncodedAsG711G726* is ***yes***, it is desired that V.17 fax machines be permitted to use V.17 so that V.17 fax traffic sent by fax machines can be encoded using G.711 or G.726. The actual encoding performed depends on the negotiated minimum and maximum ***modemFax*** rates, available in *Vsr Svs Framer negotiatedRates*. The actual negotiation between services using this *VoiceProfile* and V.17 fax machines is available in *Vsr Svs Framer* ***negotiatedV17AsG711G726***.
Mib	VncsCallServer
Values	no yes
Default	no

ATTRIBUTE Vncs Vp voiceRates

Access	Read: Passive Write: Service
Description	This attribute specifies the minimum and maximum ***voice*** rate parameters used during negotiation with the remote end across the subnet. For ***g711G726*** encoding, rates can change during voice traffic due to congestion in the network. Therefore, you can have differing minimum and maximum rates for ***g711G726*** encoding. All other encodings have a fixed rate for the duration of voice traffic and so their minimum and maximum rates can not be modified. The negotiated minimum and maximum ***voice*** rates are available in *Vsr Svs Framer negotiatedRates*.
Mib	VncsCallServer
Array of	Decimal (8.0; 16.0; 24.0; 32.0; 64.0)

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Units	kbit/s	
Row	encoding g711G726 g728Only g729Only]	[g711Only
Column	rate max]	[min
Default	(64.0, 64.0, 24.0, 64.0, 16.0, 16.0, 8.0, 8.0)	

ATTRIBUTE Vncs Vp voiceEncodingChoice

Access
Read: Passive
Write: Service

Description

This attribute specifies preferences regarding the encoding of voice traffic. During the setup of an audio call, the local and remote ends negotiate a common encoding to use. The local end's ordered list of preferred encodings is given by all *voiceEncodingChoice* elements that are not set to *none*. Prior to negotiation, the local end removes encodings from its list that it cannot use for a particular call. For example, the card for a particular call may not support certain encodings. After this local check, the local end sends its voice encoding preferences to the remote end. The remote end chooses the most preferred encoding that it can support from the list and this encoding is the one used during voice traffic. If the remote end cannot support any encodings on the local end's list, a call does not proceed and an alarm is issued.

The current encoding and encoding rate are available in *Vsr Svs currentEncoding* and *Vsr Svs currentRate*.

The encoding choice ***g711Only*** specifies that pulse code modulation (PCM) defined by ITU-T G.711 should be performed to encode voice traffic for calls using this profile. In this case, all voice traffic is carried uncompressed at 64 kbit/s.

The encoding choice ***g711G726*** specifies that either pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 should be performed to encode voice traffic for calls using this profile. The actual encoding performed depends on congestion in the network and the settings of the ***g711G726*** row of the *voiceRates* attribute.

The encoding choice of ***g728Only*** specifies that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 should be performed to encode voice traffic for calls using this profile. In this case, all voice traffic is carried at 16 kbit/s.

The encoding choice of ***g729Only*** specifies that the Conjugated Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 should be performed to encode voice traffic for

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calls using this profile. In this case, all voice traffic is carried at 8 kbit/s.

The encoding choice of ***none*** specifies the end of the encoding choice list. No other encoding choice can appear after ***none***, and ***none*** cannot appear as the first choice. The only encoding choice that can appear more than once in *voiceEncodingChoice* is ***none***.

G.728 and G.729 encoding cannot be performed on a ***1pDS1V***, ***1pE1V*** or ***J2MV*** card.

The negotiated ***voice*** encoding is available in *Vsr Svs Framer negotiatedEncoding*.

Mib	VncsCallServer
Vector of	none g711Only g711G726 g728Only g729Only
Index	first second third
Default	(g729Only, g728Only, g711G726)

ATTRIBUTE Vncs Vp modemFaxRates

Access	Read: Passive Write: Service
Description	This attribute specifies the minimum and maximum modemFax and fax rate parameters used during negotiation with the remote end across the subnet. For ***g711Only*** encoding, all modem/fax traffic is carried uncompressed at 64 kbit/s, so this row of *modemFaxRates* cannot be changed. For ***g711G726*** encoding, rates can change during modemFax and fax traffic due to congestion in the network. The minimum and maximum rates that can occur during the ***modemFax*** traffic are specified by the ***g711G726*** row of *modemFaxRates*. The ***relay*** row of *modemFaxRates* specifies the minimum and maximum rates of sending fax machines that are allowed for fax relay. ***relay*** does not apply to modem calls. The negotiated minimum and maximum ***modemFax*** and ***fax*** rates are available in *Vsr Svs Framer negotiatedRates*.
Mib	VncsCallServer
Array of	Decimal (0.0; 0.3; 1.2; 2.4; 4.8; 7.2; 9.6; 12.0; 14.4; 16.0; 24.0; 32.0; 64.0)

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Units	kbit/s
Row	encoding [g711Only g711G726 relay]
Column	rate [min max]
Default	(64.0, 64.0, 32.0, 64.0, 0.0, 14.4)

ATTRIBUTE Vncs Vp modemFaxEncodingChoice

Access	Read: Passive Write: Service
Description	This attribute specifies preferences regarding the encoding of modemFax and fax traffic. During the setup of an audio call, the local and remote ends negotiate one common encoding to use during modemFax traffic and one common encoding to use during fax traffic. The local end's ordered list of preferred encodings is given by all *modemFaxEncodingChoice* elements that are not set to ***none***. Prior to negotiation, the local end removes encodings from its list that it cannot use for a particular call. For example, the card for a particular call may not be able to support certain encodings, or in the case of ***relay***, the rate of the sending machine may not be supported. After this local check, the local end sends its modem/fax encoding preferences to the remote end. The remote end uses the two most preferred encodings that it can support from the list to determine the encoding used during modemFax traffic and the encoding used during fax traffic. If the remote end cannot support any encodings on the local end's list, a call does not proceed and an alarm is issued. The current encoding and encoding rate are available in *Vsr Svs currentEncoding* and *Vsr Svs currentRate*. The encoding choice ***g711Only*** specifies that pulse code modulation (PCM) defined by ITU-T G.711 should be performed to encode modem/fax traffic for calls using this profile. In this case, all modem/fax traffic is carried uncompressed at 64 kbit/s. The encoding choice ***g711G726*** specifies that either pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 should be performed to encode modem/fax traffic for calls using this profile. The actual encoding performed depends on congestion in the network and the settings of the ***g711G726*** row of the *modemFaxRates* attribute. The encoding choice of ***relay*** specifies that modulated modem/fax traffic is demodulated and sent through the network as cells at the base rate of the sending machine. The types of modulation/demodulation supported are V.29 up to 9.6 kbit/s and V.27 up to 4.8 kbit/s. Only fax traffic can use ***relay***.

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If *modemFaxEncodingChoice* is ***relay, none, none***, modem traffic is not supported. If *modemFaxEncodingChoice* is ***none, none, none***, all traffic is treated like voice traffic.

Fax relay cannot be performed on ***1pDS1V, 1pE1V*** or ***J2MV*** cards.

The negotiated ***modemFax*** and ***fax*** encodings are available in *Vsr Svs Framer negotiatedEncoding*.

Mib	VncsCallServer
Vector of	none g711Only g711G726 relay
Index	first second third
Default	(relay, g711G726, none)

GROUP Vncs Vp Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Voice Networking profile component.
Mib	VncsCallServer

ATTRIBUTE Vncs Vp usageCount

Access	Read only
Description	This attribute counts the number of times this *VoiceProfile* is accessed to set up a connection. This counter wraps to 0 when it reaches its maximum value.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vncs

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Language type: U.S. English

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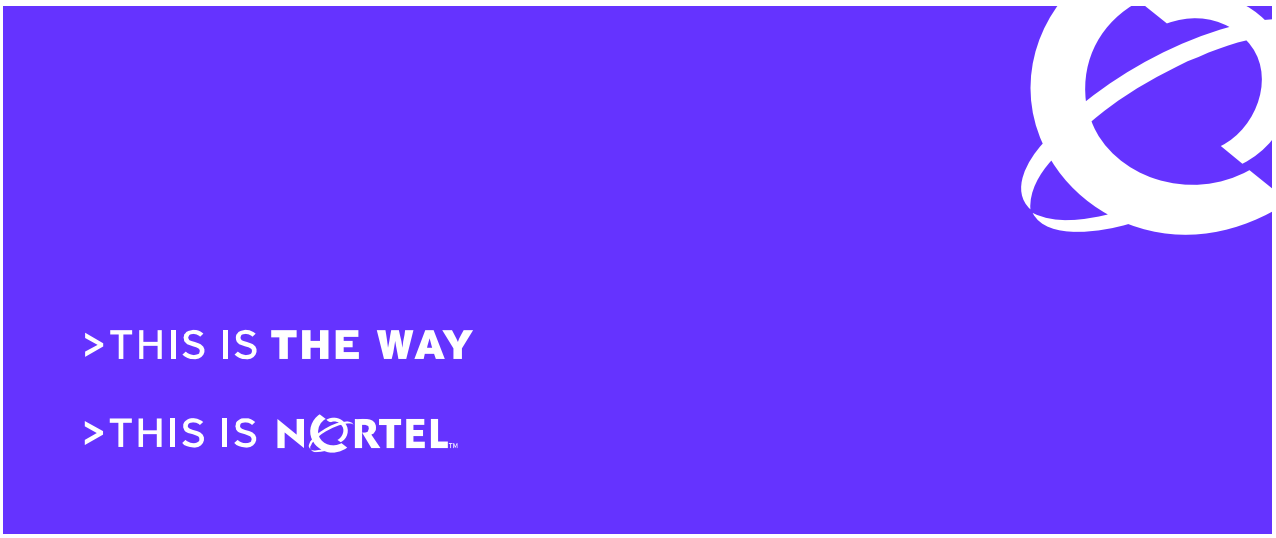

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - VRoute

NN10600-060

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COMPONENT VoiceRoute (VRoute)

Instance	Decimal (1..153)
Groups	GROUP VRoute Provisioned (Prov) GROUP VRoute CustomerIdentifierData (CidData) GROUP VRoute IfEntryProv (IfEntry) GROUP VRoute OsiState (State) GROUP VRoute OperationalStatus (OperStatus) GROUP VRoute Statistics (Stats) GROUP VRoute Operational (Oper)
COLLECTED STATS VoiceRoute	
Scope	Application
Description	*VoiceRoute/n* A *VoiceRoute* component defines the common characteristics of the connections to a Private Branch Exchange (PBX). There is normally one *VoiceRoute* per attached PBX.
Mib	VoiceNetworking
Subcomponents	COMPONENT VRoute Interface COMPONENT VRoute DataNetworkAddress (Dna) COMPONENT VRoute VoiceAccounting (Acct)
Opt. Subcomp.	COMPONENT VRoute IgDigitManipulation (Idm) COMPONENT VRoute EgDigitManipulation (Edm)
Dyn. Subcomp.	COMPONENT VRoute VnetRouteDebug (Debug)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP VRoute Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the provisionable attributes of a Voice Networking *VoiceRoute* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, it specifies the name of the customer that is using this *VoiceRoute*.
Mib	VoiceNetworking
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE VRoute typeOfRoute (tor)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the type of calls (either voice, data, or both voice and data) that this *VoiceRoute* will accept from the subnet and the local PBX. If *typeOfRoute* is set to ***voice***, then all data calls from the subnet and the local PBX will be rejected. If *typeOfRoute* is set to ***data***, then all voice calls from the subnet and the local PBX will be rejected. If *typeOfRoute* is set to ***voiceData***, then all data and voice calls will be accepted from the subnet and the local PBX.
Mib	VoiceNetworking
Values	voice data voiceData
Default	voiceData

ATTRIBUTE VRoute diallingPlan0 (dp0)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies how to map the numbering plan indication and the type of number into the *Vncs* database *diallingPlan0*. There are three numbering plans that are allowed, unknown, E.164, and private. Within each of these, there are eight possible type of numbers. Since the name for the type of numbers for the private numbering plans varies from protocol to protocol, a generic scheme has been adopted. ***unknown*** means that the sending and receiving switches have no

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	knowledge of the numbering plan. ***international*** means that the sending switch has identified the number format as matching the E.164 international dialling. ***national*** means that the sending switch has identified the number as conforming to the E.164 national dialling plan ***subscriber*** means that the number is the address of a customer conforming to the local public network. ***p0***, ***p1***, ***p2***, ***p3***, ***p4***, ***p5***, ***p6*** and ***p7*** are private numbering plans, with a type of number zero to seven. ***casUnknown*** means any number received from a Channel Associated Signalling (CAS) trunk.
Mib	VoiceNetworking
Set of	unknown international national subscriber p0 p1 p2 p3 p4 p5 p6 p7 casUnknown
Default	(unknown, international, national, subscriber, p0, p1, p2, p3, p4, p5, p6, p7, casUnknown)

ATTRIBUTE VRoute diallingPlan1 (dp1)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies how to map the numbering plan indication and the type of number into the *Vncs* database *diallingPlan1*. There are three numbering plans that are allowed, unknown, E.164, and private. Within each of these, there are eight possible type of numbers. Since the name for the type of numbers for the private numbering plans varies from protocol to protocol, a generic scheme has been adopted. ***unknown*** means that the sending and receiving switches have no knowledge of the numbering plan. ***international*** means that the sending switch has identified the number format as matching the E.164 international dialling plan. ***national*** means that the sending switch has identified the number as conforming to the E.164 national dialling plan ***subscriber*** means that the number is the address of a customer conforming to the local public network. ***p0***, ***p1***, ***p2***, ***p3***, ***p4***, ***p5***, ***p6*** and ***p7*** are private numbering plans, with a type

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	of number zero to seven. ***casUnknown*** means any number received from a Channel Associated Signalling (CAS) trunk.
Mib	VoiceNetworking
Set of	unknown international national subscriber p0 p1 p2 p3 p4 p5 p6 p7 casUnknown
Default	No default

ATTRIBUTE VRoute diallingPlan2 (dp2)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies how to map the numbering plan indication and the type of number into the *Vncs* database *diallingPlan2*. There are three numbering plans that are allowed, unknown, E.164, and private. Within each of these, there are eight possible type of numbers. Since the name for the type of numbers for the private numbering plans varies from protocol to protocol, a generic scheme has been adopted. ***unknown*** means that the sending and receiving switches have no knowledge of the numbering plan. ***international*** means that the sending switch has identified the number format as matching the E.164 international dialling plan. ***national*** means that the sending switch has identified the number as conforming to the E.164 national dialling plan ***subscriber*** means that the number is the address of a customer conforming to the local public network. ***p0***, ***p1***, ***p2***, ***p3***, ***p4***, ***p5***, ***p6*** and ***p7*** are private numbering plans, with a type of number zero to seven. ***casUnknown*** means any number received from a Channel Associated Signalling (CAS) trunk.

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Mib	VoiceNetworking
Set of	unknown international national subscriber p0 p1 p2 p3 p4 p5 p6 p7 casUnknown
Default	No default

ATTRIBUTE VRoute huntingAlgorithm (rha)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the type of hunting algorithm that should be used by the *VoiceRoute* and *VoiceSubroutes* when selecting a channel to make an outgoing call. ***bottomUpLinear*** means that a call from the subnet will be passed to the lowest instance of the *VoiceSubroute*s, which in turn will pass the call to the lowest instance of *SwitchedVoiceService*. If there are no available *SwitchedVoiceService*s in that *VoiceSubroute* then the process will be repeated for the next lowest instance of *VoiceSubroute.* ***topDownLinear*** means that a call from the subnet will be passed to the highest instance of the *VoiceSubroutes*, which in turn will pass the call to the highest instance of *SwitchedVoiceService*. If there are no available *SwitchedVoiceService*s in that *VoiceSubroute* then the process will be repeated for the next highest instance of *VoiceSubroute*.
Mib	VoiceNetworking
Values	bottomUpLinear topDownLinear
Default	bottomUpLinear

ATTRIBUTE VRoute minimumDigitsToRoute (mdtr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the number of digits that must be received before an address resolution request will be sent to the

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	VoiceNetworkingCallServer. Once this level has been exceeded an address resolution request will be sent for every digit received until the dialled number has been resolved in the database. This number should be set to a value which represents the average number of digits that will allow for a unique end-point to be identified. If the number is set too low, then the number of simultaneous calls that can be handled by the *VoiceNetworkingCallServer* will be reduced since the number of address resolution requests sent for each call will be increased. If it is set too high then address resolution request messages will not be sent to the *VoiceNetworkingCallServer* until the end-of-dial timer has expired (approximately 12 seconds after the last digit has been received). This can result in very long call setup times.
Mib	VoiceNetworking
Values	Decimal (1..16)
Default	3

ATTRIBUTE VRoute voiceNetworkingCallServer (vncs)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which *Vncs* instance should be used by all calls into this *VoiceRoute* from the PBX.
Mib	VoiceNetworking
Values	Link (Service, voiceRoutes)
Default	No default

ATTRIBUTE VRoute overrideDirectoryNumber (odn)

Access	Read: All Write: All
Criticality	Process
Description	The number specified here will be used in place of the dialled number to lookup the destination in the *VoiceNetworkingCallServer*. A null string means that the routing decision should be based on the dialled number. The numbering plan type that will be used will be *noAccessCode*.
Mib	VoiceNetworking
Values	BCD (0..24)
Default	""

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ATTRIBUTE VRoute privateNetworkIdentifer (pni)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the private network identifier (PNI) value. If the value is zero then connection-less supplementary service transport for TCAP formatted FACILITY messages is not supported.
Mib	VoiceNetworking
Values	Decimal (0..32700)
Default	0

ATTRIBUTE VRoute subroutes

Access	Read: All Write: All
Description	This attribute specifies all of the *VoiceSubroutes* which are associated with this *VoiceRoute*. There is a maximum of 16 *VoiceSubroutes* allowed per *VoiceRoute*.
Mib	VoiceNetworking
List of	Link (Service, voiceRoute)
List Size	16
Default	No default

GROUP VRoute CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VoiceNetworking

ATTRIBUTE VRoute customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to

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	issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	VoiceNetworking
Values	Decimal (0; 1..8191)
Default	0

GROUP VRoute IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	VoiceNetworking

ATTRIBUTE VRoute ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

ATTRIBUTE VRoute ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VoiceNetworking
Values	Decimal (1..65535)
Default	No default

GROUP VRoute OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE VRoute adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE VRoute operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE VRoute usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

GROUP VRoute OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VoiceNetworking

ATTRIBUTE VRoute snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

GROUP VRoute Statistics (Stats)

Properties	Operational
Description	This group provides the operational attributes for the *VoiceRoute* component. It contains information relating to calls that originate from the network.

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Mib	VoiceNetworking

ATTRIBUTE VRoute totalCallsFromSubnet

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been received from the subnet, including calls that fail. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE VRoute callsClearedNoChannel

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the subnet that were rejected when all of the in-service channels were busy. When a call is rejected for this reason, the cause code sent to the originator is 34, no circuit/channel available. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE VRoute callsClearedOutOfService

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the subnet that were rejected because all of the channels were out-of-service. A channel is considered out-of-service if it is unavailable for any reason other than it is being engaged in handling a call. That is, an operator lock of any of the components required for the channel's operation, or problems which interfere with the connection to the PBX, will cause the channel to be considered out-of-service. When a call is rejected for this reason, the cause code sent back to the originator is 27, destination out-of-service. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE VRoute callsRejected

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the subnet that were rejected because they were: 1) voice calls to a *typeOfRoute* which is set *to* ***data***, 2) data calls to a *typeOfRoute* which is set to ***voice***, 3) using a signalling protocol which is incompatible with this end. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

GROUP VRoute Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *VoiceRoute* component. It displays information relating to calls that originate from the subnet.
Mib	VoiceNetworking

ATTRIBUTE VRoute degradedSubroutes

Access	Read: All Write: Illegal
Description	This attribute indicates all of the *VoiceSubroute*s that have at least one *SwitchedVoiceService* whose *operationalState* is ***disabled***.
Mib	VoiceNetworking
List of	The name of the component
List Size	16
Default	No default

COLLECTED STATS VoiceRoute

Description	The statistics record generated by the VoiceRoute component.

ATTRIBUTE VRoute totalCallsFromSubnet

Description	This spooled statistic counts the calls that have been received from the subnet in the last statistics collection interval, including calls that fail.
Values	Decimal (0..65535)

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ATTRIBUTE VRoute callsClearedNoChannel

Description	This spooled statistic counts the calls from the subnet that were rejected when all of the in-service channels were busy in the last statistics collection interval. When a call is rejected for this reason, the cause code sent to the originator is 34, no circuit/channel available.
Values	Decimal (0..65535)

ATTRIBUTE VRoute callsClearedOutOfService

Description	This spooled statistic counts the calls from the subnet that were rejected because all of the channels were out-of-service in the last statistics collection interval. A channel is considered out-of-service if it is unavailable for any reason other than it is being engaged in handling a call. That is, an operator lock of any of the components required for the channel's operation, or problems which interfere with the connection to the PBX, will cause the channel to be considered out-of-service. When a call is rejected for this reason, the cause code sent back to the originator is 27, destination out-of-service.
Values	Decimal (0..65535)

ATTRIBUTE VRoute callsRejected

Description	This spooled statistic counts the calls from the subnet that were rejected in the last statistics collection interval because they were: 1) voice calls to a *typeOfRoute* which is set *to* ***data***, 2) data calls to a *typeOfRoute* which is set to ***voice***, 3) using a signalling protocol which is incompatible with this end.
Values	Decimal (0..65535)

COMPONENT VRoute VnetRouteDebug (Debug)

Scope	Application
Description	*VRoute/n Debug* The *Debug* component defines the debug operational characteristics of the *VoiceRoute* component.
Mib	VoiceNetworking
Common Verbs	Help List Display

COMPONENT VRoute Interface

Groups	GROUP VRoute Interface Provisioned (Prov)
Scope	Application

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Description	*VoiceRoute/n Interface* This component defines the interface between a voice route and a PBX. It is ignored for calls running on ***1pDS1V*** or ***1pE1V*** cards.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP VRoute Interface **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains attributes specifying the interface to a PBX.
Mib	VoiceNetworking

ATTRIBUTE VRoute Interface **ingressAudioGain**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data coming from outside the network before it is transferred across the network. It applies to voice, modem and fax traffic. For example, ingress gain is applied to audio data coming from a PBX. If *ingressAudioGain* is negative, a loss is applied. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in a network to ensure that the signal level from any point in the network to any other point is correct. *ingressAudioGain* is ignored for calls on ***1pDS1V*** and ***1pE1V*** cards. For calls running on these cards, ingress audio gain is not under the user's control and egress audio gain is determined by the *audioGain* attribute in the appropriate *Vncs/m VoiceProfile/n*.
Mib	VoiceNetworking
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE VRoute Interface **egressAudioGain**

Access	Read: Passive Write: Service
Criticality	Process

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Description	This attribute specifies the gain in dB that is applied to data leaving the network. It applies to voice, modem and fax traffic. For example, egress gain is applied to audio data going to a PBX. If *egressAudioGain* is negative, a loss is applied. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in the network to ensure that the signal level from any point in the network to any other point is correct. *egressAudioGain* is ignored for calls running on ***1pDS1V*** and ***1pE1V*** cards. For calls running on these cards, egress audio gain is determined by the *audioGain* attribute in the appropriate *Vncs/m VoiceProfile/n*.
Mib	VoiceNetworking
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE VRoute Interface **tandemPassThrough (tpt)**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether tandem pass through is desired. If *tandemPassThrough* is ***enabled***, tandem pass through is used if possible. If *tandemPassThrough* is ***disabled***, tandem pass through is not used under any circumstances. The actual state of tandem pass through is indicated in *Vsr Svs Framer tptStatus*. The negotiated tandem pass through is available in *Vsr Svs Framer negotiatedTandemPassThrough*. Tandem pass through is not supported on ***1pDS1V*** and ***1pE1V*** cards, so *tandemPassThrough* is ignored on these cards.
Mib	VoiceNetworking
Values	enabled disabled
Default	disabled

ATTRIBUTE VRoute Interface **comfortNoiseCap**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum level at which comfort noise is generated. The comfort noise is limited by *comfortNoiseCap* before

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egressAudioGain is applied. The default value of ***-40*** dBm0 equates to the maximum level of comfort noise available and effectively disables the *comfortNoiseCap*.

Mib	VoiceNetworking
Values	Signed (-78; -65; -60; -54; -52; -50; -48; -46; -44; -42; -40)
Units	dBm0
Default	-40

ATTRIBUTE VRoute Interface **speechHangoverTime**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of speech before silence suppression starts. It applies only to voice traffic. It is not used unless *Vsr Svs Framer negotiatedSilenceSuppression* is ***on***, ***congested*** or ***slowAndCongested***. Higher values of *speechHangoverTime* reduce undesirable clipping but increase bandwidth usage. *speechHangoverTime* is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** cards.
Mib	VoiceNetworking
Values	Decimal (10..500)
Units	msec
Default	150

ATTRIBUTE VRoute Interface **faxHangoverTimeG711G726**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of fax traffic before G.711/ G.726 fax idle suppression starts. It applies only if the negotiated fax encoding, available in *Vsr Svs Framer negotiatedEncoding*, is ***g711***, ***g726*** or ***g711G726*** and *Vsr Svs Framer negotiatedFisG711G726* is ***on***. Higher values of *faxHangoverTimeG711G726* reduce undesirable clipping but increase bandwidth usage. *faxHangoverTimeG711G726* is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** cards.

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Mib	VoiceNetworking
Values	Decimal (300..20000)
Units	msec
Default	1000

ATTRIBUTE VRoute Interface **modemFaxSpeechDiscrim (fsd)**

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether this *VoiceRoute* differentiates between modemFax traffic and speech. If *modemFaxSpeechDiscrim* is ***on*** and a false 2100 Hz tone is detected, any *Svs* using this route reverts to speech mode when speech is detected. *modemFaxSpeechDiscrim* is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** cards.
Mib	VoiceNetworking
Values	on off
Default	on

ATTRIBUTE VRoute Interface **echoTailDelay**

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum echo canceller tail delay coverage. It should be selected higher than the summation of the round trip delay of echo and hybrid response time. A ***32***ms setting is good for a radius of 2700 km, assuming that the signal is going through 4 exchanges and the hybrid response time is 6ms. A ***64***ms setting offers even greater coverage (more distance or more switches), with comparable convergence time. The recommended setting is ***64***ms. This attribute is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp,*** or ***1pTTC2mMvp*** card.
Mib	VoiceNetworking
Values	Decimal (32; 64)
Units	msec
Default	64

ATTRIBUTE VRoute Interface **echoReturnLoss**

Access	Read and write
Criticality	Process

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Description	This attribute specifies the echo return loss parameter of the echo canceller. If the line quality is poor, in terms of echo, selecting a higher value may allow the echo canceller to perform better. A side effect is that the voice level is attenuated by the same amount, which may not always be acceptable. This attribute is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp,*** or ***1pTTC2mMvp*** card.
Mib	VoiceNetworking
Values	Decimal (0; 3; 6)
Units	dB
Default	6

ATTRIBUTE VRoute Interface **ecanBypassMode**

Access	Read and write
Criticality	Process
Description	This attribute specifies when version 2 internal echo cancellers are placed in bypass mode on this *VoiceRoute*. This attribute only applies if ***v2*** of *echoCancellation* is ***on***. If *ecanBypassMode* is ***g165***, the internal echo canceller is placed in bypass mode as per ITU-T G.165. If *ecanBypassMode* is ***g164***, the internal echo canceller is placed in bypass mode as per ITU-T G.164. If *ecanBypassMode* is ***never***, the internal echo canceller is never placed in bypass mode. This mode should only be used for debugging. This attribute does not apply to ***1pE1V***, ***1pDS1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp,*** or ***1pTTC2mMvp*** cards.
Mib	VoiceNetworking
Values	g164 g165 never
Default	g165

ATTRIBUTE VRoute Interface **echoCancellation**

Access	Read and write
Criticality	Process
Description	This attribute specifies whether echo cancellation is performed on this *VoiceRoute*. ***v1*** specifies whether echo cancellation is performed by version 1 internal echo cancellers. ***v2*** specifies whether echo cancellation is performed by version 2 echo cancellers. If *echoCancellation* is ***on***, the internal echo canceller is enabled and echo cancellation is performed. If *echoCancellation* is ***off***, the internal echo canceller is placed in transparent bypass mode and echo cancellation is never performed.

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Mib	VoiceNetworking
Vector of	off on
Index	v1 v2
Default	(on, on)

COMPONENT VRoute DataNetworkAddress (Dna)

Groups	GROUP VRoute Dna Address
Scope	Application
Description	*vroute/n Dna* This is the description of the VRoute *Dna* component. It offers a subset of the generic *Dna* component attributes.
Mib	VoiceNetworking
Opt. Subcomp.	COMPONENT VRoute Dna HuntGroupMember (Hgm)
Common Verbs	Help List Display

GROUP VRoute Dna Address

Properties	Provisioned
Description	*Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. String of address digits is complemented by type of address and Npi. These attributes are used to interpret format of the address digits.
Mib	VoiceNetworking

ATTRIBUTE VRoute Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	VoiceNetworking
Values	x121 e164
Default	e164

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ATTRIBUTE VRoute Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	*Dna* attribute contains digits which form unique identifier of the customer interface. It can be compared (approximation only) to telephone number where phone number identifies unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	VoiceNetworking
Values	BCD (0..15)
Default	No default

COMPONENT VRoute Dna HuntGroupMember (Hgm)

Groups	GROUP VRoute Dna Hgm Provisioned (Prov) GROUP VRoute Dna Hgm Operational (Op)
Scope	Application
Description	*Vroute/n Dna/n HuntGroupMember* When present under a DNA component, this component specifies that the DNA is a member of a hunt group. Each hunt group member subscribes to at least one hunt group. The hunt group server's DNA must be added to the VnetHuntGroupAddress which is the sub-component of VnetHuntGroupMember. By adding the DNA correct availability of the vroute will be reported to the hunt group to process calls.
Mib	VoiceNetworking
Subcomponents	COMPONENT VRoute Dna Hgm HuntGroupAddress (HgAddr)
Common Verbs	Help List Display Add DELete

GROUP VRoute Dna Hgm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the interface parameters between the *HuntGroupMember* and the hunt group server.
Mib	VoiceNetworking

ATTRIBUTE VRoute Dna Hgm usageDeltaUpdateThreshold (aut)

Access	Read and write

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Description	This attribute specifies by how much the availability of a hunt group member must change before the member's availability is updated to the hunt group server. A value of zero ensures that an update will be sent if the value of the availability changes. The attribute that reports the availability is *currentAvailability*.
Mib	VoiceNetworking
Values	Decimal (0..4096)
Default	1

GROUP VRoute Dna Hgm Operational (Op)

Properties	Operational
Description	This group contains the operational attributes of the *HuntGroupMember* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute Dna Hgm maxAvailableChannels (maxAc)

Access	Read only
Description	This attribute indicates the maximum number of available channels for this *HuntGroupMember*.
Mib	VoiceNetworking
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE VRoute Dna Hgm availableChannels (ac)

Access	Read only
Description	This attribute indicates the number of available channels reported to the hunt group in the Availability Message Packet (AMP). It is incremented by the application when a channel is freed and decremented when a channel is active.
Mib	VoiceNetworking
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE VRoute Dna Hgm availabilityDelta (ad)

Access	Read only
Description	This attribute specifies the delta between the actual availability of a hunt group member and the hunt group member's *currentAvailability*. Once the absolute value of this attribute reaches the *usageDeltaUpdateThreshold,* the *currentAvailability* of the hunt group member is updated with the actual availability and the *availabilityDelta* is reset to 0.

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If this attribute is positive, the number of available channels has increased since the last Availability Message Packet was sent. If it is negative, the number of available channels has decreased since the last AMP was sent.

Mib	VoiceNetworking
Values	Signed (-4096..4096)
Default	No default

COMPONENT VRoute Dna Hgm HuntGroupAddress (HgAddr)

Instance	Decimal (0..15)
Groups	GROUP VRoute Dna Hgm HgAddr Address (Addr)
Scope	Application
Description	*Vroute/n Dna/n HgM HuntGroupAddress/n* This component specifies the hunt group address to which this member belongs. A hunt group member belongs to at least one hunt group.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP VRoute Dna Hgm HgAddr Address (Addr)

Properties	Provisioned
Description	This group contains DNA attributes common to all DNAs.
Mib	VoiceNetworking

ATTRIBUTE VRoute Dna Hgm HgAddr numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *DNA* that is entered. The address may belong to the X.121 or E.164 numbering plans.
Mib	VoiceNetworking
Values	x121 e164
Default	x121

ATTRIBUTE VRoute Dna Hgm HgAddr dataNetworkAddress (dna)

Access	Read and write

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Description	This attribute specifies the digits that form the unique identifier of the customer interface. It can be compared to a telephone number where phone number identifies unique telephone set. DNA digits are selected and assigned by network operators.
Mib	VoiceNetworking
Values	BCD (1..15)
Default	No default

COMPONENT VRoute VoiceAccounting (Acct)

Groups	GROUP VRoute Acct Provisioned (Prov)
Scope	Application
Description	*Vroute/n VoiceAccounting* The *VoiceAccounting* component defines the operational characteristics of the accounting system of the *Vroute* component. Accounting record generation for calls on the *Vroute* is managed by this component.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP VRoute Acct Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *VoiceAccounting* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute Acct accountCollection (aco)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies that accounting records are to be collected for the various reasons: ***bill***, ***test***, ***study***, ***audit***. The last of the parameters, ***force***, specifies that accounting records are to be collected irrespective of other collection reasons. If none of these reasons is set, then accounting will be suppressed.

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Mib	VoiceNetworking
Set of	bill test study audit force
Default	No default

ATTRIBUTE VRoute Acct accountClass (acl)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. The use of this attribute is decided by the network operator.
Mib	VoiceNetworking
Values	Decimal (0..255)
Default	0

ATTRIBUTE VRoute Acct serviceExchange (sre)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a user defined value, Data Service Exchange, as entered by the network operator and reported in the accounting record.
Mib	VoiceNetworking
Values	Decimal (0..255)
Default	0

ATTRIBUTE VRoute Acct digitsSuppressed (ds)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the number of trailing digits which will be suppressed in the *calledNumber* in the accounting records. Each of the specified number of trailing digits are replaced with an “X”. This option exists to satisfy privacy requirements in a number of countries.
Mib	VoiceNetworking

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Values	Decimal (0..8)
Default	0

ATTRIBUTE VRoute Acct accountingOptions (ao)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies optional settings for the voice networking accounting system. The options are: ***suppressTerminatingEndRecords*** - setting this option suppresses the generation of accounting records at the destination node. This reduces the volume of accounting data. This option has local significance only. It only suppresses the generation of accounting records for calls received by this node.
Mib	VoiceNetworking
Set of	suppressTerminatingEndRecords (ster)
Default	No default

COMPONENT VRoute lgDigitManipulation (ldm)

Groups	GROUP VRoute ldm Provisioned (Prov)
Scope	Application
Description	*VRoute/n lgDigitManipulation* This component specifies ingress digit manipulation properties.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP VRoute ldm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *lgDigitManipulation* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute ldm variant (var)

Access	Read and write
Criticality	Process

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Description	This attribute specifies the variant of ingress digit manipulation to perform. Selecting ***blindLeading*** specifies ingress digit manipulation is performed on the leading end of the called number. Selecting ***none*** disables ingress digit manipulation. A warning is generated if ***none*** is selected and *digitsToInsert* is not empty or *numDigitsToDelete* is not 0.
Mib	VoiceNetworking
Values	none blindLeading
Default	blindLeading

ATTRIBUTE VRoute Idm digitsToInsert (dti)

Access	Read and write
Criticality	Process
Description	This attribute specifies the digits to insert and only applies when *variant* is ***blindLeading***. There can be up to 16 digits inserted. Acceptable values are the digits 0 through 9 and the characters # (octothorpe) and * (star). An error is generated if any of the digits are not in the acceptable range. A warning is generated if *digitsToInsert* is not empty and the *variant* selection is ***none***.
Mib	VoiceNetworking
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE VRoute Idm numDigitsToDelete (ndtd)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of leading digits to delete and only applies when *variant* is ***blindLeading***. There can be up to 16 digits deleted. A warning is generated if *numDigitsToDelete* is not 0 and the *variant* selection is ***none***.
Mib	VoiceNetworking
Values	Decimal (0..16)
Default	0

ATTRIBUTE VRoute Idm callRouting (cr)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether calls are routed before or after performing digit manipulation and only applies when *variant* is ***blindLeading***. Selecting ***routeOnDialledDigits*** specifies that calls are routed prior to

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	performing ingress digit manipulation. Selecting ***routeOnModifiedDigits*** specifies that calls are routed after performing ingress digit manipulation.
Mib	VoiceNetworking
Values	routeOnDialledDigits routeOnModifiedDigits
Default	routeOnModifiedDigits

COMPONENT VRoute EgDigitManipulation (Edm)

Groups	GROUP VRoute Edm Provisioned (Prov)
Scope	Application
Description	*VRoute/n EgDigitManipulation* This component specifies egress digit manipulation properties.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP VRoute Edm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *EgDigitManipulation* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute Edm variant (var)

Access	Read and write
Criticality	Process
Description	This attribute specifies the variant of egress digit manipulation to perform. Selecting ***blindLeading*** specifies egress digit manipulation is performed on the leading end of the called number. Selecting ***none*** disables egress digit manipulation. A warning is generated if ***none*** is selected and *digitsToInsert* is not empty or *numDigitsToDelete* is not 0.
Mib	VoiceNetworking
Values	none blindLeading
Default	blindLeading

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ATTRIBUTE VRoute Edm digitsToInsert (dti)

Access	Read and write
Criticality	Process
Description	This attribute specifies the digits to insert and only applies when *variant* is ***blindLeading***. There can be up to 16 digits inserted. Acceptable values are the digits 0 through 9 and the characters # (octothorpe) and * (star). An error is generated if any of the digits are not in the acceptable range. A warning is generated if *digitsToInsert* is not empty and the *variant* selected is ***none***.
Mib	VoiceNetworking
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE VRoute Edm numDigitsToDelete (ndtd)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of leading digits to delete and only applies when *variant* is ***blindLeading***. There can be up to 16 digits deleted. A warning is generated if *numDigitsToDelete* is not 0 and the *variant* selected is ***none***.
Mib	VoiceNetworking
Values	Decimal (0..16)
Default	0

ATTRIBUTE VRoute Edm callHandlingWhenNoDigits (chwnd)

Access	Read and write
Criticality	Process
Description	This attribute specifies how calls are handled when no digits remain following egress digit manipulation and only applies when *variant* is ***blindLeading***. Selecting ***releaseCall*** specifies the call is released if no digits remain following egress digit manipulation. Selecting ***attemptCompletion*** specifies that call completion is attempted if no digits remain upon following egress digit manipulation.
Mib	VoiceNetworking
Values	attemptCompletion releaseCall
Default	releaseCall

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Nortel Multiservice Switch 7400, 15000, 20000

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vr

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COMPONENT VirtualRouter (Vr)

Instance	String (1..16, ASCII)
Groups	GROUP Vr AdministrativeControl (AdminContorl) GROUP Vr CustomerIdentifierData (CidData) GROUP Vr OperationalStatus (OperStatus) GROUP Vr OsiState (State) GROUP Vr IfNumberOper GROUP Vr Operational
Scope	Application
Description	*Vr/<string>* The *VirtualRouter* component represents an instance of a Router on the platform. *Vr* provides a mechanism to segregate router traffic and maintenance activities based on a logical separation of ports into separate *VirtualRouters*. At any time the number of *VirtualRouter* components existing in the current view plus the number of newly created *VirtualRouter* components in the edit view must be less than the maximum allowed number of virtual routers. This is regardless of how many *VirtualRouter* components may have been deleted in the edit view. Any *VirtualRouter* which, when created in the edit view, results in a total count greater than the maximum allowed, is labelled as invalid and must be deleted. It is recommended that the deletion of any *VirtualRouter* components

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existing in the current view should be activated using the *Activate Prov* command before creating any new *VirtualRouter* components.

Mib	VirtualRouter
Subcomponents	COMPONENT Vr MemoryManagement (Mm)
Opt. Subcomp.	COMPONENT Vr DifferentiatedServicesDomain (Dsd) COMPONENT Vr ProtocolPort (Pp) COMPONENT Vr NetSentry (Ns) COMPONENT Vr Bridge (Br) COMPONENT Vr Ip COMPONENT Vr Ipx COMPONENT Vr Snmp COMPONENT Vr SourceRouteEndStation (Sres) COMPONENT Vr CustomizationSpecification (CustSpec)
Dyn. Subcomp.	COMPONENT Vr IfTableEntry
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB TELNET Vr

Impact	Passive
Description	*Telnet -ipAddress(<IP address>) Vr/<string>* This command allows access to the Telnet client, attempting to set up a connection from this node to the specified IP address within the specified VR address space. Options: *ipAddress* - This mandatory option specifies the IP address of the remote node to which the user wants to Telnet within this VR's address space.

GROUP Vr AdministrativeControl (AdminContorl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	VirtualRouter

ATTRIBUTE Vr snmpAdminStatus

Access	Read and write

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Description	This sets the desired state of this Virtual Router (VR). The ***up*** state indicates the VR is operational. The ***down*** state indicates the VR is not operational. The ***down*** state is only valid when the *managementAccess* attribute is ***disabled***. The ***testing*** state is invalid for a VR.
Mib	VirtualRouter
Values	up down testing
Default	up

ATTRIBUTE vr managementAccess

Access	Read and write
Description	This attributes specifies the routing capabilities of this Virtual Router (VR) and controls the TCP access into that VR. External access is only permitted through the VR that has this attribute ***enabled***. The attribute allows the following subcomponents to be provisioned: *Ipx*, *Bridging*, *Sna*, *Sres*, *NetSentry*, and *Snmp*. Exactly one VR must have this attribute set to ***enabled.*** The first provisioned VR has its *managementAccess* attribute set to ***enabled*** by default. The *managementAccess* attribute of subsequent VRs is set to ***disabled***.
Mib	VirtualRouter
Values	disabled enabled
Default	No default

ATTRIBUTE vr virtualPrivateIntranetIdentifier (vpiId)

Access	Read and write
Description	This attribute specifies the Virtual Private Intranet (VPI) associated with this Virtual Router. If this attribute is not set to the default value, it must be unique on the node. Virtual Routers on different nodes that are interconnected with each other should have the same VPI value.

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	Note that this attribute will be obsoleted in the near future. It's functionality is replaced by the *virtualPrivateNetworkIdentifier* attribute. Any affected tools using this attribute should be converted to use the *vpnId* attribute instead.
Mib	VirtualRouter
Values	Decimal (0..2047)
Default	0

ATTRIBUTE Vr vpnMode (vpnm)

Access	Read and write
Description	This attribute specifies if the virtual router behaves as a carrier Virtual Router or a customer Virtual Router.
Mib	VirtualRouter
Values	customer carrier
Default	customer

ATTRIBUTE Vr virtualPrivateNetworkIdentifier (vpnId)

Access	Read and write
Description	This attribute specifies the Virtual Private Network (VPN) associated with this Virtual Router. This is a globally unique identifier composed of a three-octet long Organizationally Unique Identifier (OUI) followed by a four-octet long VPN index. The value "00-00-00-00-00-00-00" identifies an unspecified vpnId and should be set to other non-zero values when the autoDiscovery attribute under same virtual router ***vr***/x ***ip tunnel msep***/y is enabled.
Mib	VirtualRouter
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Vr virtualRouterProcessor (vrp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *LogicalProcessor* on which this *VirtualRouter* resides. The Management Virtual Router must reside on ***Lp/0***. The following card types may support a Virtual Router: ***CP***

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CPeD
CPeE
VpnXc

WARNING:
When changing this attribute the *operationalState* of the *LogicalProcessor* originally associated with this *VirtualRouter* must be ***enabled*** when the provisioning is activated. This is required for the IP control path to be updated correctly on all IP media logical processors.

If the original *LogicalProcessor* is not ***enabled*** when the provisioning is activated then the IP control path for all IP medias linked to this *VirtualRouter* will be disabled. The only method to recover the IP control path is to reset the LogicalProcessor for each of the associated IP medias.

Mib	VirtualRouter
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP vr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VirtualRouter

ATTRIBUTE vr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	VirtualRouter
Values	Decimal (0; 1..8191)

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Default	0

GROUP vr OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VirtualRouter

ATTRIBUTE vr snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	up

GROUP vr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VirtualRouter

ATTRIBUTE vr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — VirtualRouter

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — VirtualRouter

Values
enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — VirtualRouter

Values
idle
active (activ)
busy

Default — idle

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GROUP vr IfNumberOper

Properties	Operational
Description	This group contains the ifNumber attribute.
Mib	VirtualRouter

ATTRIBUTE vr ifNumber (ifN)

Access	Read only
Description	This attribute defines the number of *IfEntries* in the *IfTable*.
Mib	VirtualRouter
Values	Decimal (0..65535)
Default	No default

GROUP vr Operational

Properties	Operational
Description	This group contains Vr operational attributes
Mib	VirtualRouter

ATTRIBUTE vr trafficManagementMode (tmMode)

Access	Read only
Description	This attribute indicates the traffic management mode of the *Virtual Router.* The mode is ***diffServ*** if the *virtual router* has a *DifferentiatedServicesDomain* subcomponent. The mode is ***hybrid*** if *virtual router* does not have a *DifferentiatedServicesDomain* subcomponent and it is a customer *virtual router* (cVr) in an RFC2764 network where all the *virtual routers* used as the virtual connection gateway (VCG) has a *DifferentiatedServicesDomain* subcomponent. The mode is ***invalid*** if *virual router* does not have a *DifferentiatedServicesDomain* subcomponent and it is a customer *virtual router*(cVr) in an RCF2764 network where some but not all the *virtual routers* used as the virtual connecton gateway(VCG) have a *DifferentiatedServicesDomain* subcomponent. This case implies that the mode is hybrid with respect to some VCG instances and cos with respect to other VCG instances. The mode is ***cos*** in all other cases.
Mib	VirtualRouter
Values	cos diffServ hybrid invalid
Default	No default

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COMPONENT Vr DifferentiatedServicesDomain (Dsd)

Instance	multiservice (ms) classSelector (cs) assuredForwarding (af) packetVoice (pv) wirelessUmts (umts) custom (cu)
Groups	GROUP Vr Dsd LocalSourcePackets (Local)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> Vrf/<string> DifferentiatedServicesDomain/<enum>* This component and its supcomponents represent a Differentiated Services administration domain for traffic management and congestion control. The *DifferentiatedServicesDomain* component instance identifies the domain type. The following domain types are available: *Multiservice (ms)* *ClassSelector (cs)* *AssuredForwarding (af)* *PacketVoice (pv)* *WirelessUmts (umts)* *Custom (cu)* The *DifferentiatedServicesDomain* component is an optional subcomponent of the *Router*, *VpnRouteForwarder* and *VirtualRouter* components. The *Router*, *VpnRouteForwarder*, and *VirtualRouter* components can have at most one *DifferentiatedServicesDomain* subcomponent. If a *Router* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *Router* operates as by default as follows. IP packets with Differentiated ServiceCode Point (DSCP) field value 48, and MPLS packets with Experimental Bits (EXP) field value 6, are treated with Per Hop Behavior (PHB) CS6; other IP and MPLS packets are treated with PHB DF for default forwarding. Locally generated routing control packets are treated with PHB CS6; other locally generated packets are treated with PHB DF. Per Hop Behaviors CS6 and DF are configured to provide the following values of scheduling class for 8, 4, 3, 2 queues, drop precedence, and EXP for MPLS encapsulation: (5, 2, 2, 0, low, 6) and (0, 0, 0, 0,, high, 0), respectively. This is equivalent to the default the configuration of the *DifferentiatedServicesDomain/custom* component instance.

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If a *VpnRouteForwarder* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *VpnRouteForwarder* component uses the *DifferentiatedServicesDomain* configuration of the *Router.*

Mib: VirtualRouter

Opt. Subcomp.:
COMPONENT Vr Dsd MplsServiceMap (MplsMap)
COMPONENT Vr Dsd VpnDscpMap (VpnDscpMap)
COMPONENT Vr Dsd VpnCosMap (VpnCosMap)
COMPONENT Vr Dsd PerHopBehavior (Phb)
COMPONENT Vr Dsd TrafficClass (Tc)

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Dsd LocalSourcePackets (Local)

Properties: Provisioned

Description: This group contains provisioned attributes of the *DifferentiatedServicesDomain* component.

Mib: VirtualRouter

ATTRIBUTE Vr Dsd phbGeneralSource (phbG)

Access: Read and write

Description: This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is not used for network routing control.

For a locally-generated IP packet that is not used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value.

For a locally-generated ICMP echo request packet, the DSCP field is overridden by the *-tos* or *-dscp* option of the *Ping* command. For a locally-generated ICMP echo reply packet, the DSCP field is set to the DSCP value contained in the IP header of the received request packet. In any case, the forwarding behavior of the ICMP packet controlled by the *PerHopBehavior* component instance that is equal to value of the DSCP field.

Mib: VirtualRouter

Values:
Decimal (0..63)
df
ef

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	af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	df

ATTRIBUTE Vr Dsd phbRoutingSource (phbR)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is used for network routing control. For a locally generated IP packet that is used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value.
Mib	VirtualRouter
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0

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cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default cs6

ATTRIBUTE Vr Dsd linkToVpnDscpMap (vpnMap)

Access Read and write

Description This attribute specifies a *VpnDscpMap* component instance that is used to translate the value of the DSCP field in an IP packet forwarded by a customer Virtual Router (cVr) to the value of the DSCP field in the IP header that encapsulates the packet when it is forwarded by a Virtual Connection Gateway (VCG).

If no *VpnDscpMap* component is specified, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

This attribute is relevant only to a VR configured as a customer router in an IP VPN (RFC2764) network.

Mib VirtualRouter

Values Link (Service, linkToVpnDscpMapUsers)

Default No default

COMPONENT Vr Dsd MplsServiceMap (MplsMap)

Instance 0

Scope Application

Description *Vr/<string> Dsd/<enum> MplsServiceMap/<n>*
Rtr/<string> Dsd/<enum> MplsServiceMap/<n>

The subcomponents of the *MplsServiceMap* component specify mappings used to control how MPLS packets are forwarded over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The *MpslServiceMap/0* subcomponent instance is added automatically to a *DifferentiatedServicesDomain* subcomponent being added to a *Router* component where the *Ldp* subcomponent is already activated.

The *MpslServiceMap/0* subcomponent instance is not allowed under a *DifferentiatedServicesDomain* component whose immediate parent is a

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VirtualRouter component or a *VirtualRouteForwarder* component.

Mib	VirtualRouter
Opt. Subcomp.	COMPONENT Vr Dsd MplsMap ExperimentalBitsMap (ExpMap) COMPONENT Vr Dsd MplsMap PerHopBehaviorMap (PhbMap) COMPONENT Vr Dsd MplsMap MarkingPerformance
Common Verbs	Help List Display Add DELete

COMPONENT Vr Dsd MplsMap ExperimentalBitsMap (ExpMap)

Instance	0 1 2 3 4 5 6 7
Groups	GROUP Vr Dsd MplsMap ExpMap Provisioned (Prov) GROUP Vr Dsd MplsMap ExpMap Operational (Oper)
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>* *Rtr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>* This component specifies a mapping from a three-bit Experimental (EXP) field value in an MPLS label to a *DifferentiatedServicesDomain PerHopBehavior* component instance value. This mapping controls how an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value is treated when the packet is forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The *MplsServiceMap* component must have eight *ExperimentalBitMap* subcomponents, each with a unique instance value in the range from **0** to **7**. These subcomponents are added automatically when the

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MplsServiceMap component is created.

Mib VirtualRouter

Common Verbs
Help
List
Display
Add
DELete

GROUP Vr Dsd MplsMap ExpMap Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes of the *ExperimentalBitsMap* component.

Mib VirtualRouter

ATTRIBUTE Vr Dsd MplsMap ExpMap perHopBehavior (phb)

Access Read and write

Description This attribute specifies the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute must be equal to an exisiting *DifferentiatedServicesDomain PerHopBehavior* component instance value. A default value is set automatically according to a function of the *ExperimentalBitsMap* and *DifferentiatedServicesDomain* component instance values when the *ExperimentalBitsMap* component is created.

Mib VirtualRouter

Values
Decimal (0..63)
df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41

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af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default — No default

GROUP Vr Dsd MplsMap ExpMap **Operational (Oper)**

Properties — Operational

Description — This group contains the operational attributes of the *ExperimentalBitsMap* component.

Mib — VirtualRouter

ATTRIBUTE Vr Dsd MplsMap ExpMap **operPerHopBehavior (operPhb)**

Access — Read only

Description — This attribute indicates the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *perHopBehavior* provisioned attribute value.

Mib — VirtualRouter

Values — Decimal (0..63)
df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41
af42
af43

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cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default — No default

ATTRIBUTE Vr Dsd MplsMap ExpMap trafficClass (tc)

Access — Read only

Description — This attribute indicates the *TrafficClass* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *trafficClass* provisioned attribute value of the *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib — VirtualRouter

Values
critical
network
premium
platinum
gold
silver
bronze
standard

Default — No default

ATTRIBUTE Vr Dsd MplsMap ExpMap dropPrecedence (dp)

Access — Read only

Description — This attribute indicates the drop precedence value used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an LSP where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *dropPrecedence* provisioned attribute value of *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior*

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provisioned attribute value.

Mib	VirtualRouter
Values	low medium high
Default	No default

COMPONENT Vr Dsd MplsMap PerHopBehaviorMap (PhbMap)

Instance	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

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	39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Groups	GROUP Vr Dsd MplsMap PhbMap Provisioned (Prov) GROUP Vr Dsd MplsMap PhbMap Operational (Oper)

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Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb> Rtr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>*

This component specifies a mapping from a *PerHopBehavior* component instance value to a three-bit Experimental (EXP) field value.

This mapping controls how the EXP field in an MPLS label is marked when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat the packet prior to label encapsulation is used to select the EXP value for the label. If the *PerHopBehavior* component instance value used to treat the packet is not included among the existing *PerHopBehaviorMap* component instances, then the EXP value indicated by the *PerHopBehaviorMap* component whose instance is equal to 0 is used.

Each *PerHopBehaviorMap* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehaviorMap* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32 ,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services

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Code Point (DSCP) value.

Each *PerHopBehaviorMap* subcomponent of the *MplsServiceMap* must have a unique instance value. A *PerHopBehaviorMap* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehaviorMap* subcomponents with instance values equal to the *DifferentiatedServicesDomain PerHopBehavior* subcomponent instance values is added automatically when the *MplsServiceMap* component is created.

Mib VirtualRouter

Common Verbs
Help
List
Display
Add
DELete

GROUP Vr Dsd MplsMap PhbMap Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes of the *PerHopBehaviorMap* component.

Mib VirtualRouter

ATTRIBUTE Vr Dsd MplsMap PhbMap experimentalBits (exp)

Access Read and write

Description This attribute specifies a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation.

This attribute is set automatically to a default value according to a function of the *PerHopBehaviorMap* and *DifferentiatedServicesDomain* component instance values when the *PerHopBehaviorMap* component is created.

Mib VirtualRouter

Values Decimal (0..7)

Default No default

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GROUP Vr Dsd MplsMap PhbMap **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehaviorMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd MplsMap PhbMap **operExperimentalBits (operExp)**

Access	Read only
Description	This attribute indicates a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation. The value of this attribute is equal to the *experimentalBits* provisioned attribute.
Mib	VirtualRouter
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vr Dsd MplsMap PhbMap **operExperimentalBitsAlternative (operExpAlt)**

Access	Read only
Description	This attribute is similar to the *operExperimentalBits* operational attribute, except that it used only on PQC-based access FPs with ASIC Version 2.0 when an IP packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) via a PQC-based trunk FP. In such situations only, the value of this attribute, instead of the *operExperimentalBits* operational attribute value, is used to mark the Experimental (EXP) field of the MPLS label. If the *MplsServiceMap* does not have a *MarkingPerformance* subcomponent, then the value of this attribute is equal to the *experimentalBits* provisioned attribute; otherwise the value of this attribute is determined as explained in the next paragraph. If "***x***" is the *schedulingClass4Queues* operational attribute value of the *DifferentiatedServicesDomain PerHopBehavior* component whose instance value is equal to the *PerHopBehaviorMap* component instance value, then the *PerHopBehaviorMap experimentalBitsAlternative* operational attribute value is equal to the "***x***th" element of the

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MarkingPerformance experimentalBitsAlternative provisioned attribute.

Mib	VirtualRouter
Values	Decimal (0..7)
Default	No default

COMPONENT Vr Dsd MplsMap MarkingPerformance

Groups	GROUP Vr Dsd MplsMap MarkingPerformance Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance* *Rtr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance* This subcomponent is added to the *MplsServiceMap* component to enable high performance MPLS label encapsulation on some PQC-based ingress access FPs . IP packets that are forwarded from access FPs with PQC-ASIC Version 2.0 via PQC-based trunk FPs (any ASIC version) over an MPLS Label Switched Path (LSP) where the *MplsServiceMap* is applied are affected. Adding this component to the *MplsServiceMap* improves IP packet throughput on the affected access FPs but restricts how the three-bit Experimental (EXP) field of MPLS labels are marked, as explained in the description of the *operExperiementalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* component. Without the *MarkingPerformance* subcomponent, IP packets after being routed in hardware are encapsulated with MPLS labels by a software-assisted datapath that does not restrict how the EXP field of MPLS labels are marked. The *MarkingPerformance* subcomponent is added automatically to a *MpslServiceMap* subcomponent being added to a *DifferentiatedServicesDomain* component. This ensures that the high performance MPLS label encapsulation data path is used by default.
Mib	VirtualRouter
Common Verbs	Help List Display Add DELete

GROUP Vr Dsd MplsMap MarkingPerformance Provisioned (Prov)

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Properties Provisioned

Description This group contains the provisioned attributes of the *MarkingPerformance* component.

Mib VirtualRouter

ATTRIBUTE Vr Dsd MplsMap MarkingPerformance expermentalBitsAlternative (expAlt)

Access Read and write

Description This attribute is an array of four values that specifies a mapping of scheduling class values for four queues to three-bit Experimental (EXP) field values for marking MPLS labels.

This array controls the value of the *operExperimentalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* components, as explained in the description of that attribute.

Each element of this attribute is set automatically to a default value according to a function of the *DifferentiatedServicesDomain* component instance value and the element index when the *MarkingPerformance* component is created. The default values are listed below.

Default values for all domains, except *assuredForwarding (af)* and *custom(cu)* :

schedulingClass4Queues	*experimentalBitsAlternative*
3	***5***
2	***6***
1	***1***
0	***0***

Default values for *assuredForwarding (af)* domain:

schedulingClass4Queues	*experimentalBitsAlternative*
3	***7***
2	***5***
1	***3***
0	***0***

Default values for *custom(cu)* domain:

schedulingClass4Queues	*experimentalBitsAlternative*
3	***0***
2	***6***
1	***0***

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0 ***0***

Mib	VirtualRouter
Vector of	Decimal (0..7)
Index	Decimal (0..3)
Default	No default

COMPONENT Vr Dsd VpnDscpMap (VpnDscpMap)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Dsd VpnDscpMap Provisioned (Prov)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnDscpMap/<string>*

This component provides a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network.

When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network.

If the customer virtual router (cVr) has a *DifferentiatedServicesDomain* subcomponent where the *linkToVpnDscpMap* attribute is set, then the value of DSCP field in the IP packet forwarded by the customer Virtual Router (cVr) is translated by the mapping specified by the *assignedPhb* attribute of the associated *VpnDscpMap* to a DSCP value that is marked in the carrier IP header. If the customer *DifferentiatedServicesDomain linkToVpnDscpMap* attribute is not set, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnDscpMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***. It can be linked only to the *linkToVpnDscpMap* attribute of the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***customer***.

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The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *DiffServDomain* component is not allowed to have more than eight *VpnDscpMap* subcomponents.

No more than one *DiffServDomain* component instance is allowed to have *VpnDscpMap* subcomponents

Mib: VirtualRouter

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Dsd VpnDscpMap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes of the *VpnDscpMap* component.

Mib: VirtualRouter

ATTRIBUTE Vr Dsd VpnDscpMap linkToVpnDscpMapUsers (users)

Access: Read and write

Description: This attribute specifies all the customer virtual routers that use the *VpnDscpMap* component.

Mib: VirtualRouter

List of: Link (Service, linkToVpnDscpMap)

List Size: 256

Default: No default

ATTRIBUTE Vr Dsd VpnDscpMap assignedPhb (phb)

Access: Read and write

Description: This attribute specifies a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnDscpMap* component for more information.

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Mib	VirtualRouter
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Vr Dsd VpnCosMap (VpnCosMap)

Groups	GROUP Vr Dsd VpnCosMap Provisioned (Prov)
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnCosMap* This component provides a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network. If the customer virtual router (cVr) does not have a *DifferentiatedServicesDomain* subcomponent and the Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain VpnCosMap* component, then the IP CoS value assigned to the packet by the customer virtual router is translated by the mapping specified by the *assignedPhb* attribute of the *VpnCosMap* to a DSCP value that is marked in the carrier

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IP header. If the *DifferentiatedServicesDomain* of the Virtual Connection Gateway (VCG) does not have a *VpnCosMap* subcomponent, then the value of the DSCP field in the carrier IP header is set to ***0*** unless the customer header DSCP value is ***48*** (which corresponds to PHB CS6 for IP network control packets). In the latter case the carrier header DSCP value is set to ***48*** also.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnCosMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***.

The *VpnCosMap* component is used to assist the migration of an IP VPN network without *DifferentiatedServicesDomain* components to an IP VPN network where every customer Virtual Router (cVr) and Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain* component. The *VpnCosMap* components can be removed once the CoS to DiffServ network migration is completed.
The VpnCosMap component controls how the DSCP field in the carrier IP header is marked when IP packets are forwarded by the Virtual Connection Gateway (VCG) only if the operational value of the Vr trafficManagementMode (tmMode) attribute for the customer VirtualRouter component is set to hybrid .

Mib	VirtualRouter
Common Verbs	Help List Display Add DELete

GROUP Vr Dsd VpnCosMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnCosMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd VpnCosMap assignedPhb (phb)

Access	Read and write

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Description	This attribute specifies a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnCosMap* component for more information.
Mib	VirtualRouter
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..3)
Default	(0: 0, 1: 0, 2: 0, 3: 0)

COMPONENT Vr Dsd PerHopBehavior (Phb)

Instance	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

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60
61
62
63
df
ef

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af11
af12
af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

GROUP Vr Dsd Phb Provisioned (Prov)
GROUP Vr Dsd Phb Operational (Oper)
GROUP Vr Dsd Phb IpOperational (IpOper)

Scope

Application

Description

Vr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Vrf/<string> Dsd/<enum> PerHopBehavior/<phb>

The attributes of the *PerHopBehavior* component specify per-packet traffic management parameters that control how individual packets are forwarded.

A packet is associated with a *PerHopBehavior* component instance by a packet classification mechanism. For IP packets, the associated *PerHopBehavior* component instance is equal to the value of the six-bit Differentiated Services Code Point (DSCP) field in the IP header. For MPLS packets forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where an *MplsServiceMap* component is applied, the associated *PerHopBehavior* component instance is equal to value of the *perHopBehavior* attribute of the *MplsServiceMap ExperimentalBitsMap* component whose instance is equal to the value of the three-bit Experimental (EXP) field of the MPLS label.

If the *PerHopBehavior* component instance associated with a packet is not included among the existing *PerHopBehavior* subcomponents of the *DifferentiatedServicesDomain*, then the packet is treated according to the *PerHopBehavior* component whose instance is equal to 0.

Each *PerHopBehavior* component instance is equal to a decimal value in

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the range from 0 to 63. The following pairs of *PerHopBehavior* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehavior* subcomponent of the *DifferentiatedServicesDomain* must have a unique instance value. A *PerHopBehavior* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehavior* subcomponents is added automatically when the *DifferentiatedServicesDomain* component is created. The members of this set is a function of the *DifferentiatedServicesDomain* component instance as indicated below.

Multiservice (ms):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, EF, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22, AF23, AF11, AF12, AF13, DF

ClassSelector (cs):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, CS0

AssuredForwarding (af):
CS6, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22 AF23, AF11, AF12, AF13, DF

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Packet Voice (pv):
CS7, CS6, CS5, CS1, EF, AF11, AF12, AF13, DF

WirelessUmts (umts):
CS7, CS6, CS1, EF, AF31, AF32, AF33, AF21, AF22, AF23, DF

Custom (cu):
CS6, DF

Mib VirtualRouter

Common Verbs
Help
List
Display
Add
DELete

GROUP Vr Dsd Phb Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes of the *PerHopBehavior* component.

Mib VirtualRouter

ATTRIBUTE Vr Dsd Phb trafficClass (tc)

Access Read and write

Description This attribute specifies the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that specify the same packet scheduling characteristics.

This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PeHopBehavior trafficClass

CS7 (56) ***critical***
CS6 (48) ***network***
EF (46) ***premium***
CS5 (40) ***premium***
CS4 (32) ***platinum***
AF41 (34) ***platinum***
AF42 (36) ***platinum***

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AF43 (38)	***platinum***
CS3 (24)	***gold***
AF31 (26)	***gold***
AF32 (28)	***gold***
AF33 (30)	***gold***
CS2 (16)	***silver***
AF21 (18)	***silver***
AF22 (20)	***silver***
AF23 (22)	***silver***
CS1 (8)	***bronze***
AF11 (10)	***bronze***
AF12 (12)	***bronze***
AF13 (14)	***bronze***
CS0, DF (0)	***standard***
all others	***standard***

The value of this attribute must be equal to an existing *TrafficClass* subcomponent instance of the *DifferentiatedServicesDomain*.

If the *PerHopBehavior* component instance is ***0***, ***cs0***, or ***df***, then the value of this attribute must be ***standard***.

Mib — VirtualRouter

Values
critical
network
premium
platinum
gold
silver
bronze
standard

Default — No default

ATTRIBUTE Vr Dsd Phb dropPrecedence (dp)

Access — Read and write

Description — This attribute specifies the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

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This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PerHopBehavior *dropPrecedence*

CS7 (56) ***low***
CS6 (48) ***low***
EF (46) ***low***
CS5 (40) ***low***
CS4 (32) ***low***
AF41 (34) ***low***
AF42 (36) ***medium***
AF43 (38) ***high***
CS3 (24) ***low***
AF31 (26) ***low***
AF32 (28) ***medium***
AF33 (30) ***high***
CS2 (16) ***low***
AF21 (18) ***low***
AF22 (20) ***medium***
AF23 (22) ***high***
CS1 (8) ***low***
AF11 (10) ***low***
AF12 (12) ***medium***
AF13 (14) ***high***
CS0, DF (0) ***high***
all others ***high***

Mib VirtualRouter

Values
low
medium
high

Default No default

GROUP Vr Dsd Phb Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *PerHopBehavior* component that control the relative forwarding behaviors of packets.

Mib VirtualRouter

ATTRIBUTE Vr Dsd Phb operTrafficClass (operTc)

Access Read only

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Description	This attribute indicates the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that indicate the same packet scheduling characteristics. The value of this attribute is equal to value of the *trafficClass* provisioned attribute of the *PerHopBehavior* component.
Mib	VirtualRouter
Values	critical network premium platinum gold silver bronze standard
Default	No default

ATTRIBUTE Vr Dsd Phb schedulingClass8Queues (sc8q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	VirtualRouter
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vr Dsd Phb schedulingClass4Queues (sc4q)

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Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	VirtualRouter
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Vr Dsd Phb schedulingClass3Queues (sc3q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass3Queues* operational attribute of the *TrafficClass*

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component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib VirtualRouter

Values Decimal (0..2)

Default No default

ATTRIBUTE Vr Dsd Phb schedulingClass2Queues (sc2q)

Access Read only

Description This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass2Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib VirtualRouter

Values Decimal (0..1)

Default No default

ATTRIBUTE Vr Dsd Phb connectionClass (cos)

Access Read only

Description This attribute indicates the connection class value in the range from ***0*** to ***3*** that is associated with the Layer 2 connection used to forward a packet that uses the *PerHopBehavior* component instance when it is transmitted at an ATM or Frame Relay interface that has four Layer 2 connections, each with a different connection class value, to the next hop router.

See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information per-packet selection of egress connections.

The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass*

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component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib VirtualRouter

Values Decimal (0..3)

Default No default

ATTRIBUTE Vr Dsd Phb operDropPrecedence (operDp)

Access Read only

Description This attribute indicates the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

The value of this attribute is equal to value of the *dropPrecedence* provisioned attribute of the *PerHopBehavior* component.

Mib VirtualRouter

Values low
medium
high

Default No default

GROUP Vr Dsd Phb IpOperational (IpOper)

Properties Operational

Description This group contains *PerHopBehavior* operational attributes that pertain to IP packets only.

Mib VirtualRouter

ATTRIBUTE Vr Dsd Phb dscpDecimal (dscp)

Access Read only

Description This attribute indicates the decimal value of the six-bit Differentiated Services Code Point (DSCP) field of an IP packet that uses the *PerHopBehavior* component instance.

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Mib	VirtualRouter
Values	Decimal (0..63)
Default	No default

ATTRIBUTE Vr Dsd Phb tosDecimal (tos)

Access	Read only
Description	This attribute indicates the decimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	VirtualRouter
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vr Dsd Phb typeOfServiceFieldHex (hex)

Access	Read only
Description	This attribute indicates the hexadecimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	VirtualRouter
Values	Hex (H.0..H.ff)
Default	No default

COMPONENT Vr Dsd TrafficClass (Tc)

Instance	critical network premium platinum gold silver bronze standard
Groups	GROUP Vr Dsd Tc Provisioned (Prov) GROUP Vr Dsd Tc Operational (Oper)
Scope	Application

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Description	*Vr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Vrf/<string> Dsd/<enum> TrafficClass/<tc>* The attributes of the *TrafficClass* component specify per-packet traffic management parameters that control how individual packets are forwarded. A packet is associated with a *TrafficClass* component instance according to the *trafficClass* provisioned attribute of the *PerHopBehavior* component instance the packet is using. See the description of the *PerHopBehavior* component for an explanation of how *PerHopBehavior* component instances are associated with packets. The *DifferentiatedServicesDomain* must have a *TrafficClass/standard* subcomponent instance. Each of the *TrafficClass* component instances should be referenced by at least one of the *DifferentiatedServicesDomain PerHopBehavior* component instances.
Mib	VirtualRouter
Common Verbs	Help List Display Add DELete

GROUP Vr Dsd Tc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *TrafficClass* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd Tc schedulingClass8Queues (sc8q)

Access	Read and write
Description	This attribute specifies a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay

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tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

TrafficClass *schedulingClass8Queues*

---

critical ***7***
premium ***6***
network ***5***
platinum ***4***
gold ***3***
silver ***2***
bronze ***1***
standard ***0***

Mib — VirtualRouter

Values — Decimal (0..7)

Default — No default

ATTRIBUTE Vr Dsd Tc schedulingClass4Queues (sc4q)

Access — Read and write

Description — This attribute specifies a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at the interface where the packet is transmitted. Per-packet selection of egress connections is supported only if these conditions are all true:

i) for the *Vr* component, the value of the associated *mediaType* attribute under the *IpPort* component is ***frameRelay***, ***atmMpeLlcEncap***, or

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atmMpeVcEncap; for *Router* and *Vrf*, the media associated with the interface is *AtmMpe* or *IpoDlci*.
ii) more than one Layer 2 connection is configured to the next hop IP router, and
iii) each connection is configured with a different connection class value.

Normally the packet is transmitted on the connection whose connection class is equal to the *schedulingClass4Queues* value given to the packet. If that connection does not exist, then the connection having the next lower connection class is used. If that connection does not exist also, then the connection having the next higher connection class is used.

Locally generated IP multicast and IP broadcast packets are not eligible for per-packet selection of egress connections. Each of these packets is copied and transmitted individually on each of the available connections to the next hop IP router.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte* the connection class is specified by the *ipCos* attribute of the *StaticDlci* and *DynamicDlciDef* subcomponents. For *IpDlciGroup* and *IpoDlci* the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent.

If each Layer 2 connection is configured to provide different policing and scheduling characteristics, then the forwarding behaviors of IP and MPLS packets are differentiated as they transit through the Layer 2 network. In general, the scheduling characteristics of the connections should be configured to be better for numerically greater connection class values. For example, if four *AtmConnection* components are associated with *AtmIf* components configured for ATM service classes ***UBR***, ***nrtVBR***, ***rtVBR***, and ***CBR***, then the *ipCos* attributes of the *AtmConnection* components should be either ***0***,***1***,***2***, and ***3***, respectively, or ***0***,***1***,***3***, and ***2*** respectively.

The *schedulingClass4Queues* attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

Default values for all domains, except *assuredForwarding (af)*:

TrafficClass	*schedulingClass4Queues*
critical	***2***
premium	***3***
network	***2***
platinum	***1***
gold	***1***
silver	***1***
bronze	***1***
standard	***0***

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Default values for *assuredForwarding (af)* domain only:

TrafficClass	*schedulingClass4Queues*
critical	***2***
premium	***3***
network	***2***
platinum	***3***
gold	***2***
silver	***1***
bronze	***0***
standard	***0***

Mib VirtualRouter

Values Decimal (0..3)

Default No default

GROUP Vr Dsd Tc Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *TrafficClass* component.

Mib VirtualRouter

ATTRIBUTE Vr Dsd Tc operSchedulingClass8Queues (operSc8q)

Access Read only

Description This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component.

Mib VirtualRouter

Values Decimal (0..7)

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Default	No default

ATTRIBUTE Vr Dsd Tc operSchedulingClass4Queues (operSc4q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component.
Mib	VirtualRouter
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Vr Dsd Tc operSchedulingClass3Queues (operSc3q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

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The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3 or 2***, then the *operSchedulingClass3Queues* attribute value is ***2***; otherwise both values are equal.

Mib	VirtualRouter
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Vr Dsd Tc operSchedulingClass2Queues (operSc2q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3***, then the *operSchedulingClass2Queues* attribute value is ***1***; otherwise it is ***0***.
Mib	VirtualRouter
Values	Decimal (0..1)
Default	No default

COMPONENT Vr MemoryManagement (Mm)

Groups	GROUP Vr Mm Provisioned (Prov) GROUP Vr Mm Operational (Oper)
Scope	Application
Description	*Vr/<string> MemoryManagement* *Rtr/<string> MemoryManagement* *Rtr/<string> Vrf/<string> MemoryManagement*

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	This component represents a mechanism to control and monitor dynamic memory usage within a *VirtualRouter*, *Router*, or *VpnRouteForwarder*.
Mib	VirtualRouter
Common Verbs	Help List Display

GROUP Vr Mm Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisioned attributes for the *MemoryManagement* component.
Mib	VirtualRouter

ATTRIBUTE Vr Mm vrMaxHeapSpace (vrMax)

Access	Read and write
Description	This attribute specifies the maximum percentage of the total system heap space that is allowed for use by this *VirtualRouter*, *Router*, or *VpnRouteForwarder*. Attempted memory allocation beyond this limit will cause a *VirtualRouter* or *VpnRouteForwarder* to automatically lock. If memory allocation for a *Router* exceeds this limit, an alarm is raised but the component is not locked.
Mib	VirtualRouter
Values	Decimal (0..100)
Units	%
Default	100

GROUP Vr Mm Operational (Oper)

Properties	Operational
Description	This group contains all operational attributes for the *MemoryManagement* component.
Mib	VirtualRouter

ATTRIBUTE Vr Mm vrHeapSpaceBytesAllocated (vrBytesAlloc)

Access	Read only
Description	This attribute indicates the number of bytes of system dynamic memory which has been allocated to this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component.
Mib	VirtualRouter
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Vr Mm vrHeapSpaceAllocated (vrAlloc)

Access	Read only
Description	This attribute indicates the percentage of the maximum permitted heap space for this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component (as specified by *vrMaxHeapSpace* attribute) which is currently allocated.
Mib	VirtualRouter
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Vr ProtocolPort (Pp)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Pp AdministrativeControl (AdminControl) GROUP Vr Pp Provisioned (Prov) GROUP Vr Pp OperationalStatus (OperStatus) GROUP Vr Pp OsiState (State) GROUP Vr Pp Operational (Oper) GROUP Vr Pp NbmaAddress GROUP Vr Pp ProtocolPortAcct (PpAcct)
Scope	Application
Description	*Vr/<string> Pp/<string>* This component represents a logical interface to the network. Protocol Ports are associated with physical or logical media via a linkage attribute.

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Protocol Ports allow for individual upper layer protocols to be enabled or disabled.

Mib: VirtualRouter

Opt. Subcomp.:
COMPONENT Vr Pp ClusterTbBridgePort (Tbcl)
COMPONENT Vr Pp FddiEncapTbPort (FddiETB)
COMPONENT Vr Pp TransparentBridgePort (Tbp)
COMPONENT Vr Pp IpPort
COMPONENT Vr Pp IpxPort (IpxP)
COMPONENT Vr Pp SourceRouteBridgePort (SrBp)
COMPONENT Vr Pp SourceRouteTransparentBridgePort (SrtBp)
COMPONENT Vr Pp SrseBridgePort (Srse)
COMPONENT Vr Pp TbseBridgePort (Tbse)
COMPONENT Vr Pp SrsgBridgePort (Srsg)
COMPONENT Vr Pp TbsgBridgePort (Tbsg)
COMPONENT Vr Pp ClusterSrBridgePort (Srcl)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Pp AdministrativeControl (AdminControl)

Properties: Provisioned

Description: This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.

Mib: VirtualRouter

ATTRIBUTE Vr Pp snmpAdminStatus

Access: Read and write

Description: The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: VirtualRouter

Values:
up
down
testing

Default: up

GROUP Vr Pp Provisioned (Prov)

Properties: Provisioned

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Description	This group includes provisioned attributes specific to the ProtocolPort component.
Mib	VirtualRouter

ATTRIBUTE Vr Pp linkToMedia (media)

Access	Read and write
Description	This attribute defines the Media Application which this Protocol Port is using as an interface to the network.
Mib	VirtualRouter
Values	Link (Service, linkToProtocolPort)
Default	No default

GROUP Vr Pp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VirtualRouter

ATTRIBUTE Vr Pp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	up

GROUP Vr Pp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VirtualRouter

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ATTRIBUTE Vr Pp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VirtualRouter
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VirtualRouter
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	VirtualRouter
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Operational (Oper)

Properties	Operational
Description	This group includes operational attributes specific to the ProtocolPort component.
Mib	VirtualRouter

ATTRIBUTE Vr Pp ifIndex

Access	Read only
Description	This represents the SNMP ifIndex which is associated with this PP. This ifIndex can be used to extract detailed information about the PP from the ifTable.
Mib	VirtualRouter
Values	Decimal (1..65535)
Default	No default

GROUP Vr Pp NbmaAddress

Properties	Operational
Description	This group contains the operational attributes of the ProtocolPort component specific to NHRP.
Mib	VirtualRouter

ATTRIBUTE Vr Pp atmAddress

Access	Read only
Description	This attribute indicates the ATM address which is associated with this protocol port. NHRP uses this address to establish shortcut connections. This attribute is not displayed if NHRP is not provisioned on this protocol port.
Mib	VirtualRouter

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Values	String (0..20, Hex)
Default	No default

GROUP Vr Pp ProtocolPortAcct (PpAcct)

Properties	Provisioned
Description	This group includes the protocol port Accounting options for the *ProtocolPort* component.
Mib	VirtualRouter

ATTRIBUTE Vr Pp accountingControl (acc)

Access	Read and write
Description	This attribute is used to control accounting for the protocol port. ***disable*** signifies that accounting is disabled unconditionally with this option for the *ProtocolPort.* ***sameAsProtocol*** signifies that accounting for the *ProtocolPort* is controlled by the attribute *accountCollection* in the *Vr Ip* component.
Mib	VirtualRouter
Values	sameAsProtocol disabled
Default	sameAsProtocol

COMPONENT Vr Pp ClusterTbBridgePort (Tbcl)

Groups	GROUP Vr Pp Tbcl Provisioned (Prov) GROUP Vr Pp Tbcl TbProvisioned (TbProv) GROUP Vr Pp Tbcl StpProvisioned (StpProv) GROUP Vr Pp Tbcl DomainInfoProvisioned (DIProv) GROUP Vr Pp Tbcl OsiState (State) GROUP Vr Pp Tbcl OperationalStatus (OperStatus) GROUP Vr Pp Tbcl Operational (Oper) GROUP Vr Pp Tbcl TbOperational (TbOper) GROUP Vr Pp Tbcl StpOperational (StpOper) GROUP Vr Pp Tbcl Statistics (Stats)
Scope	Application
Description	*Vr/<string> Pp/<string> ClusterTbBridgePort* This component represents the functionality called Cluster Bridging. Cluster Bridging allows for MAC frames, carrying packets belonging a certain network protocol, to be bridged and routed at the same time. Also, it provides for a convenient way to manage the entire cluster of LANs, using a single attachment point to the cluster of LANs, the Cluster Bridge Port. To realize these features, the network protocol(s) should also be

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provisioned on same port as the Cluster Bridge Port. *ClusterTbBridgePort* represents a cluster of Tb LANs.

Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Pp Tbcl NetSentry (Ns)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp Tbcl Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp Tbcl portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape

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	routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Tbcl TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge
Values	disabled enabled
Default	disabled

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GROUP Vr Pp Tbcl StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Tbcl portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Tbcl stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If

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	the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbcl portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Tbcl pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Tbcl pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

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GROUP Vr Pp Tbcl DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Tbcl preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

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GROUP Vr Pp Tbcl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Tbcl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp Tbcl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Tbcl OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

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GROUP Vr Pp Tbcl Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbcl upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbcl downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbcl bridgingMode (bm)

Access	Read only

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Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Tbcl bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Tbcl bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort

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srEncapSrBridgePort
srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort
clusterTbBridgePort
snaDlrBridgePort
unknown

Default — No default

ATTRIBUTE Vr Pp Tbcl ifIndex (ifin)

Access — Read only

Description — This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib — Bridge

Values — Decimal (1..65535)

Default — No default

ATTRIBUTE Vr Pp Tbcl mtuExceededDiscards (med)

Access — Read only

Description — This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295.
This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.

Mib — Bridge

Values — Decimal (0..4294967295)

Default — 0

GROUP Vr Pp Tbcl TbOperational (TbOper)

Properties — Operational

Description — This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode

Mib — Bridge

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ATTRIBUTE Vr Pp Tbcl maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.

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Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl inFrames (if)

Access	Read only

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Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbcl StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Tbcl stpTypeOper (stptOper)

Access	Read only

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Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbcl designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Tbcl pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbcl designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Tbcl designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.

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Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Tbcl forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Tbcl Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

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ATTRIBUTE Vr Pp Tbcl badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl outFilterDiscards (ofd)

Access	Read only

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Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp Tbcl NetSentry (Ns)

Groups	GROUP Vr Pp Tbcl Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp Tbcl Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbcl Ns outgoingFilter (of)

Access	Read and write

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Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp FddiEncapTbPort (FddiETB)

Groups	GROUP Vr Pp FddiETB Provisioned (Prov) GROUP Vr Pp FddiETB TbProvisioned (TbProv) GROUP Vr Pp FddiETB StpProvisioned (StpProv) GROUP Vr Pp FddiETB DomainInfoProvisioned (DIProv) GROUP Vr Pp FddiETB OsiState (State) GROUP Vr Pp FddiETB OperationalStatus (OperStatus) GROUP Vr Pp FddiETB Operational (Oper) GROUP Vr Pp FddiETB TbOperational (TbOper) GROUP Vr Pp FddiETB StpOperational (StpOper) GROUP Vr Pp FddiETB Statistics (Stats)
Scope	Application
Description	*Vr/<string> Pp/<string> FddiEncapTbPort* This component represents a FDDI encapsulated port, working in the TB mode. It contains all the attribute groups (provisionable and operational) necessary for the working of this bridge port. In this mode the domain information can optionally be preserved in the frames. This bridge port is characterized as a backbone port and can be used to tunnel TB frames, through the backbone. It participates in the transparent bridge (man) spanning tree protocol. Backbone ports are not associated with any domain as multiple domains should be able to multiplex traffic through them and thus share the backbone's bandwidth. Please note that when this bridge port is provisioned multiple instances of the component *SpanningTreeProtocol* exist, there should exist exactly one instance of the *SpanningTreeProtocol* component with its attribute *stpMode* set to a value of ***backbone***.
Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Pp FddiETB NetSentry (Ns)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp FddiETB Provisioned (Prov)

Properties	Provisioned

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Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp FddiETB portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)

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Default	0

GROUP Vr Pp FddiETB TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge
Values	disabled enabled
Default	disabled

GROUP Vr Pp FddiETB StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge

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Values	up down
Default	up

ATTRIBUTE Vr Pp FddiETB portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp FddiETB stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp FddiETB portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.

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Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp FddiETB pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp FddiETB pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp FddiETB DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293.

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This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.

Mib — Bridge

Values — Decimal (1..4294967293)

Default — 1

ATTRIBUTE Vr Pp FddiETB preserveDomain (pds)

Access — Read and write

Criticality — Component

Description — This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network.
If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it.
Preserve domain is relevant only when used in conjunction with ATM MPE.

Mib — Bridge

Values — off
on

Default — No default

GROUP Vr Pp FddiETB OsiState (State)

Properties — Operational

Description — This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — Bridge

ATTRIBUTE Vr Pp FddiETB adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively

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prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Bridge

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr Pp FddiETB operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Bridge

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Pp FddiETB usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp FddiETB OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp FddiETB Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

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ATTRIBUTE Vr Pp FddiETB upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp FddiETB downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp FddiETB bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp FddiETB bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.

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Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp FddiETB bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp FddiETB ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

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ATTRIBUTE Vr Pp FddiETB mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp FddiETB TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static

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table entries.
This attribute, *badVerifyDiscards*, is directly influenced by:
1. *secureOption* and
2. the static table entries.
This counter wraps around its maximum value of 4294967295.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB learningDiscards (ld)

Access	Read only

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Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

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GROUP Vr Pp FddiETB StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp FddiETB stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp FddiETB designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp FddiETB pathCostOper (pco)

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Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp FddiETB designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp FddiETB designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp FddiETB forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB blockingDiscards (bd)

Access	Read only

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Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp FddiETB Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Pp FddiETB tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp FddiETB NetSentry (Ns)

Groups	GROUP Vr Pp FddiETB Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In

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essence, it allows for the definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.

Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp FddiETB Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp FddiETB Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp TransparentBridgePort (Tbp)

Groups	GROUP Vr Pp Tbp Provisioned (Prov) GROUP Vr Pp Tbp TbProvisioned (TbProv) GROUP Vr Pp Tbp StpProvisioned (StpProv) GROUP Vr Pp Tbp DomainInfoProvisioned (DIProv) GROUP Vr Pp Tbp OsiState (State) GROUP Vr Pp Tbp OperationalStatus (OperStatus) GROUP Vr Pp Tbp Operational (Oper) GROUP Vr Pp Tbp TbOperational (TbOper)

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GROUP Vr Pp Tbp StpOperational (StpOper)
GROUP Vr Pp Tbp Statistics (Stats)

Scope: Application

Description: *Vr/<string> Pp/<string> TransparentBridgePort*
This component represents a transparent bridge port. It contains all the attribute groups (provisionable and operational) that are required for the operation of such a port. Transparent bridge ports participate in the transparent bridging spanning tree protocol. They also have associated with them a domain number. Domains are logical partitions of an extended network and each partition is completely segregated in terms of traffic. Each domain has an identifier that identifies it uniquely, called the domain number.

Mib: Bridge

Opt. Subcomp.: COMPONENT Vr Pp Tbp NetSentry (Ns)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Pp Tbp Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.

Mib: Bridge

ATTRIBUTE Vr Pp Tbp fragmentIp (fIp)

Access: Read and write

Description: This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.

Mib: Bridge

Values:
off
on

Default: off

ATTRIBUTE Vr Pp Tbp portNum (pNum)

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Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Tbp TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC

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address found in the frame.
c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty.
This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.

Mib	Bridge
Values	disabled enabled
Default	disabled

GROUP Vr Pp Tbp StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Tbp portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.

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Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Tbp stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbp portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Tbp pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Tbp pathCostMethod (pcm)

Access	Read and write

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Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Tbp DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Tbp preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network.

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If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it.
Preserve domain is relevant only when used in conjunction with ATM MPE.

Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Tbp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Tbp operationalState (osiOper)

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Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp Tbp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Tbp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates

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	the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Tbp Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbp upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbp downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge

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Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbp bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Tbp bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Tbp bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet

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fddiEncapsulatingBridgePort
vnsBridgePort
frameRelayBridgePort
pppBridgePort
smdsBridgePort
vcpBridgePort
x25BridgePort
atmMpeBridgePort
srEncapSrBridgePort
srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort
clusterTbBridgePort
snaDlrBridgePort
unknown

Default — No default

ATTRIBUTE Vr Pp Tbp ifIndex (ifin)

Access — Read only

Description — This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib — Bridge

Values — Decimal (1..65535)

Default — No default

ATTRIBUTE Vr Pp Tbp mtuExceededDiscards (med)

Access — Read only

Description — This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295.
This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.

Mib — Bridge

Values — Decimal (0..4294967295)

Default — 0

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GROUP Vr Pp Tbp TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp Tbp maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry,

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where the input port is this bridge port.
b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state.
c) for spanning tree bpdus that are locally processed.
This counter wraps around its maximum value of 4294967295.
It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.

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Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbp StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening

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	learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Tbp stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbp designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Tbp pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbp designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)

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Default	No default

ATTRIBUTE Vr Pp Tbp designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Tbp forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

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GROUP Vr Pp Tbp Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.

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Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp Tbp NetSentry (Ns)

Groups	GROUP Vr Pp Tbp Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp Tbp Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.

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Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbp Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp IpPort

Groups	GROUP Vr Pp IpPort Provisioned (Prov) GROUP Vr Pp IpPort SresProvisioned (SresProv) GROUP Vr Pp IpPort AdministrativeControl (AdminControl) GROUP Vr Pp IpPort Operational (Oper) GROUP Vr Pp IpPort RelayBcOperational (RelayBcOper) GROUP Vr Pp IpPort OsiState (State) GROUP Vr Pp IpPort OperationalStatus (OperStatus)
Scope	Application
Description	*Vr<string> Pp<string> IpPort* The *IpPort* component contains IP attributes specific to this port.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Pp IpPort IngressServices (IS) COMPONENT Vr Pp IpPort EgressServices (ES) COMPONENT Vr Pp IpPort IpLogicalInterface (LogicalIf) COMPONENT Vr Pp IpPort NetSentry (Ns) COMPONENT Vr Pp IpPort BootpPort (BootpP) COMPONENT Vr Pp IpPort VrrpPort COMPONENT Vr Pp IpPort CriticalIp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpPort Provisioned (Prov)

Properties	Provisioned

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Description	This group contains provisionable attributes for IP ports.
Mib	Ip

ATTRIBUTE Vr Pp IpPort maxTxUnit (mtu)

Access	Read and write
Description	This attribute specifies the IP MTU (Maximum Transmission Unit) supported by this *IpPort*. The specified MTU must be within the valid range for the *IpPort* media type.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Vr Pp IpPort arpStatus

Access	Read and write
Description	This attribute specifies whether ARP is enabled or disabled on this *IpPort*. If ***auto*** is specified, an appropriate value will be selected based on the *IpPort* media type.
Mib	Ip
Values	enabled disabled auto
Default	auto

ATTRIBUTE Vr Pp IpPort proxyArpStatus

Access	Read and write
Description	This attribute specifies whether Proxy ARP is enabled or disabled for this *IpPort*.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort arpNoLearn

Access	Read and write
Description	This attribute specifies whether or not dynamic host entries will be installed in the ARP table when ARP packets are received on this *IpPort*.
Mib	Ip
Values	enabled disabled

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Default	disabled

ATTRIBUTE Vr Pp IpPort sendRedirect

Access	Read and write
Description	This attribute specifies whether or not ICMP host redirects will be sent out this *IpPort*.
Mib	Ip
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Pp IpPort multicastStatus

Access	Read and write
Description	This attribute specifies whether or not IP multicast packets can be sent out this *IpPort*. If ***auto*** is specified, an appropriate value will be selected based on the *IpPort* media type.
Mib	Ip
Values	enabled disabled auto
Default	auto

ATTRIBUTE Vr Pp IpPort relayAddress

Access	Read and write
Description	This attribute specifies a relay broadcast address for this *IpPort*. Each packet, received on this *IpPort*, meeting the relay broadcast criteria will be forwarded to the specified relay broadcast address. An relay address of all zero's indicates no relay broadcast address.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort relayBroadcast

Access	Read and write
Description	This attribute specifies how packets, received on other *IpPort*s, meeting the relay broadcast criteria, will be forwarded out this *IpPort*. The three options are described as follows: ***enabled***: packets will be forwarded out this *IpPort*. ***disabled***: packets will not be forwarded out this *IpPort*. ***auto***: packets will be forwarded out this *IpPort* only when the bridge state is forwarding.

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Mib	Ip
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Vr Pp IpPort linkModel

Access	Read and write
Criticality	Component
Description	This attribute specifies the link model to use when the media type for this *IpPort* is ***PPP*** (Point to Point Protocol). A value of ***localAreaNetwork*** causes IP to treat this *IpPort* like a LAN. A value of ***pointToPoint*** causes IP to treat this *IpPort* like two directly connected IP hosts.
Mib	Ip
Values	localAreaNetwork (lan) pointToPoint (ptop)
Default	localAreaNetwork

ATTRIBUTE Vr Pp IpPort lanModel

Access	Read and write
Criticality	Component
Description	This attribute specifies the lan model to use for this *IpPort*.
Mib	Ip
Values	localAreaNetwork (lan) nonBroadcastMultipleAccess (nbma)
Default	localAreaNetwork

ATTRIBUTE Vr Pp IpPort encap

Access	Read and write
Description	This attribute specifies the encapsulation type to be used when sending packets out this *IpPort*. If ***auto*** is specified, an appropriate value is selected based on the *IpPort* media type. The values ***ieee8023*** and ***ethernet*** can only be specified if the media type is ethernet. Otherwise, ***auto*** must be specified. For ethernet media type, the default encapsulation is ***ethernet***.
Mib	Ip
Values	ieee8023 ethernet auto

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Default	auto

ATTRIBUTE Vr Pp IpPort icmpMaskReply

Access	Read and write
Description	This attribute specifies whether or not replies will be generated in response to ICMP Address Mask Requests received on this *IpPort.*
Mib	Ip
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Pp IpPort directedBroadcast

Access	Read and write
Description	This attribute specifies whether or not directed broadcast to physical broadcast translation is enabled for incoming traffic on this *IpPort.* The IP router requirement (RFC1812) says this translation should be ***enabled***; however, in some network environments, setting this attribute to ***disabled*** may prevent operational problem such as broadcast storms. Note that in some configuration, setting this attribute to ***disabled*** may cause Bootp to fail.
Mib	Ip
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Pp IpPort allowMcastMacDest (ammd)

Access	Read and write
Description	This attribute specifies whether a multicast destination MAC address is valid on this *IpPort* or not. Setting this attribute to ***enabled*** results in non-standard behavior and is intended for applications such as transparent server backup. Multicast destination MAC address is only supported on LAN media.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort cosPolicyAssignment (policy)

Access	Read and write
Description	This attribute specifies the *CosPolicyGroup* the *IpPort* is using.

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If this attribute is not set, then the *cosPolicyAssignment* attribute of the *Ip* specifies the *CosPolicyGroup* in use.

The assigned *CosPolicyGroup* controls the forwarding behavior of IP packets recieved and transmitted at the *IpPort*. See the description of *Vr Ip CosPolicyGroup* for more information.

If the *VirtualRouter* has a *DifferentiatedServicesDomain* subcomponent, then this attribute cannot be set.

The assigned *CosPolicyGroup* must be a subcomponent of the same *VirtualRouter*.

Mib	Ip
Values	Link (Service, linkToPolicyUsers)
Default	No default

ATTRIBUTE Vr Pp IpPort filterAssignment (filtAss)

Access	Read and write
Description	This attribute specifies the *Filter* the *IpPort* is using. If this attribute is not set, then the *filterAssignment* attribute of the *Ip* specifies the *Filter* in use. This attribute cannot be set if the *linkToMedia* attribute of the parent *ProtocolPort* is linked to *Vr Ip Tunnel Sep* or *Vr Ip Tunnel Msep*. The assigned *Filter* must be a subcomponent of the same *Virtual Router*.
Mib	Ip
Values	Link (Service, linkToFilterUsers)
Default	No default

ATTRIBUTE Vr Pp IpPort ipCos

Access	Read and write
Description	This attribute specifies the IP connection class value of the link layer connection used by the *IpPort* if the media linked to the *ProtocolPort* is not *AtmMpe*, *FrDte* or *IpDlciGroup*. If the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* specifies the initial Class of Service (CoS) value assigned to an IP packet received at the *IpPort* if the media linked to the *ProtocolPort* is not *AtmMpe*, *FrDte* or *IpDlciGroup*. See the description of *Vr Ip CosPolicyGroup* for more information.

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Mib	Ip
Values	Decimal (0..3)
Default	0

ATTRIBUTE Vr Pp IpPort mcastDomain (mDomain)

Access	Read and write
Criticality	Component
Description	This attribute specifies the multicast domain index which all traffic coming in from this *IpPort* use. The numerical value of this attribute selects *Vr/<string> Ip Mcast Domain/n*.
Mib	Ip
Values	Decimal (0..3)
Default	0

ATTRIBUTE Vr Pp IpPort mcastPolicyAssignment (mPolicy)

Access	Read and write
Description	This attribute specifies the policyGroup component that this IpPort component is using.
Mib	Ip
Values	Link (Service, linkToPolicyUser)
Default	No default

GROUP Vr Pp IpPort SresProvisioned (SresProv)

Properties	Provisioned
Description	This group contains the provisioned attributes for *SourceRouteEndStation* support.
Mib	Ip

ATTRIBUTE Vr Pp IpPort sourceRouteEndStationSupport (sresSupport)

Access	Read and write
Description	This attribute is used to ***enable*** or ***disable*** support for *SourceRouteEndStation (Sres)*. If set to ***enable***, *Sres* will be supported on this protocol on this *ProtocolPort (Pp)*. If set to ***disable***, it will not be supported. An *Sres* component must be provisioned under the VirtualRouter if this attribute is set to ***enable***. If this attribute is set to ***enable*** and this *Pp* has its *linkToMedia* attribute set, it must be linked to a *LanApplication* (*La*) that has its *Framer interfaceName* linked to a *Fddi* or *TokenRing* component.
Mib	Ip

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Values	enable disable
Default	disable

GROUP Vr Pp IpPort AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Pp IpPort Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for an *IpPort*.
Mib	Ip

ATTRIBUTE Vr Pp IpPort mediaType

Access	Read only
Description	This attribute indicates the media type of this *IpPort*.
Mib	Ip
Values	ethernet fddi tokenRing ppp bnx vcpEther vcpToken x25 frameRelay clusterBridge

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	smds atmMpeVcEncap atmMpeLlcEncap lecEther lecToken tunnel virtual locaMedia invalid
Default	invalid

ATTRIBUTE Vr Pp IpPort operMtu

Access	Read only
Description	This attribute indicates the current operational IP MTU for this *IpPort*. Note that this value may be different than the provisioned *maxTxUnit*.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Vr Pp IpPort operArpStatus

Access	Read only
Description	This attribute indicates the current operational ARP status. If the provisioned *arpStatus* is set to ***auto***, then the IP application automatically determines the *operArpStatus* based on the *IpPort* media type.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort operMulticastStatus

Access	Read only
Description	This attribute indicates the current operational Multicast status. If the provisioned *multicastStatus* is set to ***auto***, then the IP application automatically determines the *operMulticastStatus* based on the *IpPort* media type.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort operEncap

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Access	Read only
Description	This attribute indicates the current operational encapsulation type. If the provisioned *encap* is set to auto, then the IP application automatically determines the *operEncap* based on the *IpPort* media type.
Mib	Ip
Values	ieee8023 ethernet notApplicable
Default	notApplicable

ATTRIBUTE Vr Pp IpPort operCosPolicyAssignment

Access	Read only
Description	This attribute indicates the *CosPolicyGroup* the *IpPort* is using.
Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Pp IpPort operDiffServAssignment

Access	Read only
Description	This attribute indicates the *DifferentiatedServices* interface configuration the *IpPort* is using. **This attribute is OBSOLETE because the d*iffServAssignment* attribute is obsolete.**
Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Pp IpPort operFilterAssignment

Access	Read only
Description	This attribute indicates the *Filter* the *IpPort* is using.
Mib	Ip
Values	The name of the component
Default	No default

GROUP Vr Pp IpPort RelayBcOperational (RelayBcOper)

Properties	Operational

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Description	This group contains operational attributes for an *Interface*'s or *IpPort*'s RelayBc counters.
Mib	Ip

ATTRIBUTE Vr Pp IpPort relayAddressCount

Access	Read only
Description	This attribute indicates the number of frames received on this *Interface* or *IpPort* which were forwarded to the provisioned *relayAddress* for this port. This counter wraps to zero when it reaches it's maximum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort relayBcCount

Access	Read only
Description	This attribute indicates the number of frames received on this port which were forwarded to the *broadcastAddress* on other *IpPorts* or *Interfaces*. This counter is incremented once for every frame received on this port regardless of how many other ports it was sent on. This counter wraps to zero when it reaches it's maximum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp IpPort OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Pp IpPort adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Ip

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr Pp IpPort operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Ip

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Pp IpPort usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Ip

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Values	idle active (activ) busy
Default	idle

GROUP Vr Pp IpPort OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

COMPONENT Vr Pp IpPort IngressServices (IS)

Groups	GROUP Vr Pp IpPort IS IngressServicesLinks (IsLinks) GROUP Vr Pp IpPort IS ServiceSpecification (Sp) GROUP Vr Pp IpPort IS InterfaceServices (IntServ)
Scope	Application
Description	*Vr/<string> Pp/<string> Ip IngressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> IngressServices* This component and its subcomponents represent various traffic management services applied to IP traffic entering an interface.
Mib	Ip
Dyn. Subcomp.	COMPONENT Vr Pp IpPort IS MeterStatistics (Meter)
Common Verbs	Help List Display Add DELete

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GROUP Vr Pp IpPort IS IngressServicesLinks (IsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic entering an interface.
Mib	Ip

ATTRIBUTE Vr Pp IpPort IS linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic entering an interface.
Mib	Ip
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Vr Pp IpPort IS linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic entering an interface.
Mib	Ip
Values	Link (Service, linkToPolicerUsers)
Default	No default

GROUP Vr Pp IpPort IS ServiceSpecification (Sp)

Properties	Provisioned
Description	This group contains provisionable attributes of the *IngressServices* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort IS discardPriorityMode (dpMode)

Access	Read and write
Description	This attribute specifies how drop precedence is assigned to IP traffic entering an interface. If this attribute is set to ***mapPhbToDp*** then drop precedence is assigned to IP traffic entering the interface as explained in the description of the *DifferentiatedServicesDomain* component. If this attribute is set to ***mapLayer2ToDp*** then the drop precedence assigned to IP traffic entering the interface is determined by the ingress Layer 2 media. For an IP packet arriving on *AtmMpe* the cell loss priority (CLP) bit in the ingress cell header is mapped to drop precedence value

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according to ATM traffic management provisioning. For an IP packet arriving on *FrDte or IpDlciGroup* the discard eligible (DE) bit in the ingress frame header is mapped to drop precedence value according to Frame Relay traffic management provisioning. For IP traffic arriving on other media ***high*** drop precedence is assigned.

The *Rtr Interface IngressServices dpMode* and *Rtr Vrf Interface IngressServices dpMode* attributes must be set to ***mapPhbToDp***.

The *IpPort IngressServices dpMode* attribute must be set to ***mapPhbToDp*** if the *linkToPolicerProfile* attribute is set or if the *IpPort* is associated with IP tunnel media.

The *IpPort IngressServices dpMode* attribute has no effect if either of the following two conditions is true:
1) the *VirtualRouter* component does not have *DifferentiatedServicesDomain* subcomponent (see the description of the *CosPolicyGroup* component for more information about drop precedence in this case);
2) the IP packet leaves an interface where the *IpPort EgressServices linkToPolicerProfile* attribute is set (see the description of the *PolicerProfile Meter PolicedPhb outOfProfile* attribute for more information about drop precedence in this case).

Mib — Ip

Values — mapPhbToDp
mapLayer2ToDp

Default — mapPhbToDp

GROUP Vr Pp IpPort IS **InterfaceServices (IntServ)**

Properties — Provisioned

Description — This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..

Mib — Ip

ATTRIBUTE Vr Pp IpPort IS **policerStatsSpooling (spool)**

Access — Read and write

Description — This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled.

This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set.

This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.

Mib — Ip

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Values	off on
Default	off

COMPONENT Vr Pp IpPort IS MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Pp IpPort IS Meter Operational (Oper) GROUP Vr Pp IpPort IS Meter Statistics (Stats)

COLLECTED STATS VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/<string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Pp IpPort IS Meter Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *MeterStatistics* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort IS Meter committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

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Mib	Ip
Values	Decimal (0..600000000)
Units	bit/s
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter excessInformationRate (eir)

Access	Read only
Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.
Mib	Ip
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..600000000)
Units	bits
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter measurmentInterval (t)

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Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter **status**

Access	Read only
Description	This attribute indicates whether the meter is enabled or disabled at the interface where the policer is configured. The meter may be disabled if engineering limits for IP Policing on the FP are exceeded. Each policer assignment that involves a disabled meter should be removed.
Mib	Ip
Values	disabled enabled
Default	No default

GROUP Vr Pp IpPort IS Meter **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort IS Meter **packetsReceived**

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter **octetsReceived**

Access	Read only

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Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter eirPacketsReceived (excessPackets)

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter eirOctetsReceived (excessOctets)

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter packetsRemarked

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter octetsRemarked

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.

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Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter **packetsDiscarded**

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter **octetsDiscarded**

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default
Default	COLLECTED STATS VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics
Description	The statistics record generated by the VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics component.

ATTRIBUTE Vr Pp IpPort IS Meter **committedInformationRate (cir)**

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Vr Pp IpPort IS Meter **excessInformationRate (eir)**

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Values	Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter **committedBurstSize (bc)**

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Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Vr Pp IpPort IS Meter **excessBurstSize (be)**

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter **measurmentInterval (t)**

Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Values	Decimal (0..4294967295)

ATTRIBUTE Vr Pp IpPort IS Meter **packetsReceived**

Description	This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **octetsReceived**

Description	This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess
Values	Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **eirPacketsReceived (excessPackets)**

Description	This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **eirOctetsReceived (excessOctets)**

Description	This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter **packetsRemarked**

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Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter octetsRemarked

Description	This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter packetsDiscarded

Description	This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter octetsDiscarded

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

COMPONENT Vr Pp IpPort EgressServices (ES)

Groups	GROUP Vr Pp IpPort ES EgressServicesLinks (EsLinks) GROUP Vr Pp IpPort ES InterfaceServices (IntServ)
Scope	Application
Description	*Vr/<string> Pp/<string> Ip EgressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> EgressServices* This component and its subcomponents represent various traffic management services applied to IP traffic leaving an interface.
Mib	Ip
Dyn. Subcomp.	COMPONENT Vr Pp IpPort ES MeterStatistics (Meter)
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort ES EgressServicesLinks (EsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic leaving an interface.

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Mib	Ip

ATTRIBUTE Vr Pp IpPort ES linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic leaving an interface.
Mib	Ip
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Vr Pp IpPort ES linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic leaving an interface.
Mib	Ip
Values	Link (Service, linkToPolicerUsers)
Default	No default

GROUP Vr Pp IpPort ES InterfaceServices (IntServ)

Properties	Provisioned
Description	This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..
Mib	Ip

ATTRIBUTE Vr Pp IpPort ES policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	Ip
Values	off on
Default	off

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COMPONENT Vr Pp IpPort ES MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Pp IpPort ES Meter Operational (Oper) GROUP Vr Pp IpPort ES Meter Statistics (Stats)
COLLECTED STATS VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics	
Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/<string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Pp IpPort ES Meter Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *MeterStatistics* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort ES Meter committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..600000000)
Units	bit/s

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Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **excessInformationRate (eir)**

Access	Read only
Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.
Mib	Ip
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **committedBurstSize (bc)**

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..600000000)
Units	bits
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **excessBurstSize (be)**

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **measurmentInterval (t)**

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc*

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attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Mib — Ip

Values — Decimal (0..4294967295)

Units — msec

Default — No default

ATTRIBUTE Vr Pp IpPort ES Meter **status**

Access — Read only

Description — This attribute indicates whether the meter is enabled or disabled at the interface where the policer is configured. The meter may be disabled if engineering limits for IP Policing on the FP are exceeded. Each policer assignment that involves a disabled meter should be removed.

Mib — Ip

Values — disabled
enabled

Default — No default

GROUP Vr Pp IpPort ES Meter **Statistics (Stats)**

Properties — Operational

Description — This group contains the statistical attributes of the *MeterStatistics* component.

Mib — Ip

ATTRIBUTE Vr Pp IpPort ES Meter **packetsReceived**

Access — Read only

Description — This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.

Mib — Ip

Values — Long Integer

Default — No default

ATTRIBUTE Vr Pp IpPort ES Meter **octetsReceived**

Access — Read only

Description — This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.

Mib — Ip

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Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **eirPacketsReceived (excessPackets)**

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **eirOctetsReceived (excessOctets)**

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **packetsRemarked**

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **octetsRemarked**

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **packetsDiscarded**

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Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter **octetsDiscarded**

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default
Default	COLLECTED STATS VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics
Description	The statistics record generated by the VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics component.

ATTRIBUTE Vr Pp IpPort ES Meter **committedInformationRate (cir)**

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

ATTRIBUTE Vr Pp IpPort ES Meter **excessInformationRate (eir)**

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.
Values	Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter **committedBurstSize (bc)**

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..600000000)

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ATTRIBUTE Vr Pp IpPort ES Meter **excessBurstSize (be)**

Description — This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter **measurmentInterval (t)**

Description — This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values — Decimal (0..4294967295)

ATTRIBUTE Vr Pp IpPort ES Meter **packetsReceived**

Description — This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **octetsReceived**

Description — This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **eirPacketsReceived (excessPackets)**

Description — This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **eirOctetsReceived (excessOctets)**

Description — This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **packetsRemarked**

Description — This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values — Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter **octetsRemarked**

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Description	This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter packetsDiscarded

Description	This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter octetsDiscarded

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

COMPONENT Vr Pp IpPort IpLogicalInterface (LogicalIf)

Instance	IP address
Groups	GROUP Vr Pp IpPort LogicalIf Provisioned (Prov) GROUP Vr Pp IpPort LogicalIf ConnLink
Scope	Application
Description	*Vr/<string> PP/<string> IpPort IpLogicalInterface/<IP address>* The *IpLogicalInterface* component defines a single *IpPort* address on a logical IP network. In general, *IpPort*'s can have multiple *IpLogicalInterface*'s. However, if the media type is ***PPP*** (Point to Point Protocol), then only one *IpLogicalInterface* is allowed for that *IpPort*.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Pp IpPort LogicalIf IsisInterface (IsisIf) COMPONENT Vr Pp IpPort LogicalIf OspfInterface (OspfIf) COMPONENT Vr Pp IpPort LogicalIf RipInterface (RipIf) COMPONENT Vr Pp IpPort LogicalIf NhrpInterface (NhrpIf) COMPONENT Vr Pp IpPort LogicalIf IgmpInterface (IgmpIf) COMPONENT Vr Pp IpPort LogicalIf PimSparseModeInterface (PimSmIf)
Dyn. Subcomp.	COMPONENT Vr Pp IpPort LogicalIf LocalHost (Host)
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes required to define an *IpLogicalInterface*.

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Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf netMask

Access	Read and write
Description	This attribute specifies the subnet mask for this *IpLogicalInterface*. This attribute must be specified because the IP application will not automatically provide a default value. The value must be ***255.255.255.255*** if *linkModel* attribute of *IpPort* component is set to ***pointToPoint***. For example, when *linkToMedia* attribute is set to ***alwaysUpInterface*** *mode VirtualMedia Interface* or *PPP* (Point to Point Protocol), *linkModel* attribute of *IpPort* component will be ***pointToPoint***. The value must be one of classA, classB or classC if the *linkModel* attribute of *ipPort* component is set to ***localAreaNetwork***.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf broadcastAddress

Access	Read and write
Description	This attribute specifies the broadcast address for this *IpLogicalInterface*. This attribute is ignored if the *IpPort mediaType* is ***ppp*** (Point to Point Protocol). If the value is 0.0.0.0, the actual broadcast address will be derived from the IP address of this *LogicalIf* and the *netmask* attribute.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf linkDestinationAddress

Access	Read and write
Description	This attribute specifies the address for the link destination for this *IpLogicalInterface*. This attribute is only required if the *IpPort* media type is ***PPP*** (Point to Point Protocol).
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf linkToPimSmCandidateRp

Access	Read and write

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Description	This attribute specifies a link to the *CandidateRendezvousPoint* component which uses this logicalIf as it's RendezvousPoint (*CRp*).
Mib	Ip
Values	Link (Service, address)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf linkToPimSmCandidateBsr

Access	Read and write
Description	This attribute specifies a link to the *CandidateBootstrapRouter* component which uses this logicalIf as it's BootstrapRouter Interface.
Mib	Ip
Values	Link (Service, address)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf linkToMulticastStaticGroup

Access	Read and write
Description	This attribute specifies a link to the component *RouteEntry* which uses this *LogicalIf* as its *outInterface*. There is a limit of up to 1000 *RouteEntry's* that could reference this *LogicalIf* as its *outInterface*.
Mib	Ip
List of	Link (Service, outInterfaces)
List Size	1000
Default	No default

GROUP Vr Pp IpPort LogicalIf ConnLink

Properties	Provisioned
Description	This group contains the links between this component and the associated media connections.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf linkToMediaConnection (conn)

Access	Read and write
Description	This attribute specifies the media connections, *AtmMpe/m Ac/n* or *FrDte/m staticDlci/n*, that are associated with this component.
Mib	Ip
List of	Link (Service, linkToIpLogicalInterface)
Default	No default

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COMPONENT Vr Pp IpPort LogicalIf IsisInterface (IsisIf)

Groups	GROUP Vr Pp IpPort LogicalIf IsisIf Provisioned (Prov) GROUP Vr Pp IpPort LogicalIf IsisIf Operational (Oper) GROUP Vr Pp IpPort LogicalIf IsisIf Statistics (Stats) GROUP Vr Pp IpPort LogicalIf IsisIf ErrorStatistics (Errors)
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisInterface* An *IsisIf* component can be created under each *Interface* component to run the ISIS protocol. This component requires an associated *Isis* component to be provisioned. This component requires at least one *Level* subcomponent to be provisioned. If the underlying media is ATM based, this component requires an *AtmConn* subcomponent to be provisioned.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Pp IpPort LogicalIf IsisIf IsisIfLevel (Level)
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf IsisIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of attributes used to configure an ISIS Interface.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf snmpAdminStatus

Access	Read: All Write: All
Description	This attribute specifies the administrative status of this *IsisInterface* component on this *Router*.
Mib	Ip
Values	up down testing
Default	up

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ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **passive**

Access	Read: All Write: All
Description	This attribute specifies whether the *IsisInterface* should be passive. A passive interface is one whose IP address is advertised in the LSP, but is not involved in ISIS protocol activities (for example, transmitting LSPs and establishing adjacencies).
Mib	Ip
Values	no yes
Default	no

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **lspInterval**

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the minimum time between transmission of successive LSPs on this interface. This minimum time applies to any LSP, whether it is the LSP of this *Router*, or another router's LSP that is being retransmitted.
Mib	Ip
Values	Decimal (33..65535)
Units	msec
Default	100

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **lspRetransmitInterval**

Access	Read: All Write: All
Description	This attribute specifies, in seconds, the minimum time to wait before retransmitting this *Router's* LSP on this interface. An LSP retransmission occurs if a previously transmitted LSP is not acknowledged. Retransmissions only occur on point-to-point links.
Mib	Ip
Values	Decimal (1..300)
Units	seconds
Default	5

GROUP Vr Pp IpPort LogicalIf IsisIf **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes associated with the ISIS protocol running on this interface.

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Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **upTime**

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, that the ISIS protocol has been operational on this interface.
Mib	Ip
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **adjacencyChanges (adjChanges)**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an adjacency on this interface has changed state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **operState (state)**

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the ISIS Interface.
Mib	Ip
Values	adminDown down up
Default	No default

GROUP Vr Pp IpPort LogicalIf IsisIf **Statistics (Stats)**

Properties	Operational
Description	The attributes in this group are statistics associated with the normal operation of this *IsisInterface* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **txLsps**

Access	Read: All Write: Illegal

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Description	This attribute indicates the number of LSPs transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **rxLsps**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **txPtpHellos**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **rxPtpHellos**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **txBroadcastHellos**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf rxBroadcastHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf txCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf rxCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) received on this interface since the last time this *Isis*If component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf txPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **rxPsnps**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **totalPacketsTxd**

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **totalPacketsRxd**

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Pp IpPort LogicalIf IsisIf **ErrorStatistics (Errors)**

Properties	Operational
Description	The attributes in this group are statistics associated with the operation of this *IsisInterface* component. Each attribute counts a specific abnormal event that has occurred since this component was last enabled.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **initFails**

Access	Read: All Write: Illegal

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Description	This attribute indicates the number of times that initialization of this ISIS interface has failed.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **adjRejects**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an attempt to form an adjacency on this interface has failed.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf **rxUnknownPacketTypes**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of packets of unknown type that were received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Pp IpPort LogicalIf IsisIf **IsisIfLevel (Level)**

Instance	Decimal (1..1)
Groups	GROUP Vr Pp IpPort LogicalIf IsisIf Level Provisioned (Prov) GROUP Vr Pp IpPort LogicalIf IsisIf Level Operational (Oper)
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisIf Level/<1..2>* The ISIS routing protocol supports a two-level routing hierarchy. This component represents ISIS routing aspects that are specific to each

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routing level for this ISIS interface. In the current release, only *Level/1* is supported.

Mib lp

Common Verbs
Help
List
Display
Add
DELete

GROUP Vr Pp IpPort LogicalIf IsisIf Level Provisioned (Prov)

Properties Provisioned

Description This group contains the attributes used to independently configure each ISIS interface routing level.

Mib lp

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level metric

Access Read: All
Write: All

Description This attribute specifies the cost of this interface, which is used by the SPF algorithm in this and other routers. This value is advertised in the LSP.

Mib lp

Values Decimal (0..63)

Default 10

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level helloInterval

Access Read: All
Write: All

Description This attribute specifies the time, in seconds, between transmission of successive hello messages (IIH PDU).

Mib lp

Values Decimal (1..20000)

Units seconds

Default 10

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level helloMultiplier

Access Read: All
Write: All

Description This attribute specifies the factor by which the *helloInterval* attribute is multiplied in order to create the hold time value transmitted in the hello packets (IIH PDU). The hold time value is used by the receiving router to

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	determine how long it should maintain the adjacency if a subsequent hello packet is not received.
Mib	Ip
Values	Decimal (2..100)
Default	3

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level **csnpInterval**

Access	Read: All Write: All
Description	This attribute specifies the time interval, in seconds, between successive transmissions of the CSNP PDUs.
Mib	Ip
Values	Decimal (1..600)
Units	seconds
Default	10

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level **priority**

Access	Read: All Write: All
Description	This attribute specifies the DIS priority for this router. On a multi-access LAN, the router with the highest DIS priority is elected to represent the LAN. The elected router transmits an LSP for the pseudonode representing the LAN.
Mib	Ip
Values	Decimal (0..127)
Default	64

GROUP Vr Pp IpPort LogicalIf IsisIf Level **Operational (Oper)**

Properties	Operational
Description	This group contains attributes representing the operational state of this *IsisIf Level* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level **disId**

Access	Read: All Write: Illegal
Description	This attribute indicates the system ID of the ISIS router acting as DIS for the LAN to which this interface is attached. For non-LAN interfaces, the value of this attribute is ***N/A***.
Mib	Ip

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Values	String (1..14, ASCII)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level **disChanges**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DIS changes that have occurred on this interface for this level.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level **adjacencies**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active adjacencies that exist on this interface for this level.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level **timeToNextTxHello**

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, until the next Hello message is to be transmitted on this interface for this level.
Mib	Ip
Values	Decimal (0..600)
Units	seconds
Default	No default

COMPONENT Vr Pp IpPort LogicalIf **OspfInterface (OspfIf)**

Groups	GROUP Vr Pp IpPort LogicalIf OspfIf Provisioned (Prov) GROUP Vr Pp IpPort LogicalIf OspfIf Operational (Oper) GROUP Vr Pp IpPort LogicalIf OspfIf Metric
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf* *Rtr/<string> Interface/<Ip Address> OspfIf* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf*

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An OspfIf component can be created under each *logicalIf* or *Interface* to run OSPF protocol.

Mib	Ip
Opt. Subcomp.	COMPONENT Vr Pp IpPort LogicalIf OspfIf Md5KeyId (KeyId) COMPONENT Vr Pp IpPort LogicalIf OspfIf TypeOfService (TOS) COMPONENT Vr Pp IpPort LogicalIf OspfIf Neighbor (Nbr)
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf OspfIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes identifies a provisionable set of attributes.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf areaId

Access	Read and write
Description	The area Id this Ospf interface belongs to.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf ifType

Access	Read and write
Description	This attribute specifies the type of this *OspfInterface*. Neighbors are dynamically discovered using the Hello protocol for an *ifType* of ***broadcast***, ***pointToPoint***, or ***pointToMultipoint*** when *pointToMultiPointMode* is set to ***broadcast***. A *Neighbor* component must be configured for an *ifType of* ***nbma*** or ***pointToMultiPoint***, when *pointToMultiPointMode* is set to ***nonBroadcast***. When *ifType* is set to ***passive***, neighbors are not required.
Mib	Ip
Values	broadcast nbma pointToPoint passive pointToMultiPoint (ptmp)
Default	No default

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ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **snmpAdminStatus**

Access	Read and write
Description	The administrative status of this Ospf interface.
Mib	Ip
Values	up down
Default	up

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **rtrPriority (rtrPri)**

Access	Read and write
Description	The priority of this interface. Used in multi-access networks, this field is used in the designated router election algorithm. The value 0 signifies that the router is not eligible to become the designated router on this particular protocol port. In the event of a tie in this value, routers will use their *routerId* as a tie breaker.
Mib	Ip
Values	Decimal (0..255)
Default	1

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **transitDelay**

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **retransInterval (retransInt)**

Access	Read and write
Description	The number of seconds between link-state advertisements retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	5

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ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **helloInterval (helloInt)**

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **rtrDeadInterval (rtrDeadInt)**

Access	Read and write
Description	The number of seconds that a router's hello packets have not been seen before it's neighbors declare the router down. This should be some multiple of the *helloIntereval*. This value must be the same for all routers attached to a common network.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	40

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **pollInterval (pollInt)**

Access	Read and write
Description	The largest time interval, in seconds, between the hello packets sent to an inactive non-broadcast multi-access neighbor.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	120

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **authKey**

Access	Write only
Description	The Authentication Key. If the value of the attribute *authType* of an *AreaEntry* is ***simplePassword***, and the *authKey* length is shorter than 8 octets, then the value of *authKey* will be left adjusted zero-filled to 8 octets.
Mib	Ip
Values	String (1..8, Hex)
Default	0000000000000000

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ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **multicastForwarding (multicastFwd)**

Access	Read and write
Description	The way multicasts should be forwarded on this interface; non forwarded, forwarded as data-link multicasts, or forwarded as data-link unicasts. Data-link multicasting is not meaningful on point-to-point and NBMA(No Broadcast Multi Access) interfaces, and setting this attribute to blocked effectively disables all multicast forwarding.
Mib	Ip
Values	blocked
Default	blocked

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **pointToMultiPointMode (ptmpmode)**

Access	Read and write
Description	This attribute specifies the Point-to-Multipoint mode to use when the *ifType* of this *OspfInterface* is ***pointToMultipoint***. A value of ***nonBroadcast*** restricts this interface to only send unicast packets, Hence, a *Neighbor* component must be configured. A value of ***broadcast*** enables sending multicast OSPF Hello packets to dynamically discover neighbors.
Mib	Ip
Values	nonBroadcast (nbc) broadcast (bc)
Default	nonBroadcast

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **authType**

Access	Read and write
Description	The authentication type specified for this *Ospf* interface.
Mib	Ip
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Vr Pp IpPort LogicalIf OspfIf **Operational (Oper)**

Properties	Operational
Description	This group of attributes identifies operational state that this interface is performing.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **state**

Access	Read only

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Description	The state of the OSPF interface.
Mib	Ip
Values	down loopback waiting pointToPoint designatedRouter backupDesignatedRouter otherDesignatedRouter
Default	designatedRouter

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **designatedRouter**

Access	Read only
Description	The Ip address of the designated router.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **backupDesignatedRouter**

Access	Read only
Description	The Ip address of the backup designated router
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **events**

Access	Read only
Description	The number of times this OSPF interface has changed its state or an error has occurred.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Pp IpPort LogicalIf OspfIf **Metric**

Properties	Operational
Description	This group contains the operational metric attribute of this interface.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf **metric**

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Access	Read only
Description	This attribute indicates the metric being used by this *OspfIf*. The metric is derived in one of two ways: 1. If there is a *TypeOfService* component provisioned under this *OspfIf* component, then the value of the *metric* attribute is copied from the provisionable attribute *tosMetric*. 2. Otherwise, the metric is computed based on the interface speed. If the interface speed is greater than 100 Mbit/s, then the *metric* is 1. If the interface speed is less than 100 Mbit/s, then the metric is 100 Mbit/s divided by the interface speed. If the interface speed is unknown, then it is treated as 1.54 Mbit/s during the calculation. The value of interface speed is available by displaying the *ifSpeed* attribute of the corresponding *IfTableEntry* component.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Pp IpPort LogicalIf OspfIf Md5KeyId (KeyId)

Instance	Decimal (1..255)
Groups	GROUP Vr Pp IpPort LogicalIf OspfIf KeyId Provisioned (Prov) GROUP Vr Pp IpPort LogicalIf OspfIf KeyId Operational (Oper)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* This component contains the information about various MD5 Authentication keys.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf OspfIf KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.

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Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf KeyId **md5Key (Key)**

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	Ip
Values	String (0..16, ASCII)
Default	""

GROUP Vr Pp IpPort LogicalIf OspfIf KeyId **Operational (Oper)**

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf KeyId **inUseForGeneration (inUse)**

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	Ip
Values	true false
Default	false

COMPONENT Vr Pp IpPort LogicalIf OspfIf **TypeOfService (TOS)**

Instance	Decimal (0..0)
Groups	GROUP Vr Pp IpPort LogicalIf OspfIf TOS Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>*

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This component describes the metrics to be advertised for a specified interface at various types-of-service.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf OspfIf TOS **Provisioned (Prov)**

Properties	Provisioned
Description	Identifies a provisionable set of attributes.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf TOS **tosMetric**

Access	Read and write
Description	The metric using this typeOfService on this interface.
Mib	Ip
Values	Decimal (0..65535)
Default	1

COMPONENT Vr Pp IpPort LogicalIf OspfIf **Neighbor (Nbr)**

Instance	IP address
Groups	GROUP Vr Pp IpPort LogicalIf OspfIf Nbr Provisioned (Prov) GROUP Vr Pp IpPort LogicalIf OspfIf Nbr Operational (Oper)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* This component represents a neighbor on a multi-access non-broadcast *OspfInterface* configured with its *ifType* attribute set to one of the following: - ***nbma*** and the *rtrPriority* attribute is set to non-zero or - ***pointToMultiPoint*** and *pointToMultiPointMode* is set to ***nonBroadcast***. The operational attributes for this component can also be viewed from: *Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* or

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Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal> or
Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>

Mib: Ip

Common Verbs: Help, List, Display, Add, DELete

GROUP Vr Pp IpPort LogicalIf OspfIf Nbr Provisioned (Prov)

Properties: Provisioned

Description: Identifies a group of Provisionable attributes.

Mib: Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr priority

Access: Read and write

Description: The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network. The higher the number, the better are the chances of being a designated router.

Mib: Ip

Values: Decimal (0..255)

Default: 1

GROUP Vr Pp IpPort LogicalIf OspfIf Nbr Operational (Oper)

Properties: Operational

Description: Contains the Operational set of attributes for the Neighbor.

Mib: Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr rtrId

Access: Read only

Description: An Ip Address uniquely identifying the neighboring router in the Autonomous System.

Mib: Ip

Values: IP address

Default: No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr options

Access: Read only

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Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	Ip
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr **state**

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	Ip
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr **events**

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr **lsRetransQlen**

Access	Read only
Description	The current length of the Retransmission queue.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr **exchangeStatus**

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Access	Read only
Description	Indicates the exchange status for a neighbor Entry.
Mib	Ip
Values	master slave
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr **permanance**

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	Ip
Values	permanent dynamic
Default	permanent

COMPONENT Vr Pp IpPort LogicalIf **RipInterface (RipIf)**

Groups	GROUP Vr Pp IpPort LogicalIf RipIf Provisioned (Prov) GROUP Vr Pp IpPort LogicalIf RipIf Operational (Stat)
Scope	Application
Description	*Vr/<X> Pp/<X> IpPort LogicalIf/<Ip Address> RipInterface* *Rtr/<X> Interface/<X> RipInterface* *Rtr/<X> Vrf/<X> Interface/<X> RipInterface* This component is used to configure a *LogicalIf* or an *Interface* to run RIP protocol.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Pp IpPort LogicalIf RipIf Neighbor (Nbr)
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf RipIf **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *RipIf* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf **snmpAdminStatus**

Access	Read and write

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Description	Identifies the administrative status of this *RipInterface*. Setting this value to ***disabled*** will have the effect of rendering it inactive.
Mib	Ip
Values	up down
Default	up

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf metric

Access	Read and write
Description	This attribute is the RIP metric for this logical interface.
Mib	Ip
Values	Decimal (1..16)
Default	1

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf poisonReverseFlag (poison)

Access	Read and write
Description	If the value of this attribute is set to ***true***, then poison reverse algorithm is used when sending out the updates otherwise use split horizon only.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf flashUpdateFlag

Access	Read and write
Description	This attribute when set to ***true*** will send updates when updates are received; otherwise RIP will wait till the next update period.
Mib	Ip
Values	true false
Default	true

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf networkRouteStatus

Access	Read and write
Description	This attribute determines what type of network routes will be sent and whether a default route will be generated for this *RipInterface*. Generated default routes will not go into the routing table, but are sent in the updates going out on the interface. The possible values for this attribute are:

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naturalNetWithOutDefaultRoute - This value will cause normal RIP network routes to be put in the update. This means that the address of *logicalIf* or *Interface* pertaining to this *RipInterface* knowledge is taken into account in determining if the subnetted network or the natural network is sent for any route going into this update.

naturalNetWithDefaultRoute - Selecting this value will cause a default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*.

defaultRouteOnly - Selection of this value causes the default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*.
NOTE: No other routes will go in the update.

subnetsOnly - selection of this value will cause only subnet information to be put in the update. No default routes will be generated or passed on. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be put in the update.
NOTE: this also effects receiving of updates on this interface. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be accepted on a received RIP update on this *RipInterface*.

Mib	Ip
Values	naturalNetWithOutDefaultRoute (noDefault) naturalNetWithDefaultRoute (withDefault) defaultRouteOnly (defaultOnly) subnetsOnly (subnets)
Default	naturalNetWithOutDefaultRoute

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf **defaultRouteMetric**

Access	Read and write
Description	This attribute identifies the metric value for the default route. This value is only used if the attribute *networkRouteStatus* is configured with a value of either ***naturalNetWithDefaultRoute*** or ***defaultRouteOnly***
Mib	Ip
Values	Decimal (1..16)
Default	1

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf **acceptDefault**

Access	Read and write
Description	If this attribute is set to true, then accept the default route from this interface.
Mib	Ip

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Values	true false
Default	true

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf **ifConfSend**

Access	Read and write
Description	This attribute identifies what the router sends on this *RipIf*. ***ripVersion1*** implies sending RIP updates compliant with RFC 1058. ***rip1Compatible*** implies broadcasting RIP-2 updates according to RFC 1058. ***ripVersion2*** implies multicasting RIP-2 updates.
Mib	Ip
Values	doNotSend (silent) ripVersion1 (v1) rip1Compatible (v2b) ripVersion2 (v2)
Default	rip1Compatible

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf **ifConfReceive**

Access	Read and write
Description	This attribute identifies which version of RIP updates are to be accepted on this *RipIf*. Note that ***rip2*** and ***rip1OrRip2*** implies reception of multicast packets.
Mib	Ip
Values	rip1 (v1) rip2 (v2) rip1OrRip2 (both) doNotReceive (reject)
Default	rip1OrRip2

GROUP Vr Pp IpPort LogicalIf RipIf **Operational (Stat)**

Properties	Operational
Description	This group contains operational attributes of the *RipIf* component. These attributes are statistical data corresponding to the RIP-2 standard MIB (rfc 1724) rip2Status table.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf **ifBadPacketRcv**

Access	Read only
Description	This attribute counts the number of RIP response packets recieved by the RIP process which were subsequently discarded for any reason.
Mib	Ip

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf **ifBadRouteRcv**

Access	Read only
Description	This attribute counts how many routes, in valid RIP packets, were ignored for any reason.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf **ifTriggeredUpdates**

Access	Read only
Description	This attribute counts the number of triggered updates actually sent on this interface. This explicitly does NOT include full updates sent containing new information.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp IpPort LogicalIf RipIf **Neighbor (Nbr)**

Instance	IP address
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* This component is used to configure the Ip Address of the non broadcast multi access (NBMA) neighbor.
Mib	Ip
Common Verbs	Help List Display Add DELete

COMPONENT Vr Pp IpPort LogicalIf **NhrpInterface (NhrpIf)**

Scope	Application

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Description	*Vr/x Pp/x IpPort LogicalIf/<ipAddress> NhrpInterface* This component is used to configure a *LogicalIf* to run NHRP protocol.
Mib	IpNhrp
Common Verbs	Help List Display Add DELete

COMPONENT Vr Pp IpPort LogicalIf LocalHost (Host)

Instance	IP address
Groups	GROUP Vr Pp IpPort LogicalIf Host Operational (Oper)
Scope	Application
Description	*Vr/<n> Pp/<n> IpPort LogicalIf/<addr> LocalHost/<addr>* This component represents an instance of *LocalHost* functionality, which is used by an application to access the IP forwarding capability of this *VirtualRouter*. The instance value is the IP address used by the application, and is a member of the local subnet represented by the parent *LogicalIf* component.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Pp IpPort LogicalIf Host Operational (Oper)

Properties	Operational
Description	This group contains the operational status information for this *LocalHost* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf Host hostName

Access	Read only
Description	This attribute identifies the component name representing the application which is registered as this *LocalHost*.
Mib	Ip
Values	The name of the component
Default	No default

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ATTRIBUTE Vr Pp IpPort LogicalIf Host hostStatus

Access	Read only
Description	This attribute identifies the activity status of the application which is registered as this *LocalHost*. A value of ***up*** means that the application is ready to accept IP traffic from and supply IP traffic to the *VirtualRouter*. A value of ***down*** means that the application is not ready to accept IP traffic from the *VirtualRouter*, and is not supplying IP traffic to the *VirtualRouter*.
Mib	Ip
Values	up down
Default	No default

COMPONENT Vr Pp IpPort LogicalIf IgmpInterface (IgmpIf)

Groups	GROUP Vr Pp IpPort LogicalIf IgmpIf Provisioned (Prov) GROUP Vr Pp IpPort LogicalIf IgmpIf Operational (Oper)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort LogicalIf/<Ip Address> IgmpIf* This component is used to configure a *logicalIf* to run the Igmp protocol. The *Igmp* component must be added under multicast. Only 1 *logicalIf* that can have a *IgmpIf* under the same port.
Mib	IpMcast
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf IgmpIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IpIgmpIf* component.
Mib	IpMcast

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf version (ver)

Access	Read and write
Description	This attribute specifies the IGMP protocol version running on this interface. v2 is the only supported version at this time.
Mib	IpMcast

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Values	v2
Default	v2

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf **queryInterval**

Access	Read and write
Description	This attribute specifies the frequency at which IGMP Host-Query packets are transmitted on this interface.
Mib	IpMcast
Values	Decimal (1..3600)
Units	seconds
Default	125

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf **queryMaxRespTime**

Access	Read and write
Description	This attribute specifies the maximum query response time advertised in IGMPv2 queries on this interface. The number of seconds represented by the *queryMaxRespTime* must be less than the Query Interval.
Mib	IpMcast
Values	Decimal (1..3600)
Units	seconds
Default	10

GROUP Vr Pp IpPort LogicalIf IgmpIf **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of *IpIgmpIf* component.
Mib	IpMcast

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf **querier**

Access	Read only
Description	This attribute indicates the address of the IGMP Querier on the IP subnet to which this interface is attached.
Mib	IpMcast
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf **wrongVersionQuery (wvq)**

Access	Read only

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Description	This attribute indicates the number of queries received whose IGMP version does not match that configured for this interface. IGMP requires that all routers on a LAN be configured to run the same version of IGMP.
Mib	IpMcast
Values	Decimal (0..4292967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf **joins**

Access	Read only
Description	This attribute indicates the number of times a group membership has been added on this interface.
Mib	IpMcast
Values	Decimal (0..4292967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf **groups**

Access	Read only
Description	This attribute indicates the current number of entries for this interface in the cache table.
Mib	IpMcast
Values	Decimal (0..4292967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf **querierExpiryTime (qet)**

Access	Read only
Description	This attribute indicates the amount of time remaining before the other querier present timer expires. If the local system is the querier, the value of this attribute is zero.
Mib	IpMcast
Values	Decimal (0..3600)
Units	seconds
Default	0

COMPONENT Vr Pp IpPort LogicalIf **PimSparseModeInterface (PimSmIf)**

Groups	GROUP Vr Pp IpPort LogicalIf PimSmIf Porvisioned (Prov) GROUP Vr Pp IpPort LogicalIf PimSmIf Operational (Oper)
Scope	Application

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Description	Vr/<string> Pp/<string> Ipport Logical/<addr> PimSmIf. This component is used to configure a logicalIf to run PIM-SM protocol.
Mib	IpPim
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf PimSmIf Porvisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *PimSmIf* component.
Mib	IpPim

ATTRIBUTE Vr Pp IpPort LogicalIf PimSmIf helloInterval (hello)

Access	Read and write
Description	This attribute specifies the frequency at which PIM-SM hello messages are transmitted on this interface.
Mib	IpPim
Values	Decimal (1..3600)
Units	seconds
Default	30

GROUP Vr Pp IpPort LogicalIf PimSmIf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PimSmIf* component.
Mib	IpPim

ATTRIBUTE Vr Pp IpPort LogicalIf PimSmIf designatedRouter (dr)

Access	Read only
Description	This attribute indicates the Designated Router on this PIM-SM interface. For non-broadcast media such as AtmMpe and FrDte, this attribute has the value 0.0.0.0.
Mib	IpPim
Values	IP address
Default	No default

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COMPONENT Vr Pp IpPort NetSentry (Ns)

Groups	GROUP Vr Pp IpPort Ns Provisioned (Prov)
Scope	Application
Description	This component allows the configuration of *NetSentry* filters for this *IpPort*.
Mib	Ip
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpPort Ns Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes required by *NetSentry* to be applied to all IP packets going through this *IpPort*.
Mib	Ip

ATTRIBUTE Vr Pp IpPort Ns incomingFilter

Access	Read and write
Description	An ASCII string which provides the name of the *NetSentry* filter which will be applied to all IP datagrams arriving from this *IpPort*.
Mib	Ip
Values	String (0..32, ASCII)
Default	""

ATTRIBUTE Vr Pp IpPort Ns outgoingFilter

Access	Read and write
Description	An ASCII string which provides the name of *NetSentry* filter which will be applied to all IP datagrams sent to this *IpPort*.
Mib	Ip
Values	String (0..32, ASCII)
Default	""

COMPONENT Vr Pp IpPort BootpPort (BootpP)

Groups	GROUP Vr Pp IpPort BootpP Provisioned (Prov) GROUP Vr Pp IpPort BootpP AdministrativeControl (AdminControl) GROUP Vr Pp IpPort BootpP OperationalStatus (OperStatus)

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GROUP Vr Pp IpPort BootpP OsiState (State)
GROUP Vr Pp IpPort BootpP Statistics (Stats)

Scope: Application

Description: *Vr/<string> Pp/<string> IpPort BootpPort*
Rtr/<string> Interface/<string> BootpPort
Rtr/<string> Vrf/<string> Interface/<string> BootpPort
An *BootpPort* component must be provisioned for each *IpPort* or *Interface* where BOOTP request messages will be received. Each *BootpPort* component can be provisioned with a set of relay addresses. Each BOOTP request message received on this port will be sent to the provisioned set of relay addresses.

Mib: Ip

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Pp IpPort BootpP Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes for the *BootpPort* component.

Mib: Ip

ATTRIBUTE Vr Pp IpPort BootpP relayForwardStatus (status)

Access: Read and write

Description: This attribute controls how BOOTP request packets, received on another port, will be flooded out this port. If *relayForwardStatus* is ***enabled***, BOOTP requests received on another port will be broadcast out this port. When *relayForwardStatus* is ***disabled***, BOOTP requests will not be broadcast out this port. If ***auto*** is used, the bridge spanning tree database is used to determine if BOOTP requests should be broadcast out this port.

Note that when using ***enabled***, it is possible to create misconfigurations which will result in broadcast storms. When using this feature with multiple routers, make sure there are no broadcast forwarding loops. Using ***auto*** with bridge spanning tree is safer to use if the network is running bridge spanning tree.

Note that for ***auto*** to have effect, bridge spanning tree must be running on the corresponding *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface*.

Mib: Ip

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Values	enabled disabled auto
Default	disabled

ATTRIBUTE Vr Pp IpPort BootpP **bootpLogicalInterface (portIf)**

Access	Read and write
Description	This attribute identifies the logical interface whose address is to be the GIADDR of this BOOTP port. If not set, the address of the first logical port or Interface is chosen.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort BootpP **relayAddress (addr)**

Access	Read and write
Description	This attribute identifies a list of relay addresses. When a BOOTP request message is received on this port, the request will be forwarded to the IP addresses provisioned in *relayAddress*. Note that BOOTP requests are also broadcast out all other *BootpPort*'s according to the *relayForwardStatus* of the outgoing port.
Mib	Ip
List of	IP address
List Size	3
Default	No default

GROUP Vr Pp IpPort BootpP **AdministrativeControl (AdminControl)**

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort BootpP **snmpAdminStatus**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip

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Values	up down testing
Default	up

GROUP Vr Pp IpPort BootpP OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort BootpP snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Pp IpPort BootpP OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Pp IpPort BootpP adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Pp IpPort BootpP operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Pp IpPort BootpP usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ip

Values:
idle
active (activ)
busy

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Default	idle

GROUP Vr Pp IpPort BootpP Statistics (Stats)

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	Ip

ATTRIBUTE Vr Pp IpPort BootpP inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Pp IpPort BootpP inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp IpPort VrrpPort

Instance	Decimal (1..255)
Groups	GROUP Vr Pp IpPort VrrpPort Provisioned (Prov) GROUP Vr Pp IpPort VrrpPort Operational (Oper) GROUP Vr Pp IpPort VrrpPort AdministrativeControl (AdminControl) GROUP Vr Pp IpPort VrrpPort OperationalStatus (OperStatus) GROUP Vr Pp IpPort VrrpPort OsiState (State)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort VrrpPort/<n>* *Rtr/<string> Vrf/<string> Interface VrrpPort/<n>* This component contains attributes that define a VRRP virtual router

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instance associated with this *IpPort*. The component instance (n) is the VRRP virtual router VRID.

Mib	IpVrrp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpPort VrrpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the VrrpPort component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort priority

Access	Read and write
Description	This attribute specifies the priority of *VrrpPort* during election of a master VRRP virtual router. A priority of 0 (zero) is reserved for the master to indicate it is releasing responsibility for the VRRP virtual router. A priority of 255 is reserved for the VRRP virtual router that owns (has as real interfaces) the IP addresses associated with this *VrrpPort*.
Mib	IpVrrp
Values	Decimal (1..255)
Default	100

ATTRIBUTE Vr Pp IpPort VrrpPort advertisementInterval

Access	Read and write
Description	This attribute specifies the time interval between VRRP advertisements which will be sent by the master VRRP virtual router.
Mib	IpVrrp
Values	Decimal (1..255)
Units	seconds
Default	1

ATTRIBUTE Vr Pp IpPort VrrpPort listLinkToCriticalIp (listLinkToCIp)

Access	Read and write

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Description	This attribute specifies the *CriticalIp* instance to which the *VrrpPort* instance is linked. If the *IpPort* associated with this *CriticalIp* instance becomes disabled, the *VrrpPort* becomes disabled..
Mib	IpVrrp
Values	Link (Service, listLinkToVrrp)
Default	No default

ATTRIBUTE Vr Pp IpPort VrrpPort **holdDownTime (hdt)**

Access	Read and write
Description	This attribute specifies the length of time that a VrrpPort instance is prevented from participating in a VRRP Master virtual router election, if it has given up Mastership due to a failure, once the failure has been corrected. This allows the network routing protocol to re-establish a route to this VrrpPort instance when it becomes available. When the length of the holdDownTime is reached, a VRRP Master virtual router election occurs and the highest priority VrrpPort instance will become the VRRP Master virtual router. A holdDownTime attribute value of notApplicable disables the holdDownTime functionality. Any other value should be calculated based on an estimate of the time requiredfor the network routing protocol to establish a route to a VrrpPort instance, that has been disabled by a failure, once it has recovered. If the new VRRP Master virtual router fails within the holdDownTime interval and no other VRRP Backup virtual router is available, the holdDownTime functionality is canceled and the highest priority VrrpPort instance will become the VRRP Master virtual router. In a situation where both the VRRP Master and Backup virtual routers are on the same MSS, and both are affected by the same failure, the holdDownTime functionality doesn't add any value since the network routes to both VrrpPort instances are affected.
Mib	IpVrrp
Values	Decimal (1..3600) notApplicable (na)
Units	seconds
Default	notApplicable

ATTRIBUTE Vr Pp IpPort VrrpPort **ipAddresses**

Access	Read and write
Description	This attribute specifies one or more IP addresses associated with this *VrrpPort* instance (VRID). All VRRP virtual routers with this VRID must have the same set of IP addresses configured. Each of the IP addresses

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	in the list must be on the same subnet as an *IpLogicalInterface* for the *IpPort*. All the IP addresses in the list must be owned by this VRRP virtual router or by other VRRP virtual routers but not a combination.
Mib	IpVrrp
List of	IP address
Default	No default

GROUP Vr Pp IpPort VrrpPort Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *VrrpPort* component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort virtualRouterState

Access	Read only
Description	This attribute indicates the state of this *VrrpPort* instance. It will be one of three states: initialize, backup and master.
Mib	IpVrrp
Values	initialize backup master
Default	initialize

ATTRIBUTE Vr Pp IpPort VrrpPort virtualRouterPhysicalAddress

Access	Read only
Description	This attributes indicates the physcial address of the *VrrpPort*. The address is a virtual physical address of the form “00-00-5e-00-01-VRID” where the VRID is the instance value of the *VrrpPort*.
Mib	IpVrrp
Values	String (6, Dashed Hex)
Default	No default

GROUP Vr Pp IpPort VrrpPort AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort snmpAdminStatus

Access	Read and write

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Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpVrrp
Values	up down testing
Default	up

GROUP Vr Pp IpPort VrrpPort **OperationalStatus (OperStatus)**

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort **snmpOperStatus**

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpVrrp
Values	up down testing
Default	up

GROUP Vr Pp IpPort VrrpPort **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

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The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — IpVrrp

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr Pp IpPort VrrpPort operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — IpVrrp

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Pp IpPort VrrpPort usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

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	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpVrrp
Values	idle active (activ) busy
Default	idle

COMPONENT Vr Pp IpPort CriticalIp

Instance	Decimal (1..255)
Groups	GROUP Vr Pp IpPort CriticalIp Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort CriticalIp/n* The *CriticalIp* component defines a critical *IpPort* for use by the VRRP virtual router with the same instance (VRID) as the *CriticalIp* instance. If the *IpPort* associated with this *CriticalIp* instance becomes disabled the *VrrpPort* linked to this *CriticalIp* is disabled.
Mib	IpVrrp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpPort CriticalIp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *CriticalIp* component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort CriticalIp listLinkToVrrp

Access	Read and write
Description	This attribute specifies the list of *VrrpPort* to which the *CriticalIp* has been linked. When the *IpPort* associated with this *CriticalIp* becomes disabled, the linked *VrrpPort* is disabled.
Mib	IpVrrp
List of	Link (Service, listLinkToCriticalIp)
Default	No default

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COMPONENT Vr Pp IpxPort (IpxP)

Instance	link ethernet novell sap snap vns tunnel
Groups	GROUP Vr Pp IpxP AdministrativeControl (AdminControl) GROUP Vr Pp IpxP Provisioned (Prov) GROUP Vr Pp IpxP SresProvisioned (SresProv) GROUP Vr Pp IpxP OsiState (State) GROUP Vr Pp IpxP OperationalStatus (OperStatus) GROUP Vr Pp IpxP Operational (Oper) GROUP Vr Pp IpxP Statistics (Stats)
Scope	Application
Description	*Vr/<string> PP/<string> IpxP* The IPX protocol specific information relating to this *ProtocolPort* instance.
Mib	Ipx
Subcomponents	COMPONENT Vr Pp IpxP RipPort (RipP) COMPONENT Vr Pp IpxP SapPort (SapP)
Opt. Subcomp.	COMPONENT Vr Pp IpxP NetSentryPort (NetSentryP)
Dyn. Subcomp.	COMPONENT Vr Pp IpxP IpxWanPort (IWP)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpxP AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates

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	the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ipx
Values	up down testing
Default	up

GROUP Vr Pp IpxP Provisioned (Prov)

Properties	Provisioned
Description	The Provisionable group for the *IpxPort* component.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP networkNumberProv (netP)

Access	Read and write
Description	The Ipx network number of the network directly connected to this port.
Mib	Ipx
Values	String (0..4, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp IpxP defaultType (defType)

Access	Read and write
Description	This attribute indicates which protocol is to run on a protocol port. In the case of a lan media it is to be set to broadcast. In the case of WAN media the following choices are to be exercised: For running Pre-IPXWAN RIP set value to *other*. For running numbered RIP set value to *wanRip*. For running un-numbered RIP set value to *unnumberedRip*. Setting this value to *ppp* will signify unnumbered Rip running on a ppp port.
Mib	Ipx
Values	other broadcast ppp wanRip unnumberedRip
Default	No default

ATTRIBUTE Vr Pp IpxP broadcastInhibit (bInh)

Access	Read and write

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Description	If this attribute is set, all outgoing periodic and triggered updates for RIP and SAP will be inhibited for the port. However the port will still accept incoming RIP and SAP packets on the port. This may be useful for ports with only a bank of servers on its network in order to limit the routing traffic, assuming that servers don't require routing information or other server information.
Mib	Ipx
Values	enabled disabled
Default	disabled

GROUP Vr Pp IpxP SresProvisioned (SresProv)

Properties	Provisioned
Description	This group contains the provisioned attributes for *SourceRouteEndStation* support.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP sourceRouteEndStationSupport (sresSupport)

Access	Read and write
Description	This attribute is used to ***enable*** or ***disable*** support for *SourceRouteEndStation (Sres)*. If set to ***enable***, *Sres* will be supported on this protocol on this *ProtocolPort (Pp)*. If set to ***disable***, it will not be supported. An *Sres* component must be provisioned under the VirtualRouter if this attribute is set to ***enable***. If this attribute is set to ***enable*** and this *Pp* has its *linkToMedia* attribute set, it must be linked to a *LanApplication* (*La*) that has its *Framer interfaceName* linked to a *Fddi* or *TokenRing* component.
Mib	Ipx
Values	enable disable
Default	disable

GROUP Vr Pp IpxP OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP adminState (osiAdmin)

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ipx
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp IpxP operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ipx
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp IpxP usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Ipx
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp IpxP OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ipx
Values	up down testing
Default	up

GROUP Vr Pp IpxP Operational (Oper)

Properties	Operational
Description	The *IpxPort* Operational Attributes.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP type

Access	Read only
Description	The type of the circuit. This would differ from the provisioned type when a different routing protocol is negotiated with the peer.
Mib	Ipx

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Values	other broadcast ppp wanRip unnumberedRip
Default	No default

ATTRIBUTE Vr Pp IpxP encapsulation (encapO)

Access	Read only
Description	Packet encapsulation type that the router has determined to use on the port. There are seven encapsulation types used to identify IPX datagram as listed below. 1. ***link***: IPX encapsulation type for PPP, ATM MPE, and X25DTE media types. 2. ***ethernet*****:** IPX encapsulation type for Ethernet and FrDte media types. 3. ***novell*****:** IPX encapsulation type for Ethernet and FrDte media types. 4. ***sap*****:** IPX encapsulation type for FDDI, Token Ring, Ethernet and FrDte media types. 5. ***snap*****:** IPX encapsulation type for FDDI, Token Ring, Ethernet, and FrDte media types. 6. ***vns*****:** IPX encapsulation type for VNS media type. 7. ***tunnel***: IPX encapsulation type for Tunnel media type.
Mib	Ipx
Values	link ethernet novell sap snap vns tunnel
Default	No default

ATTRIBUTE Vr Pp IpxP networkNumber (netO)

Access	Read only
Description	The Ipx network number from the provisioned *networkNumberProv* value.
Mib	Ipx
Values	String (0..4, Dashed Hex)

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Default	No default

ATTRIBUTE Vr Pp IpxP node

Access	Read only
Description	The Ipx node address of this *IpxPort*.
Mib	Ipx
Values	String (1..6, Dashed Hex)
Default	No default

GROUP Vr Pp IpxP Statistics (Stats)

Properties	Operational
Description	The *IpxPort* Statistics group.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP stateChanges

Access	Read only
Description	Number of times the port has changed state. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP inReceives

Access	Read only
Description	Total number of packets received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP forwarded

Access	Read only
Description	Number of packets forwarded. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

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COMPONENT Vr Pp IpxP RipPort (RipP)

Groups	GROUP Vr Pp IpxP RipP Statistics (Stats)
Scope	Application
Description	*Vr/<string> PP/<string> IpxP RipP* The RIP specific information pertaining to this *IpxPort* component.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Pp IpxP RipP Statistics (Stats)

Properties	Operational
Description	RIP specific statistics for this *IpxPort*.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP RipP inPackets (inPkts)

Access	Read only
Description	The number of RIP packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP inRequests

Access	Read only
Description	The number of RIP request packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP inResponses

Access	Read only
Description	The number of RIP response packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP outPackets (outPkts)

Access	Read only
Description	The number of RIP packets sent out on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP outRequests

Access	Read only
Description	The number of RIP request packets sent out on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP outResponses

Access	Read only
Description	The number of RIP response packets sent out on this *IpxPort*. This includes RIP periodic update packets. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP incorrectPackets

Access	Read only
Description	Number of times that an incorrectly formatted RIP packet was received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

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COMPONENT Vr Pp IpxP SapPort (SapP)

Groups	GROUP Vr Pp IpxP SapP Statistics (Stats)
Scope	Application
Description	*Vr/<string> PP/<string> IpxP SapP* The SAP specific information pertaining to this *IpxPort* component.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Pp IpxP SapP Statistics (Stats)

Properties	Operational
Description	SAP specific statistics for this *IpxPort*.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP SapP inPackets (inPkts)

Access	Read only
Description	The total number of SAP packets received on this *IpxPort*. Includes SAP requests and responses. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP inRequests

Access	Read only
Description	The number of SAP Request packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP inResponses

Access	Read only
Description	The number of SAP response packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.

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Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP outPackets (outPkts)

Access	Read only
Description	The total number of SAP packets sent out this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP outRequests

Access	Read only
Description	The number of SAP request packets sent out on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP outResponses

Access	Read only
Description	The number of SAP response packets sent out this *IpxPort*. This includes periodic SAP update packets. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP incorrectPackets

Access	Read only
Description	Number of times an incorrectly formatted SAP packet was received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

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COMPONENT Vr Pp IpxP IpxWanPort (IWP)

Instance	String (1..8, Dashed Hex)
Groups	GROUP Vr Pp IpxP IWP Operational (Oper)
Scope	Application
Description	*Vr/<string> PP/<string> IpxP IWP* This component contains information for this *IpxPort* that are specific to the IPXWAN protocol.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Pp IpxP IWP Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that are specific for the IPXWAN protocol.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP IWP neighbourRouterName (neiName)

Access	Read only
Description	The name of the neighboring router on a WAN circuit.
Mib	Ipx
Values	String (0..48, ASCII)
Default	No default

ATTRIBUTE Vr Pp IpxP IWP neighbourInternalNetworkNumber (neiNet)

Access	Read only
Description	The internal network number of the neighboring router on a WAN circuit.
Mib	Ipx
Values	String (1..4, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp IpxP IWP initFails

Access	Read only
Description	The number of times initialization has failed on this circuit. This counter wraps around to zero after reaching the maximum value of 4294967295
Mib	Ipx

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Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Pp IpxP NetSentryPort (NetSentryP)

Groups	GROUP Vr Pp IpxP NetSentryP Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> IpxP NetSentryPort* This component contains the NetSentry attributes that specify the names of the NetSentry filters which will be applied to IPX packets as incoming and outgoing filters.
Mib	Ipx
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpxP NetSentryP Provisioned (Prov)

Properties	Provisioned
Description	This group contains the NetSentry attributes that specify the names of the NetSentry filters which will be applied to IPX packets as incoming and outgoing filters.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP NetSentryP inComingFilter (inFilt)

Access	Read and write
Description	This attribute specifies the name of the NetSentry filter applied to incoming IPX packets on this port.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp IpxP NetSentryP outGoingFilter (outFilt)

Access	Read and write
Description	The name of the filter applied to outgoing IPX packets on this port.
Mib	Ipx
Values	String (0..32, ASCII)

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Default	No default

COMPONENT Vr Pp SourceRouteBridgePort (SrBp)

Groups	GROUP Vr Pp SrBp Provisioned (Prov) GROUP Vr Pp SrBp StpProvisioned (StpProv) GROUP Vr Pp SrBp DomainInfoProvisioned (DIProv) GROUP Vr Pp SrBp OsiState (State) GROUP Vr Pp SrBp OperationalStatus (OperStatus) GROUP Vr Pp SrBp Operational (Oper) GROUP Vr Pp SrBp StpOperational (StpOper) GROUP Vr Pp SrBp Statistics (Stats) GROUP Vr Pp SrBp SrProvisioned (SrProv) GROUP Vr Pp SrBp SrStatistics (SrStats)
Scope	Application
Description	*Vr/<string> Pp/<string> SourceRouteBridgePort* This component represents a source route bridge port. It contains all the attributes (provisionable and operational attributes) necessary for the operation of this bridge port. The source route bridge port provides a way to facilitate source route bridging on a media interface.
Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Pp SrBp NetSentry (Ns)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp SrBp Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge

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Values	off on
Default	off

ATTRIBUTE Vr Pp SrBp portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp SrBp StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp adminStatus (as)

Access	Read and write

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Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp SrBp portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp SrBp stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp SrBp portPriority (ppr)

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Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp SrBp pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp SrBp pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp SrBp DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp domainNum (dn)

Access	Read and write

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Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp SrBp preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp SrBp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

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ATTRIBUTE Vr Pp SrBp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp SrBp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp SrBp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

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The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp SrBp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp SrBp Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and

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i is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***

Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp SrBp upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp SrBp downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp SrBp bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp SrBp bridgePortConfig (bpc)

Access	Read only

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Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp SrBp bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp SrBp ifIndex (ifin)

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Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp SrBp mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp SrBp StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken

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Default	disabled

ATTRIBUTE Vr Pp SrBp stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp SrBp designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp SrBp pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp SrBp designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp SrBp designatedPort (dp)

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Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp SrBp forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp SrBp Statistics (Stats)

Properties	Operational

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Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Pp SrBp outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp SrBp SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge
Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp SrBp exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

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ATTRIBUTE Vr Pp SrBp lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp SrBp internalLanId (ilid)

Access	Read and write
Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp SrBp bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp SrBp largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)

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Units	octets
Default	No default

ATTRIBUTE Vr Pp SrBp steSpanMode (steSm)

Access	Read and write
Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState.* If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState.* ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge
Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp SrBp areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp SrBp steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

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GROUP Vr Pp SrBp SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp apeOutFrames (apeof)

Access	Read only

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Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp dupSegmentDiscards (dsd)

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Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp hopCountExceededDiscards (hced)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Pp SrBp staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp SrBp NetSentry (Ns)

Groups	GROUP Vr Pp SrBp Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp SrBp Ns Provisioned (Prov)

Properties	Provisioned

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Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp SrBp Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp SourceRouteTransparentBridgePort (SrtBp)

Groups	GROUP Vr Pp SrtBp Provisioned (Prov) GROUP Vr Pp SrtBp TbProvisioned (TbProv) GROUP Vr Pp SrtBp StpProvisioned (StpProv) GROUP Vr Pp SrtBp DomainInfoProvisioned (DIProv) GROUP Vr Pp SrtBp OsiState (State) GROUP Vr Pp SrtBp OperationalStatus (OperStatus) GROUP Vr Pp SrtBp Operational (Oper) GROUP Vr Pp SrtBp TbOperational (TbOper) GROUP Vr Pp SrtBp StpOperational (StpOper) GROUP Vr Pp SrtBp Statistics (Stats) GROUP Vr Pp SrtBp SrProvisioned (SrProv) GROUP Vr Pp SrtBp SrStatistics (SrStats)
Scope	Application
Description	Vr/*<string>* Pp/*<string>* *SourceRouteTransparentBridgePort* This component represents a Source Route Transparent (SRT) bridge port. It contains all the attributes (provisionable and operational attributes) necessary for the operation of the bridge port. The SRT bridge port provides a mechanism to transmit and receive both source route and transparent bridge frames. In essence, the SRT bridging scheme defines a

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method for TB bridges to handle SR frames. SRT bridge ports participate in the transparent bridging spanning tree protocol.

Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Pp SrtBp NetSentry (Ns)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp SrtBp Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp SrtBp portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape

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routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time.

The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.

Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp SrtBp TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge
Values	disabled enabled
Default	disabled

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GROUP Vr Pp SrtBp StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp SrtBp portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp SrtBp stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If

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the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*

Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp SrtBp portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp SrtBp pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp SrtBp pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

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GROUP Vr Pp SrtBp DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp SrtBp preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

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GROUP Vr Pp SrtBp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp SrtBp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp SrtBp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp SrtBp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

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GROUP Vr Pp SrtBp Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp SrtBp upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp SrtBp downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp SrtBp bridgingMode (bm)

Access	Read only

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Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp SrtBp bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp SrtBp bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort

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srEncapSrBridgePort
srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort
clusterTbBridgePort
snaDlrBridgePort
unknown

Default — No default

ATTRIBUTE Vr Pp SrtBp ifIndex (ifin)

Access — Read only

Description — This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib — Bridge

Values — Decimal (1..65535)

Default — No default

ATTRIBUTE Vr Pp SrtBp mtuExceededDiscards (med)

Access — Read only

Description — This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295.
This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.

Mib — Bridge

Values — Decimal (0..4294967295)

Default — 0

GROUP Vr Pp SrtBp TbOperational (TbOper)

Properties — Operational

Description — This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode

Mib — Bridge

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ATTRIBUTE Vr Pp SrtBp maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.

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Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp inFrames (if)

Access	Read only

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Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp SrtBp StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp SrtBp stpTypeOper (stptOper)

Access	Read only

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Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp SrtBp designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp SrtBp pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp SrtBp designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp SrtBp designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.

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Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp SrtBp forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp SrtBp Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

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ATTRIBUTE Vr Pp SrtBp badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp outFilterDiscards (ofd)

Access	Read only

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Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp SrtBp SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge
Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp SrtBp exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp SrtBp lanId (lid)

Access	Read and write

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Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp SrtBp internalLanId (ilid)

Access	Read and write
Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp SrtBp bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp SrtBp largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

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ATTRIBUTE Vr Pp SrtBp steSpanMode (steSm)

Access	Read and write
Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState.* If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState.* ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge
Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp SrtBp areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp SrtBp steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp SrtBp SrStatistics (SrStats)

Properties	Operational

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Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's

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portStpState state. This counter will wrap to zero when it exceeds its maximum.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field

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	which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp hopCountExceededDiscards (hced)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp staticDiscards (sd)

Access	Read only

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Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp SrtBp NetSentry (Ns)

Groups	GROUP Vr Pp SrtBp Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp SrtBp Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

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ATTRIBUTE Vr Pp SrtBp Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp SrtBp Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp SrseBridgePort (Srse)

Groups	GROUP Vr Pp Srse Provisioned (Prov) GROUP Vr Pp Srse StpProvisioned (StpProv) GROUP Vr Pp Srse DomainInfoProvisioned (DIProv) GROUP Vr Pp Srse OsiState (State) GROUP Vr Pp Srse OperationalStatus (OperStatus) GROUP Vr Pp Srse Operational (Oper) GROUP Vr Pp Srse StpOperational (StpOper) GROUP Vr Pp Srse Statistics (Stats) GROUP Vr Pp Srse SrProvisioned (SrProv) GROUP Vr Pp Srse SrStatistics (SrStats)
Scope	Application
Description	Vr/*<string>* Pp/*<string>* *SrseBridgePort* This component represents the access point for source route frames destined for the source route encapsulating logic. Source route encapsulated bridging enables source routed frames to be tunneled through a transparent bridge/source route transparent cloud in order to reach a remote source route network. This mechanism provides for virtual connectivity of source route networks across non source route networks. The *SrseBridgePort* essentially provides an access point for source route frames into this virtual connectivity. Note that the *SrseBridgePort* and the *TbseBridgePort* must be provisioned in the same provisioning session.

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Enabling/disabling the *SrseBridgePort* automatically enables/disables the *TbseBridgePort*.

Mib: Bridge

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Pp Srse Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.

Mib: Bridge

ATTRIBUTE Vr Pp Srse fragmentIp (fIp)

Access: Read and write

Description: This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.

Mib: Bridge

Values:
off
on

Default: off

ATTRIBUTE Vr Pp Srse portNum (pNum)

Access: Read only

Criticality: Component

Description: This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port.
Notes:
Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the

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releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time.

The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.

Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Srse StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srse adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Srse portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port

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is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.

Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Srse stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srse portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Srse pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge

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Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Srse pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Srse DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srse domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Srse preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone***

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ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network.
If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it.
Preserve domain is relevant only when used in conjunction with ATM MPE.

Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Srse OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Srse adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Srse operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp Srse usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Srse OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

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Mib	Bridge

ATTRIBUTE Vr Pp Srse snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Srse Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srse portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Srse upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

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ATTRIBUTE Vr Pp Srse downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srse bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Srse bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Srse bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.

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Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Srse ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srse mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.

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Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srse StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srse stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Srse stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srse designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Srse pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srse designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Srse designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Srse forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Pp Srse blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Srse Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srse badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse tinygramFramesIn (tfi)

Access	Read only

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Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srse SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

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ATTRIBUTE Vr Pp Srse hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge
Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp Srse exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp Srse lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srse internalLanId (ilid)

Access	Read and write
Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN.

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	Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srse bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp Srse largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

ATTRIBUTE Vr Pp Srse steSpanMode (steSm)

Access	Read and write
Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState.* If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState.* ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge

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Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp Srse areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp Srse steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp Srse SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srse specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Pp Srse specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse hopCountExceededDiscards (hced)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge

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Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp TbseBridgePort (Tbse)

Groups	GROUP Vr Pp Tbse Provisioned (Prov) GROUP Vr Pp Tbse TbProvisioned (TbProv) GROUP Vr Pp Tbse StpProvisioned (StpProv) GROUP Vr Pp Tbse DomainInfoProvisioned (DIProv) GROUP Vr Pp Tbse OsiState (State) GROUP Vr Pp Tbse OperationalStatus (OperStatus) GROUP Vr Pp Tbse Operational (Oper) GROUP Vr Pp Tbse TbOperational (TbOper) GROUP Vr Pp Tbse StpOperational (StpOper) GROUP Vr Pp Tbse Statistics (Stats)
Scope	Application
Description	Vr/*<string>* Pp/*<string>* *TbseBridgePort* This component represents the access point or TB/SRT frames carrying a payload of a SR frame, into the SR encapsulation logic. After the encapsulated frame is stripped and the SR frame extracted, the extracted frame is handed down to regular SR bridging logic for further forwarding. The *TbseBridgePort* is the end point in the remote bridge unit with a MAC address, the TB/SRT encapsulated SR frames are directed to. This MAC address of a *TbseBridgePort* in the remote bridge unit, is learned and stored in the Lan Id Table (*peerMACAddress)* of the local bridge unit. Please note that the *SrseBridgePort* and the *TbseBridgePort* are always to be provisioned together. Enabling/disabling the *SrseBridgePort* automatically enables/disables the *TbseBridgePort*.
Mib	Bridge
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp Tbse Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse fragmentIp (fIp)

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Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp Tbse portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Tbse TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.

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Mib	Bridge

ATTRIBUTE Vr Pp Tbse secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge
Values	disabled enabled
Default	disabled

GROUP Vr Pp Tbse StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Tbse portStateStpControl (psstpc)

Access	Read and write

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Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Tbse stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbse portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Tbse pathCost (pc)

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Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Tbse pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Tbse DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)

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Default	1

ATTRIBUTE Vr Pp Tbse preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Tbse OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Bridge

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr Pp Tbse operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Bridge

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Pp Tbse usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Bridge

Values — idle
active (activ)
busy

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Default	idle

GROUP Vr Pp Tbse OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Tbse Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbse upTime (ut)

Access	Read only

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Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbse downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbse bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Tbse bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge

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Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Tbse bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Tbse ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbse mtuExceededDiscards (med)

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Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbse TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp Tbse maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries.

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This attribute, *badVerifyDiscards*, is directly influenced by:
1. *secureOption* and
2. the static table entries.
This counter wraps around its maximum value of 4294967295.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in

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learning state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

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GROUP Vr Pp Tbse **StpOperational (StpOper)**

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse **stpPortState (sps)**

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Tbse **stpTypeOper (stptOper)**

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbse **designatedCost (dc)**

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Tbse **pathCostOper (pco)**

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Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbse designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Tbse designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Tbse forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse blockingDiscards (bd)

Access	Read only

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Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Tbse Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Pp Tbse tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp SrsgBridgePort (Srsg)

Groups	GROUP Vr Pp Srsg Provisioned (Prov) GROUP Vr Pp Srsg StpProvisioned (StpProv) GROUP Vr Pp Srsg DomainInfoProvisioned (DIProv) GROUP Vr Pp Srsg OsiState (State) GROUP Vr Pp Srsg OperationalStatus (OperStatus) GROUP Vr Pp Srsg Operational (Oper) GROUP Vr Pp Srsg StpOperational (StpOper) GROUP Vr Pp Srsg Statistics (Stats) GROUP Vr Pp Srsg SrProvisioned (SrProv) GROUP Vr Pp Srsg SrStatistics (SrStats)
Scope	Application

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Description	Vr/*<string>* *Pp/<string>* *SrsgBridgePort* This component represents a controlled method to allow exchange of explorer frames between source route (SR) and source route transparent (SRT) networks.The *SrsgBridgePort* provides a cross over point for explorer frames from the source route network into the source route gating logic and vice-versa. The source route gating performs required verification before forwarding the frames into the source route transparent network. The *SrsgBridgePort* participates in the source route spanning tree to eliminate possible loops caused by multiple active cross over points on multiple bridges and to provide for fault tolerance of these cross over points. While enabled, source route spanning tree BPDUs are sent across the source route transparent network, through this cross over point and the gating logic. Note that these explorer frames cross over based on the port's *stpPortState.* All route explorer frames (ARE) are exchanged regardless of the *stpPortState*. Spanning tree explorer frames (STE) are exchanged only if *stpPortState* has a value of ***Forwarding.*** If *stpPortState* has a value of ***Blocking*** STE frames will be sent out on bridge ports that are operating in the same mode, i.e. no exchange across SR and SRT networks takes place. Nevertheless, SR spanning tree BPDUs are still sent across the SRT network. Note that the *SrsgBridgePort* and the *TbsgBridgePort* must be provisioned during the same provisioning session as one cannot function without the other.
Mib	Bridge
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp Srsg Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg fragmentIp (fIp)

Access	Read and write

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Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp Srsg portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Srsg StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.

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Mib	Bridge

ATTRIBUTE Vr Pp Srsg adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Srsg portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Srsg stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge

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Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srsg portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Srsg pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Srsg pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Srsg DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.

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Mib	Bridge

ATTRIBUTE Vr Pp Srsg domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Srsg preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Srsg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Bridge

ATTRIBUTE Vr Pp Srsg adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Bridge

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Vr Pp Srsg operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib Bridge

Values enabled (ena)
disabled (dis)

Default disabled

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ATTRIBUTE Vr Pp Srsg usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Srsg OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Srsg Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

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ATTRIBUTE Vr Pp Srsg portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Srsg upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srsg downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srsg bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt

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Default	No default

ATTRIBUTE Vr Pp Srsg bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Srsg bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort

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	snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Srsg ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srsg mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srsg StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge

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Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Srsg stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srsg designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Srsg pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srsg designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.

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Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Srsg designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Srsg forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge

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Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Srsg Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg inFilterDiscards (ifd)

Access	Read only

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Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srsg SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge
Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp Srsg exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb

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translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.

Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp Srsg lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srsg internalLanId (ilid)

Access	Read and write
Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srsg bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp Srsg largestFrame (lf)

Access	Read and write

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Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

ATTRIBUTE Vr Pp Srsg steSpanMode (steSm)

Access	Read and write
Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState.* If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState.* ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge
Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp Srsg areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp Srsg steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or

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SourceRouteTransparentBridgePort. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.

Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp Srsg SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.

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Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment

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value in the routing information field. This counter will wrap to zero when it exceeds its maximum.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg hopCountExceededDiscards (hced)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg lanIdMismatches

Access	Read only

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Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp TbsgBridgePort (Tbsg)

Groups	GROUP Vr Pp Tbsg Provisioned (Prov) GROUP Vr Pp Tbsg TbProvisioned (TbProv) GROUP Vr Pp Tbsg StpProvisioned (StpProv) GROUP Vr Pp Tbsg DomainInfoProvisioned (DIProv) GROUP Vr Pp Tbsg OsiState (State) GROUP Vr Pp Tbsg OperationalStatus (OperStatus) GROUP Vr Pp Tbsg Operational (Oper) GROUP Vr Pp Tbsg TbOperational (TbOper) GROUP Vr Pp Tbsg StpOperational (StpOper) GROUP Vr Pp Tbsg Statistics (Stats)
Scope	Application
Description	Vr/*<string>* Pp/*<string>* *TbsgBridgePort* This component represents a controlled way to allow exchange of explorer

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frames between SR and SRT networks.The *TbsgBridgePort* provides a cross over point for explorer frames from the source route gating logic into a SRT network and vice-versa. This port can and should be enabled / disabled through the *SrsgBridgePort*. This bridge port does not participate in the SR spanning tree protocol. Nevertheless, SR spanning tree BPDUs are still sent out across into the SRT network. Note that the *SrsgBridgePort* and the *TbsgBridgePort* should always be provisioned together, as one of these bridge ports cannot function without the other.

Mib: Bridge

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Pp Tbsg Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.

Mib: Bridge

ATTRIBUTE Vr Pp Tbsg fragmentIp (fIp)

Access: Read and write

Description: This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.

Mib: Bridge

Values:
off
on

Default: off

ATTRIBUTE Vr Pp Tbsg portNum (pNum)

Access: Read only

Criticality: Component

Description: This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port.
Notes:

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Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time.

The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.

Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Tbsg TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge

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Values	disabled enabled
Default	disabled

GROUP Vr Pp Tbsg StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Tbsg portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Tbsg stpTypeProv (stptProv)

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Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbsg portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Tbsg pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise*.*
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Tbsg pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge

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Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Tbsg DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Tbsg preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge

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Values	off on
Default	No default

GROUP Vr Pp Tbsg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Tbsg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Bridge

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Pp Tbsg usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Bridge

Values — idle
active (activ)
busy

Default — idle

GROUP Vr Pp Tbsg OperationalStatus (OperStatus)

Properties — Operational

Description — This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib — Bridge

ATTRIBUTE Vr Pp Tbsg snmpOperStatus

Access — Read only

Description — The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib — Bridge

Values — up
down
testing

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Default	up

GROUP Vr Pp Tbsg Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbsg upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbsg downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbsg bridgingMode (bm)

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Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Tbsg bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Tbsg bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort

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atmMpeBridgePort
srEncapSrBridgePort
srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort
clusterTbBridgePort
snaDlrBridgePort
unknown

Default — No default

ATTRIBUTE Vr Pp Tbsg ifIndex (ifin)

Access — Read only

Description — This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib — Bridge

Values — Decimal (1..65535)

Default — No default

ATTRIBUTE Vr Pp Tbsg mtuExceededDiscards (med)

Access — Read only

Description — This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295.
This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.

Mib — Bridge

Values — Decimal (0..4294967295)

Default — 0

GROUP Vr Pp Tbsg TbOperational (TbOper)

Properties — Operational

Description — This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode

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Mib	Bridge

ATTRIBUTE Vr Pp Tbsg maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the

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bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg inFrames (if)

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Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbsg StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Tbsg stpTypeOper (stptOper)

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Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbsg designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Tbsg pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbsg designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Tbsg designatedPort (dp)

Access	Read only

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Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Tbsg forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Tbsg Statistics (Stats)

Properties	Operational

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Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Pp Tbsg outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp ClusterSrBridgePort (Srcl)

Groups	GROUP Vr Pp Srcl Provisioned (Prov) GROUP Vr Pp Srcl StpProvisioned (StpProv) GROUP Vr Pp Srcl DomainInfoProvisioned (DIProv) GROUP Vr Pp Srcl OsiState (State) GROUP Vr Pp Srcl OperationalStatus (OperStatus) GROUP Vr Pp Srcl Operational (Oper) GROUP Vr Pp Srcl StpOperational (StpOper) GROUP Vr Pp Srcl Statistics (Stats) GROUP Vr Pp Srcl SrProvisioned (SrProv) GROUP Vr Pp Srcl SrStatistics (SrStats)
Scope	Application
Description	*Vr/<string> Pp/<string> ClusterSrBridgePort* This component represents the functionality called Cluster Bridging. Cluster Bridging allows for MAC frames, carrying packets belonging a certain network protocol, to be bridged and routed at the same time. Also, it provides for a convenient way to manage the entire cluster of LANs, using a single attachment point to the cluster of LANs, the Cluster Bridge Port. To realize these features, the network protocol(s) should also be provisioned on same port as the Cluster Bridge Port. *ClusterSrBridgePort* represents a cluster of Sr LANs.
Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Pp Srcl NetSentry (Ns)
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Vr Pp Srcl Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp Srcl portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.

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Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Srcl StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Srcl portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

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ATTRIBUTE Vr Pp Srcl stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper.*
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srcl portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Srcl pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Srcl pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost.*
Mib	Bridge

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Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Srcl DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Srcl preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge

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Values	off on
Default	No default

GROUP Vr Pp Srcl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Srcl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Bridge

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Pp Srcl usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Bridge

Values — idle
active (activ)
busy

Default — idle

GROUP Vr Pp Srcl OperationalStatus (OperStatus)

Properties — Operational

Description — This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib — Bridge

ATTRIBUTE Vr Pp Srcl snmpOperStatus

Access — Read only

Description — The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib — Bridge

Values — up
down
testing

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Default	up

GROUP Vr Pp Srcl Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Srcl upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srcl downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srcl bridgingMode (bm)

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Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Srcl bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Srcl bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort

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atmMpeBridgePort
srEncapSrBridgePort
srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort
clusterTbBridgePort
snaDlrBridgePort
unknown

Default — No default

ATTRIBUTE Vr Pp Srcl ifIndex (ifin)

Access — Read only

Description — This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib — Bridge

Values — Decimal (1..65535)

Default — No default

ATTRIBUTE Vr Pp Srcl mtuExceededDiscards (med)

Access — Read only

Description — This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295.
This counter is influenced by the attribute *fragmentIp.* This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.

Mib — Bridge

Values — Decimal (0..4294967295)

Default — 0

GROUP Vr Pp Srcl StpOperational (StpOper)

Properties — Operational

Description — This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.

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Mib	Bridge

ATTRIBUTE Vr Pp Srcl stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Srcl stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srcl designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Srcl pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge

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Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srcl designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Srcl designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Srcl forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Pp Srcl designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Srcl Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.

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Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srcl SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge
Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp Srcl exploreFrameTreatment (eft)

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Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp Srcl lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srcl internalLanId (ilid)

Access	Read and write
Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srcl bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.

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Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp Srcl largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

ATTRIBUTE Vr Pp Srcl steSpanMode (steSm)

Access	Read and write
Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState.* If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState.* ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge
Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp Srcl areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge

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Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp Srcl steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp Srcl SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl apeInFrames (apeif)

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Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Pp Srcl segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl hopCountExceededDiscards (hced)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Pp Srcl lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp Srcl NetSentry (Ns)

Groups	GROUP Vr Pp Srcl Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In

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essence, it allows for the definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.

Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp Srcl Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp Srcl Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr NetSentry (Ns)

Groups	GROUP Vr Ns Provisioned (Prov) GROUP Vr Ns Statistics (Stats)
Scope	Application

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Description	*Vr/<string> NetSentry* This is the top-level component for NetSentry. It exists to hold global NetSentry data, and the subcomponents.
Mib	NetSentry
Opt. Subcomp.	COMPONENT Vr Ns File COMPONENT Vr Ns Engine COMPONENT Vr Ns IPStatistics (IPStats) COMPONENT Vr Ns IPXStatistics (IPXStats) COMPONENT Vr Ns AppletalkStatistics (ATStats) COMPONENT Vr Ns DECnetStatistics (DNStats) COMPONENT Vr Ns BridgingStatistics (BrStats)
Dyn. Subcomp.	COMPONENT Vr Ns Filter
Common Verbs	Help List Display Add DELete

GROUP Vr Ns Provisioned (Prov)

Properties	Provisioned
Description	This contains the global *NetSentry* control flags.
Mib	NetSentry

ATTRIBUTE Vr Ns dropConditions

Access	Read and write
Description	This attribute controls under what circumstances *NetSentry* drops packets. It is possible for *NetSentry* to drop packets when: There is no memory to contain statistics for this packet (statsNoMem), it is for whatever reason impossible to clone, copy, or log a copy of the packet via the clone_to copy_to or log_to actions respectively (cantCloneTo, cantCopyTo and cantLogTo), and if the packet encounters a filter which is provisioned at a filter point within a protocol component, but not defined in any of the files defined by *File* components within *NetSentry* (this is a Null filter).
Mib	NetSentry
Set of	statsNoMem cantCloneTo cantLogTo cantCopyTo cantMacCloneTo nullFilter
Default	No default

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GROUP Vr Ns Statistics (Stats)

Properties	Operational
Description	This contains the global *NetSentry* (in particular, non-protocol specific) statistics.
Mib	NetSentry

ATTRIBUTE Vr Ns packetsProcessed (packets)

Access	Read only
Description	This attribute counts the total number of packets processed through *NetSentry*. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns packetsFailed (failed)

Access	Read only
Description	This attribute counts the total number of packets processed through *NetSentry* which ended with a fail disposition. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns statsNoMem (mem)

Access	Read only
Description	This attribute counts the total number of packets processed through *NetSentry* for which statistic should have been gathered, but for which statistics were not gathered due to a failure to allocate memory. Such packets may or may not be dropped according to the values provisioned in *dropConditions* under the *NetSentry* component. If this attribute is being incremented, the system is suffering from memory shortfalls, and some operator action is advised. Perhaps memory allocations should be re-provisioned, *NetSentry* statistics gathering should be reduced, or *NetSentry* statistics tables should be cleared to temporarily free memory. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ns hsaOkayFailed (hsaokfailed)

Access	Read only
Description	This attribute counts the total number of packets processed through *NetSentry* which encountered, and did not match, an hsa_okay pattern. Such packets are likely to be generated from misconfigured hosts. Some operator action to track down these hosts is advised. This counter will wrap around to zero should it ever exceed its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns depthExceeded (depth)

Access	Read only
Description	This attribute counts the total number of times a *NetSentry* filter was executed which referenced too many layers of indirect filters. If this count is non-zero, the filter definitions the unit is using are incorrect, and some operator action to track down the erroneous filter definitions is advised. Filters will not be behaving correctly if this counter is increasing, and security could be compromised. This count should always be zero, and it will wrap around to zero should it ever exceed its maximum value of 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedStatsNoMem (dropSNM)

Access	Read only
Description	This counts the total number of packets that were actually dropped due to an inability to allocate memory to hold statistics for the packet. Such a packet must have had a *NetSentry* statistics gathering action applied to it, in order for the attempt to gather statistics to be made, and the *dropConditions* attribute must include the ***statsNoMem*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedCantCloneTo (dropCCloneT)

Access	Read only

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Description	This counts the total number of packets that were dropped due to the failure of a clone_to action applied to the packet. This counter will only increment if the *dropConditions* attribute includes the ***cantCloneTo*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedCantLogTo (dropCLogT)

Access	Read only
Description	This counts the total number of packets that were dropped due to the failure of a log_to action applied to the packet. This counter will only increment if the *dropConditions* attribute includes the ***cantLogTo*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedCantCopyTo (dropCCopyT)

Access	Read only
Description	This counts the total number of packets that were dropped due to the failure of a copy_to action applied to the packet. This counter will only increment if the *dropConditions* attribute includes the ***cantCopyTo*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedNullFilter (dropNF)

Access	Read only
Description	This counts the total number of packets that were dropped because the packet passed through a filter point into which was provisioned a filter which was never defined in a file loaded into *NetSentry.* Such filter points have atached to the the so-call Null Filter, which will either succeed or fail all packets passing through it, depending on whether or not the *dropConditions* attribute includes the ***nullFilter*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)

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Default	0

COMPONENT Vr Ns File

Instance	String (1..64, ASCII)
Groups	GROUP Vr Ns File Operational (Oper)
Scope	Application
Description	*Vr/<string> NetSentry File/<filename>* This component's instance value is a single filename to be compiled. The file must reside in /provisioning/netsentry/prov in order to be compiled at provisioning activate time, but in /provisioning/netsentry/oper to be recompiled with the *ReLoad* verb. This is to provide the same sort of protections that the provisioning system gives with its activate-confirm-commit sequence.
Mib	NetSentry
Common Verbs	Help List Display Add DELete

VERB RELoad Vr Ns File

Impact	Configuration
Description	*RELoad VR/<string> NS File/<filename>* This verb compiles the file to which the *File* component the verb applies to refers, searching for the named file in the /provisioning /netsentry/oper subdirectory. This is in contrast to the provisioning-time load, which searches the /provisioning/netsentry/prov subdirectory. This provides some measure of safety in the event of misconfigured filters, since rebooting the unit will cause *NetSentry* to fall back to the filters defined in files in the prov subdirectory. Presently, the operator must manually 'commit' a file of filter definitions by moving or copying it from the oper subdirectory to the prov subdirectory. This verb will return either success or failure, with a detailed error message both returned in the failure, and set in the *File* component itself.

GROUP Vr Ns File Operational (Oper)

Properties	Operational
Description	This holds hold a single compiler error message.
Mib	NetSentry

ATTRIBUTE Vr Ns File compilerErrorMsg

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Access	Read only
Description	This attribute contains a single string holding the compiler error which caused the compile to fail. In the event that the file is recompiled (using the *RELoad* verb), the value of this will change, to reflect the new error, if any was encountered, or no error, if the compile was successful.
Mib	NetSentry
Values	String (1..80, ASCII)
Default	"No Error"

COMPONENT Vr Ns Engine

Instance	Decimal (0..15)
Scope	Application
Description	*Vr/<string> NetSentry Engine/n* The existence of this component represents the presence of NetSentry on a particular Logical Processor. Each *Engine* component must correspond to a matching *Lp* component. If *NetSentry* filtering is needed on some *Lp*, a corresponding *Engine* must be provisioned.
Mib	NetSentry
Common Verbs	Help List Display Add DELete

COMPONENT Vr Ns IPStatistics (IPStats)

Scope	Application
Description	*Vr/<string> NetSentry IPStats* This component holds all the statistics gathered for the IP protocol. If *IPStatistics* is provisioned, *NetSentry* statistics gathering actions will gather statistics for all IP packets to which they apply.
Mib	NetSentry
Dyn. Subcomp.	COMPONENT Vr Ns IPStats AddressStatistic (AddrStat)
Common Verbs	Help List Display Add DELete

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VERB CLEAR Vr Ns IPStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns IPStats* This clears statistics gathered for IP, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns IPStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	GROUP Vr Ns IPStats AddrStat Statistics (Stats)
Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a "-", which indicates that the other index is the relevent one. That is, a statistic referred to with source address "128.12.3.7" and destination address "-" is a statistic for packets originating from 128.12.3.7 alone.
Mib	NetSentry
Common Verbs	Help List Display

GROUP Vr Ns IPStats AddrStat Statistics (Stats)

Properties	Operational
Description	This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.
Mib	NetSentry

ATTRIBUTE Vr Ns IPStats AddrStat packetCount

Access	Read only
Description	This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ns IPStats AddrStat byteCount

Access	Read only
Description	This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPStats AddrStat counter1

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPStats AddrStat counter2

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns IPXStatistics (IPXStats)

Scope	Application
Description	*Vr/<string> NetSentry IPXStats* This component holds all the statistics gathered for the IPX protocol. If

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IPXStatistics is provisioned, *NetSentry* statistics gathering actions will gather statistics for all IPX packets to which they apply.

Mib NetSentry

Dyn. Subcomp. COMPONENT Vr Ns IPXStats AddressStatistic (AddrStat)

Common Verbs
Help
List
Display
Add
DELete

VERB CLEAR Vr Ns IPXStats

Impact System_admin

Description *CLEAR Vr/<string> Ns IPXStats*
This clears statistics gathered for IPX, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns IPXStats AddressStatistic (AddrStat)

Instance sourceAddress (sa) [String (1..32, ASCII)]
destinationAddress (da) [String (1..32, ASCII)]

Groups GROUP Vr Ns IPXStats AddrStat Statistics (Stats)

Scope Application

Description *Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-*
This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a “-”, which indicates that the other index is the relevent one. That is, a statistic referred to with source address “128.12.3.7” and destination address “-” is a statistic for packets originating from 128.12.3.7 alone.

Mib NetSentry

Common Verbs
Help
List
Display

GROUP Vr Ns IPXStats AddrStat Statistics (Stats)

Properties Operational

Description This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.

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Mib	NetSentry

ATTRIBUTE Vr Ns IPXStats AddrStat packetCount

Access	Read only
Description	This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPXStats AddrStat byteCount

Access	Read only
Description	This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPXStats AddrStat counter1

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPXStats AddrStat counter2

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

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COMPONENT Vr Ns AppletalkStatistics (ATStats)

Scope	Application
Description	*Vr/<string> NetSentry ATStats* This component holds all the statistics gathered for the AppleTalk protocol. If *AppleTalkStatistics* is provisioned, *NetSentry* statistics gathering actions will gather statistics for AppleTalk packets to which they apply.
Mib	NetSentry
Dyn. Subcomp.	COMPONENT Vr Ns ATStats AddressStatistic (AddrStat)
Common Verbs	Help List Display Add DELete

VERB CLEAR Vr Ns ATStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns ATStats* This clears statistics gathered for Appletalk, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns ATStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	GROUP Vr Ns ATStats AddrStat Statistics (Stats)
Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a “-”, which indicates that the other index is the relevent one. That is, a statistic referred to with source address “128.12.3.7” and destination address “-” is a statistic for packets originating from 128.12.3.7 alone.
Mib	NetSentry
Common Verbs	Help List Display

GROUP Vr Ns ATStats AddrStat Statistics (Stats)

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Properties	Operational
Description	This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.
Mib	NetSentry

ATTRIBUTE Vr Ns ATStats AddrStat **packetCount**

Access	Read only
Description	This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns ATStats AddrStat **byteCount**

Access	Read only
Description	This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns ATStats AddrStat **counter1**

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns ATStats AddrStat **counter2**

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry

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Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns DECnetStatistics (DNStats)

Scope	Application
Description	*Vr/<string> NetSentry DNStats* This component holds all the statistics gathered for the DECnet protocol. If *DECnetStatistics* is provisioned, *NetSentry* statistics gathering actions will gather statistics for DECnet packets to which they apply.
Mib	NetSentry
Dyn. Subcomp.	COMPONENT Vr Ns DNStats AddressStatistic (AddrStat)
Common Verbs	Help List Display Add DELete

VERB CLEAR Vr Ns DNStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns DNStats* This clears statistics gathered for DECnet, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns DNStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	GROUP Vr Ns DNStats AddrStat Statistics (Stats)
Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a “-”, which indicates that the other index is the relevent one. That is, a statistic referred to with source

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address “128.12.3.7” and destination address “-” is a statistic for packets originating from 128.12.3.7 alone.

Mib	NetSentry
Common Verbs	Help List Display

GROUP Vr Ns DNStats AddrStat Statistics (Stats)

Properties	Operational
Description	This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.
Mib	NetSentry

ATTRIBUTE Vr Ns DNStats AddrStat packetCount

Access	Read only
Description	This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns DNStats AddrStat byteCount

Access	Read only
Description	This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns DNStats AddrStat counter1

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Ns DNStats AddrStat counter2

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns BridgingStatistics (BrStats)

Scope	Application
Description	*Vr/<string> NetSentry BrStats* This component holds all the statistics gathered for Bridged packets. If *BridgingStatistics* is provisioned, *NetSentry* statistics gathering actions will gather statistics for Bridged packets to which they apply.
Mib	NetSentry
Dyn. Subcomp.	COMPONENT Vr Ns BrStats AddressStatistic (AddrStat)
Common Verbs	Help List Display Add DELete

VERB CLEAR Vr Ns BrStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns BrStats* This clears statistics gathered for Bridging, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns BrStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	GROUP Vr Ns BrStats AddrStat Statistics (Stats)
Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination

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address. One of the indices may be a “-”, which indicates that the other index is the relevent one. That is, a statistic referred to with source address “128.12.3.7” and destination address “-” is a statistic for packets originating from 128.12.3.7 alone.

Mib NetSentry

Common Verbs
Help
List
Display

GROUP Vr Ns BrStats AddrStat Statistics (Stats)

Properties Operational

Description This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.

Mib NetSentry

ATTRIBUTE Vr Ns BrStats AddrStat packetCount

Access Read only

Description This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.

Mib NetSentry

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Vr Ns BrStats AddrStat byteCount

Access Read only

Description This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.

Mib NetSentry

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Vr Ns BrStats AddrStat counter1

Access Read only

Description This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.

Mib NetSentry

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns BrStats AddrStat counter2

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns Filter

Instance	name [String (1..32, ASCII)] kind [filter pafSet compartment aesoData nleso aeso accreditTable setData metaFilter]
Groups	GROUP Vr Ns Filter Statistics (Stats)
Scope	Application
Description	*Vr/<string> NetSentry Filter/not_tcp,Filter* Each instance of this component names a single *NetSentry* Filter or other *NetSentry* data object.
Mib	NetSentry
Common Verbs	Help List Display

GROUP Vr Ns Filter Statistics (Stats)

Properties	Operational
Description	This group contains the various counters associated with a particular filter definition. A packet being processed through a *NetSentry* filter will encounter zero or more dispositions according to which elements of the filter have patterns which match the packet. This group counts, for the enclosing *Filter*, how many packets encountered each sort of disposition while being processed through the filter.

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Mib	NetSentry

ATTRIBUTE Vr Ns Filter packetsSucceeded

Access	Read only
Description	This counter contains the number of packets which passed through *NetSentry*, which happen to have been matched against an element of the enclosing *Filter* component which had a succeed disposition.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter bytesSucceeded

Access	Read only
Description	This counter counts the number of bytes in the packets counted in the *packetsSucceeded*.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter packetsFailed

Access	Read only
Description	This counter contains the number of packets which passed through *NetSentry*, which happen to have been matched against an element of the enclosing *Filter* which had a fail disposition.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter bytesFailed

Access	Read only
Description	This counter counts the number of bytes in the packets counted in the *packetsFailed* counter.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter packetsBreaked

Access	Read only

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Description	This counter contains the number of packets which passed through *NetSentry*, which happen to have been matched against an element of the enclosing *Filter* which had a break disposition.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter bytesBreaked

Access	Read only
Description	This counter counts the number of bytes in the packets counted in the *packetsBreaked* counter.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter packetsContinued

Access	Read only
Description	This counter contains the number of packets which passed through *NetSentry*, which happen to have been matched against at least one element of the enclosing *Filter* which had a continue disposition. Such a packet may also have been counted in one of the *packetsSucceeded* *packetsFailed* or *packetsBreaked* counters, since a continue disposition does not exit a *NetSentry* filter unless it is the disposition in the last element of the filter.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter bytesContinued

Access	Read only
Description	This counter counts the number of bytes in the packets counted in the *packetsContinued* counter.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Bridge (Br)

Groups	GROUP Vr Br AdministrativeControl (AdminControl) GROUP Vr Br OsiState (State)

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	GROUP Vr Br OperationalStatus (OperStatus) GROUP Vr Br Operational (Oper)
Scope	Application
Description	*Vr/<string> Bridge* This component represents the bridge logic, and all the associated attribute groups. All the various functions provided by bridging are encompassed by this component.
Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Br NetSentry (Ns) COMPONENT Vr Br TransparentBridge (Tb) COMPONENT Vr Br SourceRouteBridge (Srb)
Dyn. Subcomp.	COMPONENT Vr Br PortTableEntry (Pte)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Br AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Bridge

ATTRIBUTE Vr Br adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative status for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation. The application preserves all previously received provisioning data, all writable operational data and all counters. Please note that all learnt data are lost. The bridge application is not available for operation while in this state.
Mib	Bridge
Values	up down
Default	up

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GROUP Vr Br OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Br adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Br operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Br usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Br OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Br snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

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GROUP Vr Br Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes applicable to bridging, those components that are global in nature and are not port specific.
Mib	Bridge

ATTRIBUTE Vr Br bridgeAddress (ba)

Access	Read only
Description	This attribute represents the Mac address for the bridge. This address is used when this bridge must be referred to in a unique manner. It is used to form the bridge identifier, used by the spanning tree protocol, by concatenating it with the attribute bridgePriority under the component *SpanningTreeProtocol.*
Mib	Bridge
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br numPorts (np)

Access	Read only
Description	This attribute represents the number of the ports this bridge controls. In other words, it is a count of the number of bridge ports provisioned.
Mib	Bridge
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vr Br type

Access	Read only
Description	This attribute indicates the capability of this bridge unit in terms of types of bridging it can handle.
Mib	Bridge
Values	unknown transparentOnly sourceRouteOnly srt
Default	No default

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COMPONENT Vr Br PortTableEntry (Pte)

Instance	domainNum [Decimal (1..4294967293)] portName [String (0..29, ASCII)] mode [tb sr srt]
Groups	GROUP Vr Br Pte Operational (Oper)
Scope	Application
Description	*Vr/<string> Bridge PortTableEntry/<Decimal>,<string>,mode* This component is one of a group of similar components that forms a table. This table contains all the bridge ports provisioned and the corresponding domains they belong to. This table can be used as a central place to access all the information about bridge ports and the domains associated with these bridge ports. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293.
Mib	Bridge
Common Verbs	Help List Display

GROUP Vr Br Pte Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the *PortTableEntry* component.
Mib	Bridge

ATTRIBUTE Vr Br Pte macType

Access	Read only
Description	This attribute indicates the Mac type of the bridge port is associated with.
Mib	Bridge
Values	ethernet tokenRing fddiBridgePort tokenBus lecEthernet fddiEncapsulating vns frameRelay ppp smds

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	vcp x25 atmMpe srEncapSr srEncapTb sourceGateSr sourceGateTb srtb tbsr clusterSr clusterTb snaDlr unknown
Default	No default

ATTRIBUTE Vr Br Pte stpState

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Br Pte stpType

Access	Read only
Description	This attribute indicates the type of the spanning tree protocol this bridge port is participating in.
Mib	Bridge
Values	unknown dec ieee_8021
Default	ieee_8021

ATTRIBUTE Vr Br Pte portPointsTo

Access	Read only
Description	This attribute indicates the fact if this bridge port leads to the root bridge of the spanning tree topology or if it leads to the designated bridge of the lan segment the bridge port is attached to.

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Mib	Bridge
Values	none rootBridge designatedBridge
Default	none

COMPONENT Vr Br NetSentry (Ns)

Groups	GROUP Vr Br Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Bridge NetSentry* This component represents the net sentry facility as applicable to bridging. It serves to allow the user to provision filter names that are applicable at the first, the last filter, the localIn and the localOut points and also the filter apply table.
Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Br Ns ApplyTableEntry (Ate)
Common Verbs	Help List Display Add DELete

GROUP Vr Br Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the provisionable attributes applicable to the packet control facility. These attributes are global attributes and are not port specific.
Mib	Bridge

ATTRIBUTE Vr Br Ns firstFilter (ff)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the first filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Br Ns lastFilter (lf)

Access	Read and write

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Description	This attribute specifies the name of the filter that is to be applied at the last filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Br Ns ApplyTableEntry (Ate)

Instance	Decimal (0..255)
Groups	GROUP Vr Br Ns Ate Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Bridge NetSentry ApplyTableEntry/<Decimal>* This component, represents an entry in the filter apply table. The filter apply table is used to specifically filter frames, based on a frame's origin, its destination, and the domain associated with the frame. A filter name is specified in the entry, which is applied to a frame if the match criteria is satisfied. When the attribute *direction* has the value ***to***, a match in the filter table requires the *firstMACAddress* anded with the *firstMACAddressMask* to match the source MAC address in the frame, the *secondMACAddress* anded with the *secondMACAddressMask to* match the destination MAC address in the frame, and the *domainNum* to match the domain number associated with the frame. When the *direction* has the value ***from***, a match in the filter table requires the *firstMACAddress* anded with the *firstMACAddressMask* to match the destination MAC address in the frame, the *secondMACAddress* anded with the *secondMACAddressMask to* match the source MAC address in the frame, and the *domainNum* to match the domain number associated with the frame. When the *direction* has the value ***toFrom***, a match in the filter table requires the *firstMACAddress* anded with the *firstMACAddressMask* to match the source/destination MAC address in the frame, the *secondMACAddress* anded with the *secondMACAddressMask to* match the destination/source MAC address in the frame, and the *domainNum* to match the domain number associated with the frame.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Br Ns Ate Provisioned (Prov)

Properties	Provisioned

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Description	This group houses all the attributes that together form an apply table entry. These fields of an apply table entry are used as match criteria, which when satisfied results in the application of the named filter to the frame.
Mib	Bridge

ATTRIBUTE Vr Br Ns Ate **domainNum (dn)**

Access	Read and write
Description	This attribute specifies the domain number associated with a frame, that would qualify it partly, for a match in the apply table. The domain number provisioned will form a part of the match criteria only if it is not provisioned with a wild card value of ***0.*** If the wild card character is specified, any domain number will satisfy the match criteria, in effect loosing domain number as a qualifier in the match criteria.
Mib	Bridge
Values	Decimal (0..4294967293)
Default	0

ATTRIBUTE Vr Br Ns Ate **firstMacAddress (fma)**

Access	Read and write
Description	This attribute specifies the MAC address to be anded with the *firstMACAddressMask,* and the result compared with- a) The source MAC address in a frame when the attribute *direction* has a value of ***to***, b) The destination MAC address in a frame when the attribute *direction* has a value of ***from***, c) Source / Destination address in a frame when the attribute *direction* has a value of ***toFrom***, as a part of finding a match in the bridge filter apply table.
Mib	Bridge
Values	String (6, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Vr Br Ns Ate **firstMacAddressMask (fmam)**

Access	Read and write
Description	This attribute specifies the mask which is anded with the attribute *firstMACAddress.* The result is then compared with- a) The source MAC address in a frame when the attribute *direction* has a value of ***to***, b) The destination MAC address in a frame when the attribute *direction* has a value of ***from***, c) Source / Destination address in a frame when the attribute *direction* has a value of ***toFrom***, as a part of finding a match in the bridge filter apply table.

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Mib	Bridge
Values	String (6, Dashed Hex)
Default	ff-ff-ff-ff-ff-ff

ATTRIBUTE Vr Br Ns Ate secondMacAddress (sma)

Access	Read and write
Description	This attribute specifies the MAC address to be anded with the *secondMACAddressMask,* and the result compared with- a) The destination MAC address in a frame when the attribute *direction* has a value of ***to***, b) The source MAC address in a frame when the attribute *direction* has a value of ***from***, c) Destination/Source address in a frame when the attribute *direction* has a value of ***toFrom***, as a part of finding a match in the bridge filter apply table.
Mib	Bridge
Values	String (6, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Vr Br Ns Ate secondMacAddressMask (smam)

Access	Read and write
Description	This attribute specifies the mask which is anded with the attribute *secondMACAddress.* The result is then compared with- a) The destination MAC address in a frame when the attribute *direction* has a value of ***to***, b) The source MAC address in a frame when the attribute *direction* has a value of ***from***, c) Destination/Source address in a frame when the attribute *direction* has a value of ***toFrom***, as a part of finding a match in the bridge filter apply table.
Mib	Bridge
Values	String (6, Dashed Hex)
Default	ff-ff-ff-ff-ff-ff

ATTRIBUTE Vr Br Ns Ate direction (dir)

Access	Read and write
Description	This attribute specifies the direction of frame flow. It is used to appropriately compare the result of logically anding MAC address, MACAddressMask pairs, with the source /destination MAC address fields in a frame, as a part of the match finding process. When this attribute has value of ***to***, the *firstMACAddress* is logically anded with the *firstMACAddressMask* and the result compared with the source MAC address in a frame and the *secondMACAddress* logically anded with

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the *secondMACAddressMask* and compared with the destination MAC address.
When this attribute has a value of ***from***, the *firstMACAddress* is logically anded with the *firstMACAddressMask* and the result compared with the destinationMAC address in a frame and the *secondMACAddress* logically anded with the *secondMACAddressMask* and compared with the sourceMAC addressin the frame, as a part of finding a match in the bridge filter apply table entry.

Mib	Bridge
Values	to from toFrom
Default	toFrom

ATTRIBUTE Vr Br Ns Ate **filterName (fn)**

Access	Read and write
Description	This attribute specifies the name of the filter to be applied to the frame, if it satisfies the match criteria mentioned in the bridge filter apply table entry.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Br **TransparentBridge (Tb)**

Groups	GROUP Vr Br Tb Provisioned (Prov) GROUP Vr Br Tb Statistics (Stats)
Scope	Application
Description	*Vr/<string> Bridge TransparentBridge* This component contains all the global bridge attribute groups necessary for the operation of a transparent bridge.
Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Br Tb SpanningTreeProtocol (Stp) COMPONENT Vr Br Tb StaticTableEntry (Ste)
Dyn. Subcomp.	COMPONENT Vr Br Tb ForwardTableEntry (Fte) COMPONENT Vr Br Tb NcForwardTableEntry (NcFte)
Common Verbs	Help List Display Add DELete

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GROUP Vr Br Tb Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes applicable to a transparent bridge, those attributes that are global and are not port specific.
Mib	Bridge

ATTRIBUTE Vr Br Tb fwdTableNumEntries (ftNe)

Access	Read and write
Description	This attribute specifies the number of entries that can exist in the transparent bridge forwarding table. This attribute provides a way to control the resources allocated to forwarding table. This attribute will prove to be very useful while attempting to fine tune the resource allocated to suit the network configuration. Please understand that this attribute *tbFwdTableNumEntries* is influenced by the memory management scheme provided by the *VirtualRouter* and is by no means independent of the same. It is important to understand the network configuration in terms of number and types of bridge ports provisioned before attempting to fine tune this attribute.The following attributes can be used as feedback to fine tune this attribute: a) attribute *totalForwardingTableEntries* under the *TransparentBridge component,* *b) attribute numFtEntriesFree under the TransparentBridge component,* *c) attribute numFtEntriesDenied under the TransparentBridge component*
Mib	Bridge
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Vr Br Tb agingTime (at)

Access	Read and write
Description	This attribute specifies the time period used in seconds, to age out dynamically learned entries in the forwarding table. The aging time can change, triggered by a spanning tree topology change. The operational value of the aging time is reflected in the attribute *agingTimeOper* under the *SpanningTreeProtocol* component.
Mib	Bridge
Values	Decimal (10..1000000)
Units	seconds
Default	300

GROUP Vr Br Tb Statistics (Stats)

Properties	Operational

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Description	This group contains all the statistical attributes for a transparent bridge, those attributes that are global in nature and are not port specific.
Mib	Bridge

ATTRIBUTE Vr Br Tb learnedEntryDiscards (led)

Access	Read only
Description	This attribute represents the number of dynamic entries that might have been learned but have been discarded due to a static entry already installed by provisioning in the forwarding table. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Tb totalForwardingTableEntries (tFtE)

Access	Read only
Description	This attribute indicates the total number of transparent bridge forwarding table entries. This includes static forwarding table entries and dynamic forwarding table entries. This attribute is influenced by the attribute *tbFwdTableNumEntries*, which is a provisionable attribute. If the value is consistently approaching the value of the attribute *tbFwdTableNumEntries*, it is advisable to increase the value provisioned for *tbFwdTableNumEntries*. It indicates a potential shortage of forwarding table entries in the future. This attribute is inversely proportional in value to the attribute *numFtEntriesFree.* This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Tb numFtEntriesFree (nFteF)

Access	Read only
Description	This attribute indicates the number of free transparent bridge forwarding table entries. These entries could be used by static entries or by dynamic entries. This counter wraps around its maximum value of 4294967295. A consistently high value for this attribute indicates that there is a resource surplus here, in terms of the memory requirements of the forwarding table. This surplus could be utilized elsewhere if need be. The value of this attributes directly influenced by the value of the attribute *tbFwdTableNumEntries.*

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Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Tb numFtEntriesDenied (nFteD)

Access	Read only
Description	This attribute indicates the number of instances wherein transparent bridge table entry was unavailable. These entries could have been denied for static entries or for dynamic entries. This counter wraps around its maximum value of 4294967295. If this counter consistently shows a high value, it is indicative of a resource shortage in terms of memory required to support the increase in the number of forwarding table entries. To rectify this resource shortage, increase the number of forwarding table entries through the provisioned attribute *tbFwdTableEntries* under the *Bridge* component. This counter should ideally be as low as possible.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Br Tb SpanningTreeProtocol (Stp)

Instance	Decimal (1..4294967293)
Groups	GROUP Vr Br Tb Stp Provisioned (Prov) GROUP Vr Br Tb Stp Operational (Oper)
Scope	Application
Description	*Vr/<string> Br Tb Stp/<Decimal>* This component represents the Spanning Tree Protocol for the bridge. Bridges use the Spanning Tree Protocol to provide a loop free, fault tolerant network topology. Individual spanning tree instances are indexed using the domain number. Only 16 instances of this component are allowed including the backbone spanning tree instance. The instance identifier of the *SpanningTreeProtocol* component is significant as it indicates the domain that the spanning tree instance governs.
Mib	Bridge
Common Verbs	Help List Display Add DELete

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GROUP Vr Br Tb Stp Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that are applicable to the spanning tree protocol. These are global attributes and not port specific attributes. These attributes have a direct impact on the way this bridge participates in the stp.
Mib	Bridge

ATTRIBUTE Vr Br Tb Stp stpMode

Access	Read and write
Description	This attribute determines if this stp instance is to act as the stp instance for the backbone or an stp instance for a non-backbone media configuration. There can exist only one Backbone stp instance per virtual router. Please note that it is not permissible to assign the instance identifier of this stp instance as domain number of any access bridge port. In case of stp instances that are non-Backbone, the instance identifier is indicating the domain number the stp is operational in.
Mib	Bridge
Values	access backbone
Default	access

ATTRIBUTE Vr Br Tb Stp protocolSpec (pS)

Access	Read and write
Description	This attribute specifies the type of the spanning tree protocols that are in operation in the bridge. This means that this bridge participates in the types of stp indicated by this attribute.
Mib	Bridge
Values	both dec ieee8021d
Default	ieee8021d

ATTRIBUTE Vr Br Tb Stp priority

Access	Read and write
Description	This attribute is used to construct the *bridgeId*. It forms the first two octets of the *bridgeId* and the remaining 6 octets are made up of the *bridgeMACAddress*. The *priority* also determines the root bridge of the spanning tree topology. Manipulating this attribute might lead to a change in the spanning tree topology.
Mib	Bridge

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Values	Decimal (0..65535)
Default	32768

ATTRIBUTE Vr Br Tb Stp bridgeMaxAge (bma)

Access	Read and write
Description	This attribute specifies the maximum age of the stp information learned from the network on any bridge port before it is discarded. This value is used by this bridge and all the other bridges when this bridge is the root bridge of the spanning tree topology. The following relationships are enforced as required by the IEEE 802.1d standards document. 2 *(*bridgeForwardDelay* -1.0seconds) >= *bridgeMaxAge*, *bridgeMaxAge* >= 2 * *bridgeHelloTime* + 1.0 seconds.
Mib	Bridge
Values	Decimal (600..4000)
Units	centiseconds
Default	2000

ATTRIBUTE Vr Br Tb Stp bridgeHelloTime (bht)

Access	Read and write
Description	This attribute specifies the time interval between the transmission of configuration BPDUs on any bridge port when this bridge becomes the root bridge. This attribute value is also used by all the other bridges in the Spanning Tree while this bridge is the root. The following relationship is enforced as required by the IEEE 802.1d standards document. *bridgeMaxAge* >= 2 * *bridgeHelloTime* + 1.0 seconds.
Mib	Bridge
Values	Decimal (100..1000)
Units	centiseconds
Default	200

ATTRIBUTE Vr Br Tb Stp bridgeForwardDelay (bfd)

Access	Read and write
Description	This attribute specifies how fast a bridge port changes its STP state while progressing towards the forwarding state. It is also used as *agingTime* to age dynamic entries in the forwarding table once a topology change is detected. This attribute is used by all the bridges participating in the stp when this bridge is the root bridge. The following relationship is enforced as required by the IEEE 802.1d standards document. 2 *(*bridgeForwardDelay* -1.0sconds) >= *bridgeMaxAge*.
Mib	Bridge

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Values	Decimal (400..3000)
Units	centiseconds
Default	1500

GROUP Vr Br Tb Stp Operational (Oper)

Properties	Operational
Description	This group contains all the operational, stp attributes. These attributes are applicable in a global manner and are not specific to a bridge port.
Mib	Bridge

ATTRIBUTE Vr Br Tb Stp bridgeId (bid)

Access	Read only
Description	This attribute indicates the identifier value of this bridge, which serves to uniquely represent this bridge in the spanning tree topology. Thus, a *bridgeId* is unique only in the spanning tree instance the bridge is participating in. If multiple domain spanning trees exist then the same *bridgeId* can be re-used across these spanning tree instances.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Tb Stp rootPortName (rpn)

Access	Read only
Description	This attribute indicates the name of the bridge port that offers the lowest cost route to the root bridge of the spanning tree topology.The attribute *rootPortName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***TBP-MyPort.*** If multiple instances of spanning tree are operational then there will exist a *rootPortName* value for each instance of the running stp and is applicable to that instance alone.
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Tb Stp timeSinceTopologyChange (tstc)

Access	Read only
Description	This attribute indicates the time since a spanning tree topology change was detected by this bridge.

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Mib	Bridge
Values	Decimal (0..4294967295)
Units	centiseconds
Default	0

ATTRIBUTE Vr Br Tb Stp topologyChangeDetect (tcd)

Access	Read only
Description	This attribute indicates whether or not a topology change was detected. This flag is set when a bpdu with the topology detect flag set is received from the root bridge. If this bridge is the root bridge this flag is set on receipt of a topology change notification bpdu. It is reset after a fixed length of time.
Mib	Bridge
Values	false true
Default	false

ATTRIBUTE Vr Br Tb Stp topologyChanges (tc)

Access	Read only
Description	This attribute indicates the number of the topology change events detected by this bridge since the last bridge reset. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Tb Stp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this bridge treats as the root of the spanning tree topology. The root of the spanning tree topology is chosen through exchange.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Tb Stp rootCost (rc)

Access	Read only
Description	This attribute indicates the cost of the path to the root as seen by this bridge.

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Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Br Tb Stp maxAge (mAg)

Access	Read only
Description	This attribute indicates the maximum age of the stp info learnt from a port before it is discarded.
Mib	Bridge
Values	Decimal (600..4000)
Units	centiseconds
Default	2000

ATTRIBUTE Vr Br Tb Stp agingTimeOper (ato)

Access	Read only
Description	This attribute indicates the time period in seconds used to age out dynamically learned entries in the forwarding table. The aging time is specific to a running stp instance. A value for the aging time of the current instance of the stp can be provisioned through the attribute *agingTime* under the *InwBrTb* component. The *agingTimeOper* attribute assumes the value of the *bridgeForwardDelay* while a topology change is in progress. This is done to facilitate a quick aging out of the learned entries that might have become obsolete due to a spanning tree topology change.
Mib	Bridge
Values	Decimal (10..1000000)
Units	seconds
Default	300

ATTRIBUTE Vr Br Tb Stp helloTime (heT)

Access	Read only
Description	This attribute indicates the time interval between the transmission of the configuration BPDUs. This value is obtained from the root bridge of the spanning tree topology through bridge protocol data units. This value should be the value assigned to the attribute *bridgeHelloTime* of the root bridge.
Mib	Bridge
Values	Decimal (100..1000)
Units	centiseconds
Default	200

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ATTRIBUTE Vr Br Tb Stp holdTime (hoT)

Access	Read only
Description	This attribute indicates the minimum interval of time between the transmission of two BPDUs.
Mib	Bridge
Values	Decimal (100)
Units	centiseconds
Default	100

ATTRIBUTE Vr Br Tb Stp fwdDelay (fd)

Access	Read only
Description	This attribute indicates how much time a port spends in any state while progressing towards the ***forwarding*** state. It is also used to age out learned entries while a topology change is in progress.This value should be the value assigned to the attribute *bridgeFwdDelay* of the root bridge.
Mib	Bridge
Values	Decimal (400..3000)
Units	centiseconds
Default	1500

COMPONENT Vr Br Tb StaticTableEntry (Ste)

Instance	address [String (6, Dashed Hex)] receivePort [String (1..29, ASCII)]
Groups	GROUP Vr Br Tb Ste Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Br Tb StaticTableEntry/address, receivePort* This component represents an entry in the transparent bridge forwarding table. A collection of such entries form the static forwarding table. Entries in the static table indicate the output ports a frame is allowed to go out of if it was received on *receivePort* and if its destination MAC address field matched *address.*
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Br Tb Ste Provisioned (Prov)

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Properties	Provisioned
Description	This group contains all the fields of a static table entry. All these attributes can be provisioned by the user. Multiple such static table entries together form the static forwarding table.
Mib	Bridge

ATTRIBUTE Vr Br Tb Ste status

Access	Read and write
Description	This attribute specifies the longevity of an entry in the static table. Please note that currently only a value of ***permanent*** is supported.
Mib	Bridge
Values	permanent
Default	permanent

ATTRIBUTE Vr Br Tb Ste allowedToGoTo (atgt)

Access	Read and write
Description	This port map specifies the out bridge ports a MAC frame with *address* in its destination MAC address field, originating from *receivePort*, can go out of. The *allowedToGoTo* attribute is a set of strings. Each string is of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding transparent bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. Multiple strings can be specified on the same *set* command. Each string in the list is space separated. An ***"*"*** in place of the ***i*** indicates that regardless of the protocol port instance, all bridge ports with name ***BridgePortName*** should be included in the *allowedToGoTo.*
Mib	Bridge
List of	String (4..29, ASCII)
List Size	255
Default	No default

COMPONENT Vr Br Tb ForwardTableEntry (Fte)

Instance	address [String (6, Dashed Hex)] domainNum [Decimal (1..4294967293)]
Groups	GROUP Vr Br Tb Fte Operational (Oper)
Scope	Application
Description	*Vr/<string> Br Tb FowardTableEntry/address, domainNum* This component represents an entry in the transparent bridge forwarding table. Entries in this table serve to map a destination MAC address to a port in the bridge. Essentially, entries are learned and aged in this table.

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This means that entries that are not frequently used, are purged. The *agingTime* is a provisionable attribute under the *TransparentBridge* component. Other fields in this table are informative in nature. A collection of such entries constitutes a transparent bridge forwarding table.

Mib	Bridge
Common Verbs	Help List Display

GROUP Vr Br Tb Fte **Operational (Oper)**

Properties	Operational
Description	This group contains all the attributes that form the fields of a forwarding table entry. These attributes reflect the state of the transparent bridge forwarding table.
Mib	Bridge

ATTRIBUTE Vr Br Tb Fte **port**

Access	Read only
Description	This attribute is the port name through which the *address* was learned. This implies that the frames that are destined for a station whose MAC address is the same as the *address,* will be forwarded through the bridge port indicated by the attribute *port*. The attribute *port* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort*, the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***TBP-MyPort.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Tb Fte **ageOfEntry (aoe)**

Access	Read only
Description	This attribute indicates the age of the forwarding table entry. This is used to purge entries that have not been used for a certain period of time. This feature is to ensure that only the recently used entries are kept in the forwarding table. The time period for aging entries can be provisioned through the attribute *agingTime* under the component *TransparentBridge*.
Mib	Bridge
Values	Decimal (0..1000000)
Units	seconds

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Default	No default

ATTRIBUTE Vr Br Tb Fte peerAddressInfo (pai)

Access	Read only
Description	This attribute indicates the learned peer address information. This address is used to essentially tunnel frames to a peer bridge unit across a network or a backbone. The tunneled frame is then appropriately processed by the peer bridge unit. Encapsulated bridging using a backbone bridge port is an example where this attribute *peerAddressInfo* is used.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Tb Fte status

Access	Read only
Description	This attribute indicates the status of the forwarding table entry. A value of ***learned*** indicates that the entry was learned and cached from the network. Please note that only a value of ***learned*** is currently supported.
Mib	Bridge
Values	learned
Default	learned

COMPONENT Vr Br Tb NcForwardTableEntry (NcFte)

Instance	address [String (6, Dashed Hex)] domainNum [Decimal (1..4294967293)]
Groups	GROUP Vr Br Tb NcFte Operational (Oper)
Scope	Application
Description	*Vr/<string> Br Tb NcFowardTableEntry/address, domainNum* This component represents an entry in the transparent bridge forwarding table. This component is identical to *ForwardTableEntry* except the MAC address portion of the index of this component is in non-canonical form.
Mib	Bridge
Common Verbs	Help List Display

GROUP Vr Br Tb NcFte Operational (Oper)

Properties	Operational

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Description	This group contains all the attributes that form the fields of a forwarding table entry. These attributes reflect the state of the transparent bridge forwarding table.
Mib	Bridge

ATTRIBUTE Vr Br Tb NcFte **port**

Access	Read only
Description	This attribute is the port name through which the *address* was learned. This implies that the frames that are destined for a station whose MAC address is the same as the *address,* will be forwarded through the bridge port indicated by the attribute *port*. The attribute *port* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort*, the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***TBP-MyPort.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Tb NcFte **ageOfEntry (aoe)**

Access	Read only
Description	This attribute indicates the age of the forwarding table entry. This is used to purge entries that have not been used for a certain period of time. This feature is to ensure that only the recently used entries are kept in the forwarding table. The time period for aging entries can be provisioned through the attribute *agingTime* under the component *TransparentBridge*.
Mib	Bridge
Values	Decimal (0..1000000)
Units	seconds
Default	No default

ATTRIBUTE Vr Br Tb NcFte **peerAddressInfo (pai)**

Access	Read only
Description	This attribute indicates the learned peer address information. This address is used to essentially tunnel frames to a peer bridge unit across a network or a backbone. The tunneled frame is then appropriately processed by the peer bridge unit. Encapsulated bridging using a backbone bridge port is an example where this attribute *peerAddressInfo* is used.
Mib	Bridge
Values	String (8, Dashed Hex)

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Default	No default

ATTRIBUTE Vr Br Tb NcFte status

Access	Read only
Description	This attribute indicates the status of the forwarding table entry. A value of ***learned*** indicates that the entry was learned and cached from the network. Please note that only a value of ***learned*** is currently supported.
Mib	Bridge
Values	learned
Default	learned

COMPONENT Vr Br SourceRouteBridge (Srb)

Groups	GROUP Vr Br Srb Provisioned (Prov) GROUP Vr Br Srb Statistics (Stats)
Scope	Application
Description	*Vr/<string> Br SourceRouteBridge* This component represents the source route bridging scheme described in various IEEE documents. Source routing is a scheme whereby most of the routing decisions are made by the originating host. The bridge merely forwards frames based upon the route descriptor fields found in the individual frames. Source route bridges also process explorer frames traversing the network. The spanning tree protocol is (optionally) used to prevent loops and the duplication of explorer frames.
Mib	Bridge
Opt. Subcomp.	COMPONENT Vr Br Srb SpanningTreeProtocol (Stp)
Dyn. Subcomp.	COMPONENT Vr Br Srb LanIdTableEntry (Lte)
Common Verbs	Help List Display Add DELete

GROUP Vr Br Srb Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes associated with source route bridging. These attributes are global in nature as opposed to port specific.
Mib	Bridge

ATTRIBUTE Vr Br Srb lanIdTableNumEntries (lanIdtNe)

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Access	Read and write
Description	This attribute specifies the maximum number of entries in the LAN ID table. This attribute provides a way to control the resources allocated to the LAN ID table. The *lanIdTableNumEntries* value depends upon the *VirtualRouter* attribute *bridgingMaxHeapSpace* and the number of source route bridge ports provisioned for this *SourceRouteBridge*. Consider the following attributes of the *SourceRouteBridge* component when adjusting this number: - *totalLanIdTableEntries* - *numLanIdTEntriesFree* - *numLanIdTEntriesDenied*
Mib	Bridge
Values	Decimal (500..65535)
Default	500

ATTRIBUTE Vr Br Srb agingTime (at)

Access	Read and write
Description	This attribute specifies the time period used in seconds, to age out dynamically learned entries in the forwarding table. The aging time can change, triggered by a spanning tree topology change. The operational value of the aging time is reflected in the attribute *agingTimeOper* under the *SpanningTreeProtocol* component.
Mib	Bridge
Values	Decimal (10..1000000)
Units	seconds
Default	300

ATTRIBUTE Vr Br Srb bridgeLfMode (blfMode)

Access	Read only
Description	This attribute indicates whether the bridge operates using the older 3-bit length negotiation field or the newer 6-bit length field in the routing information field. Only the 3-bit field is supported at this time.
Mib	Bridge
Values	mode3 mode6
Default	mode3

GROUP Vr Br Srb Statistics (Stats)

Properties	Operational

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Description	This group contains all statistical attributes associated with the *SourceRouteBridge*. These attributes are global in nature as opposed to port specific.
Mib	Bridge

ATTRIBUTE Vr Br Srb totalLanIdTableEntries (tLIdTe)

Access	Read only
Description	This attribute specifies the total number of LAN ID Table entries. The total includes both static and dynamic entries. The value is limited by the attribute *lanIdTableNumEntries*, a provisionable attribute. If the value is consistently approaching the value of *lanIdTableNumEntries* it is advisable to increase the value provisioned for *lanIdTableNumEntries*.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Srb numLanIdtEntriesFree (nLIdTeF)

Access	Read only
Description	This attribute specifies the number of *LanIdTable* entries that are available for use. A consistently high value indicates a resource surplus in terms of memory requirements for the bridge. This surplus could be utilized elsewhere if need be. The value of this attribute is directly influenced by the value of the *lanIdTableNumEntries*.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Srb numLanIdtEntriesDenied (nLIdTeD)

Access	Read only
Description	This attribute indicates the number of instances where an entry was not placed in the *LanIdTable* due to the lack of free entries. A rapid increase indicates a shortage of free entries. To reduce the shortage increase the provisioned *lanIdTableNumEntries* value.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Br Srb SpanningTreeProtocol (Stp)

Instance	Decimal (1..4294967295)

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Groups	GROUP Vr Br Srb Stp Provisioned (Prov) GROUP Vr Br Srb Stp Operational (Oper)
Scope	Application
Description	*Vr/<string> Br Tb Stp/<Decimal>* This component represents the Spanning Tree Protocol for the bridge. Bridges use the Spanning Tree Protocol to provide a loop free, fault tolerant network topology. Individual spanning tree instances are indexed using the domain number. Only 16 instances of this component are allowed including the backbone spanning tree instance. The instance identifier of the *SpanningTreeProtocol* component is significant as it indicates the domain that the spanning tree instance governs.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Br Srb Stp Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that are applicable to the spanning tree protocol. These are global attributes and not port specific attributes. These attributes have a direct impact on the way this bridge participates in the stp.
Mib	Bridge

ATTRIBUTE Vr Br Srb Stp stpMode

Access	Read and write
Description	This attribute determines if this stp instance is to act as the stp instance for the backbone or an stp instance for a non-backbone media configuration. There can exist only one Backbone stp instance per virtual router. Please note that it is not permissible to assign the instance identifier of this stp instance as domain number of any access bridge port. In case of stp instances that are non-Backbone, the instance identifier is indicating the domain number the stp is operational in.
Mib	Bridge
Values	access backbone
Default	access

ATTRIBUTE Vr Br Srb Stp protocolSpec (pS)

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Access	Read and write
Description	This attribute specifies the type of the spanning tree protocols that are in operation in the bridge. This means that this bridge participates in the types of stp indicated by this attribute.
Mib	Bridge
Values	both dec ieee8021d
Default	ieee8021d

ATTRIBUTE Vr Br Srb Stp **priority**

Access	Read and write
Description	This attribute is used to construct the *bridgeId*. It forms the first two octets of the *bridgeId* and the remaining 6 octets are made up of the *bridgeMACAddress*. The *priority* also determines the root bridge of the spanning tree topology. Manipulating this attribute might lead to a change in the spanning tree topology.
Mib	Bridge
Values	Decimal (0..65535)
Default	32768

ATTRIBUTE Vr Br Srb Stp **bridgeMaxAge (bma)**

Access	Read and write
Description	This attribute specifies the maximum age of the stp information learned from the network on any bridge port before it is discarded. This value is used by this bridge and all the other bridges when this bridge is the root bridge of the spanning tree topology. The following relationships are enforced as required by the IEEE 802.1d standards document. 2 *(*bridgeForwardDelay* -1.0seconds) >= *bridgeMaxAge*, *bridgeMaxAge* >= 2 * *bridgeHelloTime* + 1.0 seconds.
Mib	Bridge
Values	Decimal (600..4000)
Units	centiseconds
Default	2000

ATTRIBUTE Vr Br Srb Stp **bridgeHelloTime (bht)**

Access	Read and write
Description	This attribute specifies the time interval between the transmission of configuration BPDUs on any bridge port when this bridge becomes the root bridge. This attribute value is also used by all the other bridges in the Spanning Tree while this bridge is the root.

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	The following relationship is enforced as required by the IEEE 802.1d standards document. *bridgeMaxAge* >= 2 * *bridgeHelloTime* + 1.0 seconds.
Mib	Bridge
Values	Decimal (100..1000)
Units	centiseconds
Default	200

ATTRIBUTE Vr Br Srb Stp bridgeForwardDelay (bfd)

Access	Read and write
Description	This attribute specifies how fast a bridge port changes its STP state while progressing towards the forwarding state. It is also used as *agingTime* to age dynamic entries in the forwarding table once a topology change is detected. This attribute is used by all the bridges participating in the stp when this bridge is the root bridge. The following relationship is enforced as required by the IEEE 802.1d standards document. 2 *(*bridgeForwardDelay* -1.0sconds) >= *bridgeMaxAge*.
Mib	Bridge
Values	Decimal (400..3000)
Units	centiseconds
Default	1500

GROUP Vr Br Srb Stp Operational (Oper)

Properties	Operational
Description	This group contains all the operational, stp attributes. These attributes are applicable in a global manner and are not specific to a bridge port.
Mib	Bridge

ATTRIBUTE Vr Br Srb Stp bridgeId (bid)

Access	Read only
Description	This attribute indicates the identifier value of this bridge, which serves to uniquely represent this bridge in the spanning tree topology. Thus, a *bridgeId* is unique only in the spanning tree instance the bridge is participating in. If multiple domain spanning trees exist then the same *bridgeId* can be re-used across these spanning tree instances.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

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ATTRIBUTE Vr Br Srb Stp rootPortName (rpn)

Access	Read only
Description	This attribute indicates the name of the bridge port that offers the lowest cost route to the root bridge of the spanning tree topology.The attribute *rootPortName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***TBP-MyPort.*** If multiple instances of spanning tree are operational then there will exist a *rootPortName* value for each instance of the running stp and is applicable to that instance alone.
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Srb Stp timeSinceTopologyChange (tstc)

Access	Read only
Description	This attribute indicates the time since a spanning tree topology change was detected by this bridge.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	centiseconds
Default	0

ATTRIBUTE Vr Br Srb Stp topologyChangeDetect (tcd)

Access	Read only
Description	This attribute indicates whether or not a topology change was detected. This flag is set when a bpdu with the topology detect flag set is received from the root bridge. If this bridge is the root bridge this flag is set on receipt of a topology change notification bpdu. It is reset after a fixed length of time.
Mib	Bridge
Values	false true
Default	false

ATTRIBUTE Vr Br Srb Stp topologyChanges (tc)

Access	Read only

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Description	This attribute indicates the number of the topology change events detected by this bridge since the last bridge reset. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Srb Stp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this bridge treats as the root of the spanning tree topology. The root of the spanning tree topology is chosen through exchange.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Srb Stp rootCost (rc)

Access	Read only
Description	This attribute indicates the cost of the path to the root as seen by this bridge.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Br Srb Stp maxAge (mAg)

Access	Read only
Description	This attribute indicates the maximum age of the stp info learnt from a port before it is discarded.
Mib	Bridge
Values	Decimal (600..4000)
Units	centiseconds
Default	2000

ATTRIBUTE Vr Br Srb Stp agingTimeOper (ato)

Access	Read only
Description	This attribute indicates the time period in seconds used to age out dynamically learned entries in the forwarding table. The aging time is specific to a running stp instance. A value for the aging time of the current instance of the stp can be provisioned through the attribute *agingTime*

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under the *InwBrTb* component. The *agingTimeOper* attribute assumes the value of the *bridgeForwardDelay* while a topology change is in progress. This is done to facilitate a quick aging out of the learned entries that might have become obsolete due to a spanning tree topology change.

Mib	Bridge
Values	Decimal (10..1000000)
Units	seconds
Default	300

ATTRIBUTE Vr Br Srb Stp helloTime (heT)

Access	Read only
Description	This attribute indicates the time interval between the transmission of the configuration BPDUs. This value is obtained from the root bridge of the spanning tree topology through bridge protocol data units. This value should be the value assigned to the attribute *bridgeHelloTime* of the root bridge.
Mib	Bridge
Values	Decimal (100..1000)
Units	centiseconds
Default	200

ATTRIBUTE Vr Br Srb Stp holdTime (hoT)

Access	Read only
Description	This attribute indicates the minimum interval of time between the transmission of two BPDUs.
Mib	Bridge
Values	Decimal (100)
Units	centiseconds
Default	100

ATTRIBUTE Vr Br Srb Stp fwdDelay (fd)

Access	Read only
Description	This attribute indicates how much time a port spends in any state while progressing towards the ***forwarding*** state. It is also used to age out learned entries while a topology change is in progress.This value should be the value assigned to the attribute *bridgeFwdDelay* of the root bridge.
Mib	Bridge
Values	Decimal (400..3000)

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Units	centiseconds
Default	1500

COMPONENT Vr Br Srb LanIdTableEntry (Lte)

Instance	lanId [Decimal (0..4095; 65535)] domainNum (dn) [Decimal (1..4294967295)]
Groups	GROUP Vr Br Srb Lte Operational (Oper)
Scope	Application
Description	*Vr/<string> Br Srb LanIdTableEntry/lanId, domainNum* This component represents an entry in the LAN ID Table. The LAN ID Table is used by the *SourceRouteBridge* logic to associate a particular bridge port with a LAN ID found in the route descriptor field of a source route frame. Static entries reference bridge ports local to the bridge.
Mib	Bridge
Common Verbs	Help List Display

GROUP Vr Br Srb Lte Operational (Oper)

Properties	Operational
Description	This group contains all the fields of a LAN ID Table entry.
Mib	Bridge

ATTRIBUTE Vr Br Srb Lte portName (pn)

Access	Read only
Description	This attribute specifies the name of the bridge port the frame should be forwarded through to reach the desired Lan. In the case where the desired Lan is across a TB/SRT cloud, this entry would have the name of the *SrSeBridgePort.* The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *SourceRouteBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***SrBP-MyPort.*** Please note that the attribute *portName* cannot have a value of ***TBP, FddiETb, Tbse, Tbcl, Tbsr, Srsg, Tbsg.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Srb Lte ageOfEntry (aoe)

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Access	Read only
Description	This attribute specifies the age of this entry in seconds.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Br Srb Lte peerMACAddress (pma)

Access	Read only
Description	This attribute specifies the MAC address of a bridge unit found across an transparent bridge/source route transparent network whose LAN ID is referenced by the attribute *lanId.* The *peerMACAddress* for static entries will be all zeroes.
Mib	Bridge
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Srb Lte typeOfEntry (toe)

Access	Read only
Description	This attribute specifies the type of the LAN ID table entry. LAN ID table entries may be either static or dynamic. Dynamic entries imply that to reach the desired LAN source route frames need to be tunneled through a TB/SRT network, to another bridge unit which is attached to the LAN. These entries have a *peerMACAddress* associated with them and may be removed through the aging mechanism of the LAN ID table. Static entries on the other hand contain information about LANs that may be reached directly through bridge ports attached to the bridge. They are not aged and do not have a *peerMACAddress* associated with them.
Mib	Bridge
Values	static dynamic
Default	No default

COMPONENT Vr Ip

Groups	GROUP Vr Ip Provisioned (Prov) GROUP Vr Ip Statistics (Stats) GROUP Vr Ip AdministrativeControl (AdminControl) GROUP Vr Ip OsiState (State) GROUP Vr Ip OperationalStatus (OperStatus) GROUP Vr Ip AcctProvisioned (AcctProv)
Scope	Application

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Description	*Vr/<string> Ip* This component represents the IP protocol running on this virtual router.
Mib	Ip
Subcomponents	COMPONENT Vr Ip Arp COMPONENT Vr Ip Icmp COMPONENT Vr Ip RelayBC COMPONENT Vr Ip Udp COMPONENT Vr Ip Tcp
Opt. Subcomp.	COMPONENT Vr Ip Isis (Isis) COMPONENT Vr Ip PolicerProfile (Policer) COMPONENT Vr Ip DiffServProfile (DiffServProf) COMPONENT Vr Ip ControlPlaneProtection (Cpp) COMPONENT Vr Ip ExteriorGatewayProtocol (Egp) COMPONENT Vr Ip Ospf (Ospf) COMPONENT Vr Ip RoutingInformationProtocol (Rip) COMPONENT Vr Ip Static COMPONENT Vr Ip NetSentry (Ns) COMPONENT Vr Ip BootpRelayAgent (Bootp) COMPONENT Vr Ip Tunnel COMPONENT Vr Ip NextHopResolutionProtocol (Nhrp) COMPONENT Vr Ip CosPolicyGroup (Pg) COMPONENT Vr Ip BorderGatewayProtocol (Bgp) COMPONENT Vr Ip SecurityPolicyDatabase (Spd) COMPONENT Vr Ip Filter (Filt) COMPONENT Vr Ip Multicast (Mcast) COMPONENT Vr Ip MBgpRouteDistributionClient (MBgp) COMPONENT Vr Ip Vrrp COMPONENT Vr Ip Rtd
Dyn. Subcomp.	COMPONENT Vr Ip ForwardTable (Fwd) COMPONENT Vr Ip RouteDataBaseEntry (Rdb) COMPONENT Vr Ip IpInterfaceEntry (If) COMPONENT Vr Ip Cache
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Provisioned (Prov)

Properties	Provisioned
Description	This group contains global attributes for IP.
Mib	Ip

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ATTRIBUTE Vr Ip forwarding

Access	Read and write
Description	This attribute indicates whether this VR is acting as an IP gateway in respect to the forwarding of datagrams received by, but not addressed to, this VR.
Mib	Ip
Values	gateway
Default	gateway

ATTRIBUTE Vr Ip defaultTtl

Access	Read and write
Description	This attribute is the default value inserted into the Time-To-Live field of the IP header of datagrams originated at this entity, whenever a Time-To-Live value is not supplied by the transport layer protocol. The value of this attribute deviates from the MIB requirement that it will always have a value of 255.
Mib	Ip
Values	Decimal (255..255)
Default	255

ATTRIBUTE Vr Ip cosPolicyAssignment (cospolicy)

Access	Read and write
Description	This attribute specifies the *CosPolicyGroup* that each *IpPort* on the *VirtualRouter* uses if the *cosPolicyAssignment* attribute of the *IpPort* is not set. The assigned *CosPolicyGroup* controls the forwarding behavior of IP packets recieved and transmitted at each *IpPort* that use it. See the description of *Vr Ip CosPolicyGroup* for more information. If the *VirtualRouter* has a *DifferentiatedServicesDomain* subcomponent, then this attribute cannot be set. The assigned *CosPolicyGroup* must be a subcomponent of the same *Virtual Router*.
Mib	Ip
Values	Link (Service, linkToPolicyUsers)
Default	No default

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ATTRIBUTE Vr Ip sourceRoute

Access	Read and write
Description	This attribute indicates whether or not this VR allows processing of datagrams which have a source route IP option.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip filterAssignment (filtAss)

Access	Read and write
Description	This attribute specifies the *Filter* that each *IpPort* on the *VirtualRouter* uses if the *filterAssignment* attribute of the *IpPort* is not set. The filtering of IP packets is controlled by the *filterAssignment* attribute of the *Ip* and *IpPort*. If no *Filter* is used, then all packets are permitted. If the *linkToMedia* attribute of the parent *ProtocolPort* of an *IpPort* is linked to *Vr Ip Tunnel Sep* or *Vr Ip Tunnel Msep*, then the *IpPort* operates as if no *Filter* is used. All packets are permitted. The assigned *Filter* must be a subcomponent of the same *Virtual Router*.
Mib	Ip
Values	Link (Service, linkToFilterUsers)
Default	No default

ATTRIBUTE Vr Ip preConfigFwdPath (pcfp)

Access	Read and write
Description	This attribute specifies IP forwarding behavior for the virtual router. When *preConfigFwdPath* is set to ***enabled***, all routes present in the *ForwardTable* are fully installed in hardware on the FPs, eliminating the potential outage due to packet software exceptions for the initial IP flow using an uninstalled route. When this attribute is set to ***disabled***, initial packets using a given route are forwarded via software until the route is installed in hardware. The ***disabled*** setting results in the most efficient use of forwarding hardware resources since these resources are only used for actual IP flows. Thus the attribute respresents a tradeoff between forwarding performance and scalability of hardware resources.
Mib	Ip
Values	enabled disabled

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Default	disabled

ATTRIBUTE Vr Ip IcmCacheMissTrace

Access	Read and write
Description	This attribute indicates whether IcmCacheMissTrace is enabled or disabled
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip cacheTableSize (cts)

Access	Read and write
Description	This attribute specifies the maximum number of entries that can exist in the IP local cache table on each LP. This attribute provides a way to control the resources allocated to the IP cache tables. The default cache table size is *3000* for an FP and *100* for a CP, is used if this attribute is not specified explicitly. The attribute value must be multiple of 100.
Mib	Ip
Vector of	Decimal (100..8000)
Index	Decimal (0..15)
Default	([1] 100, [15] 3000)

GROUP Vr Ip Statistics (Stats)

Properties	Operational
Description	This is the GROUP holding the struct which contains statistical attributes for IP.
Mib	Ip

ATTRIBUTE Vr Ip inReceives

Access	Read only
Description	This is the number of input datagrams received from the interfaces, including those received in error. *inReceives* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ip inHdrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discovered in processing their IP options, etc. *inHdrErrors* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip inAddrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors such as invalid address, unsupported address class. *inAddrErrors* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip forwDatagrams

Access	Read only
Description	The number of input datagrams for which this router was not their final IP destination, as a result of which an attempt was made to find a route to forward them to that final destination. *forwDatagrams* wraps to zero if reaches it's maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip inUnknownProtos

Access	Read only
Description	The number of locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol *inUnknownProtos* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ip inDiscards

Access	Read only
Description	The number of input datagrams for which no problems were encountered to prevent their continued processing, but which were discarded due to the lack of buffers. This does not include any datagram discarded while awaiting for re-assembly. *inDiscards* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip inDelivers

Access	Read only
Description	The number of input datagrams successfully delivered to IP user-protocols (including ICMP). *inDelivers* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip outRequests

Access	Read only
Description	The number of datagrams which local IP user-protocols (including ICMP) supplied to IP in requests for transmission. This sum does not include datagrams counted in *ForwDatagrams*. *outRequests* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip outDiscards

Access	Read only
Description	The number of outbound datagrams that were discarded due to the lack of buffers. This sum also includes datagrams counted in *forwDatagrams* if any such packets met the discard criterion. *outDiscards* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Ip outNoRoutes

Access	Read only
Description	The number of outbound datagrams discarded because no route could be found to transmit them to their destination. This counter includes any datagrams counted in *forwDatagrams*. *outNoRoutes* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip reasmTimeOut

Access	Read only
Description	The maximum number of seconds, which received fragments are held while they are awaiting reassembly at this gateway.
Mib	Ip
Values	Decimal (0..5)
Units	seconds
Default	5

ATTRIBUTE Vr Ip reasmReqds

Access	Read only
Description	The number of the IP fragments received by this gateway which needed to be reassembled. *reasmReqds* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip reasmOks

Access	Read only
Description	The number of IP fragments successfully reassembled by this gateway. *reasmOks* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ip reasmFails

Access	Read only
Description	The number of times this gateway is unabled to assemble IP-fragments for whatever reasons. *reasmFails* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip fragOks

Access	Read only
Description	The number of IP datagrams that have been successfully fragmented by this gateway. *fragOks* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip fragFails

Access	Read only
Description	The number of IP-fragments that have been discarded because they needed to be fragmented but could not be. For example, their Don't Fragment flag was set. *fragFails* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip fragCreates

Access	Read only
Description	This number of IP fragments that have been generated as a result of fragmentation by this gateway. *fragCreates* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip routingDiscards

Access	Read only

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Description	The number of routing entries which were chosen to be discarded even though they are valid. One possible reason for discarding such an entry could be to free -up buffer space for other routing entries. In this implementation, this number is always zero because IP never deletes a valid routing entry.
Mib	Ip
Values	Decimal (0..0)
Default	0

ATTRIBUTE Vr Ip inSrcRouteDiscards

Access	Read only
Description	The number of input datagrams which had a source route IP option and were discarded because this functionality is not allowed for this Routing Component. *srcRouteDiscards* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Ip AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Ip snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Ip OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Vr Ip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Ip AcctProvisioned (AcctProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for IP accounting.
Mib	Ip

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ATTRIBUTE Vr Ip accountCollection (acl)

Access	Read: All Write: All
Description	This attribute specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit*** or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA (time of day accounting) changeover, if TODA is enabled - every 12 hours per *ProtocolPort* if TODA is disabled If none of the above reasons are present IP accounting will be disabled on the VR. Accounting can be disabled on individual *ProtocolPort*s by disabling the attribute *accountingControl* in *Vr ProtocolPort*. The reason for collection is recorded in the accounting records, in the attribute *collectReason*.
Mib	Ip
Set of	bill test study audit force
Default	No default

COMPONENT Vr Ip Isis (Isis)

Groups	GROUP Vr Ip Isis Provisioned (Prov) GROUP Vr Ip Isis OsiState (State) GROUP Vr Ip Isis ErrorStatistics (Errors) GROUP Vr Ip Isis OperationalStatus (OperStatus)
Scope	Application
Description	*Router/<id> Isis* This component is configured to control the Intermediate System to Intermediate System (ISIS) routing protocol. This component requires at least one *Net* subcomponent and no more than 3 *Net* subcomponents to be provisioned. This component requires at least one *Level* subcomponent to be provisioned.

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For ISIS routes to be entered into the routing table, at least one active *IsisIf* component must be provisioned.

Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Isis NetworkEntityTitle (Net) COMPONENT Vr Ip Isis IsisLevel (Level)
Dyn. Subcomp.	COMPONENT Vr Ip Isis NeighborEntry (Nbr)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Isis Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes is used to configure the *Isis* component.
Mib	Ip

ATTRIBUTE Vr Ip Isis snmpAdminStatus (admin)

Access	Read: All Write: All
Description	This attribute specifies the administrative status of the *Isis* component in this *Router*.
Mib	Ip
Values	up down testing
Default	up

ATTRIBUTE Vr Ip Isis intermediateSystemType (isType)

Access	Read: All Write: All
Description	This attribute specifies the ISIS level functionality of this *Router* as defined in ISO specification 10589. In this release only level1 ISIS support exists and therefore the value ***level1*** is the only value supported by this attribute.
Mib	Ip
Values	level1
Default	level1

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ATTRIBUTE Vr Ip Isis overloadBitControl

Access	Read: All Write: All
Description	This attribute specifies how the value of the overload bit in the *Router's* Link State PDU (LSP) should be derived. A value of ***on*** specifies that the overload bit is forced on in the LSP. A value of ***auto*** specifies that the overload bit value is fully controlled by system software. This means that system software, based on current operating conditions, may choose to set the overload bit as appropriate. Any other value specifies, in seconds, the time period after a software restart that the overload bit will be forced on.
Mib	Ip
Values	Decimal (60..1800) on auto
Default	auto

ATTRIBUTE Vr Ip Isis ignoreLspErrors

Access	Read: All Write: All
Description	This attribute specifies how the system behaves on receipt of a corrupted Link State PDU (LSP). If the attribute value is ***ignore***, the system will discard a corrupted LSP. If the attribute value is ***purge***, the system will purge the LSP.
Mib	Ip
Values	purge ignore
Default	purge

ATTRIBUTE Vr Ip Isis lspMaxLifetime

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, that an LSP generated by this *Router* may exist before being considered to be stale and therefore should be purged by other nodes in the network. A *Check Prov* error occurs if this attribute specifies a value less than or equeal to the value specified for the *lspRefreshInterval* attribute. A *Check*

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	Prov warning is produced if the value of this attribute is not at least 300 seconds greater than the value of the *lspRefreshInterval* attribute.
Mib	lp
Values	Decimal (350..65535)
Units	seconds
Default	1200

ATTRIBUTE Vr Ip Isis lspRefreshInterval

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, between successive retransmissions of this *Router's* LSP. A *Check Prov* error occurs if this attribute specifies a value greater than the value specified for the *lspMaxLifetime* attribute. A *Check Prov* warning is produced if the value of this attribute is not at least 300 seconds less than the value of the *lspMaxLifetime* attribute.
Mib	lp
Values	Decimal (1..65535)
Units	seconds
Default	900

ATTRIBUTE Vr Ip Isis spfDelay

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the delay between the detection of a network topology change and the execution of the ISIS Shortest Path First (SPF) route calculation algorithm.
Mib	lp
Values	Decimal (1..10000)
Units	msec
Default	2000

ATTRIBUTE Vr Ip Isis alarmGeneration

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Isis* instance. A value of ***all*** specifies that all ISIS alarms are made visible. A value of ***none*** specifies that no ISIS alarms are made visible.

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Mib	Ip
Values	none all
Default	all

GROUP Vr Ip Isis OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Isis adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Isis operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Isis usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Isis ErrorStatistics (Errors)

Properties	Operational
Description	The attributes in this group are essentially statistics or counters. Each attribute counts each particular, abnormal event that has occurred since the *Isis* component was last enabled or unlocked.
Mib	Ip

ATTRIBUTE Vr Ip Isis rxCorruptedLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of corrupted LSPs received on all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)

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Default	No default

ATTRIBUTE Vr Ip Isis lsdbOverloads

Access	Read: All Write: Illegal
Description	This attribute indicates the number of occurrences of link state database overloads for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis attemptsToExceedMaxSeqNum

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that the maximum LSP sequence number has be reached for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis seqNumSkips

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that LSPs have been received where sequence numbers are nonsequential with respect to the previously received LSP. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis ownLspPurges

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has purged its own LSP. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.

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Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis idFieldLenMismatches

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has received PDUs with ID Field lengths that do not match those used by this *Router*. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis maxAreaAddrMismatches

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has received a PDU with the “maximum number of supported area addresses” field set to a value greater than the maximum number of area addresses supported by this *Router*. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Ip Isis OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Isis snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

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Mib	Ip
Values	up down testing
Default	up

COMPONENT Vr Ip Isis NetworkEntityTitle (Net)

Instance	String (1..46, ASCII)
Scope	Application
Description	*Rtr/id Isis NetworkEntityTitle/<net>* This component represents the *Router's* Network Entity Title (NET). A NET is an ISO address that uniquely identifies an ISIS router. The NET format is specified in ISO 8348. The *Net* instance ID must be formatted as follows: AA.aaaa.SSSS.SSSS.SSSS.NN where; "AA" represents the ISIS area number and is a two hex digit string. "aaaa" represents the ISIS area number and is a string of 0 to 24 hex digits and there must be an even number of digits in this field. "SSSS.SSSS.SSSS" represents this *Router's* ISIS system ID. The system ID is made up of 12 hex digits, grouped in 3 groups of 4 hex digits, separated by the "." character. Note that when more than one *Net* component is provisioned, all *Net* components must have the same system ID portion of the *Net* instance ID. "NN" represents the NSEL portion of the *Net* instance ID. This must always be "00" (zero zero). The sections of the *Net* instance ID are separated by the "." character.
Mib	Ip
Common Verbs	Help List Display Add DELete

COMPONENT Vr Ip Isis IsisLevel (Level)

Instance	Decimal (1..1)
Groups	GROUP Vr Ip Isis Level Provisioned (Prov)
Scope	Application

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Description	*Rtr/<s> Isis IsisLevel/<1..2>* The ISIS routing protocol supports a two-level routing hierarchy. This component represents those ISIS routing aspects that are specific to each level. In this release, only *Level/1* is supported.
Mib	Ip
Dyn. Subcomp.	COMPONENT Vr Ip Isis Level LsDbEntry (Lsdb)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Isis Level Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes is used to configure each ISIS routing level.
Mib	Ip

ATTRIBUTE Vr Ip Isis Level preference

Access	Read: All Write: All
Description	This attribute specifies the routing preference assigned to ISIS routes for this level. A lower value indicates a “more preferred” route.
Mib	Ip
Values	Decimal (1..255)
Default	32

COMPONENT Vr Ip Isis Level LsDbEntry (Lsdb)

Instance	sysId [String (1..14, ASCII)] psnid [Decimal (0..65536)] fragid [Decimal (0..65535)]
Groups	GROUP Vr Ip Isis Level Lsdb Operational
Scope	Application
Description	Rtr/<id> Isis Level/n LsDbEntry/SysId,PSNId,FragId This component describes an entry in the ISIS LSP Database.
Mib	Ip
Common Verbs	Help List Display

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GROUP Vr Ip Isis Level Lsdb **Operational**

Properties	Operational
Description	This group contains the set of operational attributes of the *LsDbEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Isis Level Lsdb **seqNumber**

Access	Read: All Write: Illegal
Description	This attribute indicates the sequence number of the LSP.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb **remainingLifetime**

Access	Read: All Write: Illegal
Description	This attribute indicates, in seconds, the remaining lifetime of the LSP.
Mib	Ip
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb **attachment (att)**

Access	Read: All Write: Illegal
Description	This attribute indicates whether the default attachment bit is set in this LSP.
Mib	Ip
Values	notAttached attached
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb **partitionRepair**

Access	Read: All Write: Illegal
Description	This attribute indicates whether the partition repair bit is set in this LSP.
Mib	Ip

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Values	off on
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb overloadBit

Access	Read: All Write: Illegal
Description	This attribute indicates whether the overload bit is set in this LSP.
Mib	Ip
Values	off on
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb isType

Access	Read: All Write: Illegal
Description	This attribute indicates which system type bits are set in this LSP.
Mib	Ip
Values	none level1 level2 both
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb lspBody

Access	Read: All Write: Illegal
Description	This attribute indicates the content of this LSP's body.
Mib	Ip
Values	String (1..1500, Hex)
Default	No default

COMPONENT Vr Ip Isis NeighborEntry (Nbr)

Instance	sysId [String (1..14, ASCII)] level [Decimal (1..2)]
Groups	GROUP Vr Ip Isis Nbr Operational (Oper)
Scope	Application

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Description	*Rtr/<id> Isis Nbr/SysId,Level* This component represents the list of ISIS adjacencies formed with the specified ISIS router at the specified level.
Mib	Ip
Dyn. Subcomp.	COMPONENT Vr Ip Isis Nbr Adjacency (Adj)
Common Verbs	Help List Display

GROUP Vr Ip Isis Nbr Operational (Oper)

Properties	Operational
Description	This group contains only one operational attribute, which represents the number of adjacencies formed with the router identified by the instance ID of the parent *NeighborEntry* component. This instance ID specifies the System ID of the neighbor router.
Mib	Ip

ATTRIBUTE Vr Ip Isis Nbr adjacencies

Access	Read: All Write: Illegal
Description	This attribute indicates the number of adjacencies between this *Router* and the specified neighbor router at the specified ISIS level. The neighbor's system ID and the level at which the adjacency was formed is specified by the instance ID of the *NeighborEntry* component.
Mib	Ip
Values	Decimal (0..65535)
Default	No default

COMPONENT Vr Ip Isis Nbr Adjacency (Adj)

Instance	Decimal (1..65535)
Groups	GROUP Vr Ip Isis Nbr Adj Operational (Oper)
Scope	Application
Description	*Rtr/<id> Isis Nbr/SysId,Level Adjacency/n* This component represents the collection information available regarding an adjacency formed with another ISIS router.
Mib	Ip
Common Verbs	Help List Display

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GROUP Vr Ip Isis Nbr Adj Operational (Oper)

Properties	Operational
Description	This group contains a set of attributes that indicate the characteristics of the adjacency.
Mib	Ip

ATTRIBUTE Vr Ip Isis Nbr Adj neighborLinkLayerAddress (nbrLLAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the neighbor's link layer address for the link on which the adjacency was formed. In ISO ISIS terminology, this is referred to as the subnetwork point of attachment (SNPA).
Mib	Ip
Values	String (0..11, ASCII)
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj interface

Access	Read: All Write: Illegal
Description	This attribute indicates the *Interface* component on which this adjacency was formed. The format will be: *Rtr/<s> Interface/<IP Address>*
Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj state

Access	Read: All Write: Illegal
Description	This attribute indicates the operating state of the *adjacency*.
Mib	Ip
Values	null initializing up fail
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj holdTime

Access	Read: All Write: Illegal

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Description	This attribute indicates, in seconds, the maximum time that may elapse without receiving a hello message before the adjacency is considered down.
Mib	Ip
Values	Decimal (1..600)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj priority

Access	Read: All Write: Illegal
Description	This attribute indicates the DIS priority of the neighbor associated with this *adjacency*.
Mib	Ip
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj protocols

Access	Read: All Write: Illegal
Description	This attribute indicates the list of protocols supported by the neighbor on this *adjacency*.
Mib	Ip
Values	none osi_only ip_only osi_and_ip
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj areaAddresses

Access	Read: All Write: Illegal
Description	This attribute indicates the list of area addresses used by the neighbor associated with this *adjacency*.
Mib	Ip
Values	String (0..85, ASCII)
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj age

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Access	Read: All Write: Illegal
Description	This attribute indicates the elapsed time, in seconds, since this *adjacency* was established.
Mib	Ip
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

COMPONENT Vr Ip PolicerProfile (Policer)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip Policer Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip PolicerProfile/<string>* *Rtr/<string> Vrf/<string> PolicerProfile/<string>* This component and its subcomponents represent traffic conditioning rules for metering and policing IP packets received or transmitted at an interface. The rules specify various conditioning actions to be applied to individual packets after they are determined to be in-profile or out-of-profile with respect to various traffic rates and burst sizes. A *PolicerProfile* component is used to condition inbound or outbound IP traffiic at a *VirtualRouter IpPort* or *VpnRouteForwarder Interface* by setting the *linkToPolicerProfile* attribute of the *IngressServices* or *EgressServices* subcomponent, respectively. At ingress interfaces the conditioning rules are applied to drop or re-mark the DSCP field of IP packets received at the interface after ingress classification and DSCP marking (if any), prior to VPN encapsulation (if any), and prior to selection of forwarding treatments. At egress interfaces the conditioning rules are applied to drop or re-mark the DSCP field of IP packets transmitted at the interface, after VPN decapsulation (if any), and prior to the selection of forwarding treatments. Egress classification and DSCP marking with a *DiffServProfile* component is not allowed when a *PolicerProfile* component is used to condition outbound traffic. See the description of the *DifferentiatedServicesDomain* component and its subcomponents for a explanation of how an IP packet is treated based on the value of the DSCP field in the IP packet header. Each *PolicerProfile* component must have at least one *Meter* subcomponent.

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The *Vr Ip* component cannot have a *PolicerProfile* subcomponent unless the *Vr* has a *DiffServDomain* subcomponent and the *Vr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipPolicing***.

The *Vrf* component cannot have *PolicerProfile* subcomponents unless the *Rtr* or *Vrf* has a *DiffServDomain* subcomponent and the *Rtr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipPolicing***.

Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Policer Meter
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Policer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PolicerProfile* component.
Mib	Ip

ATTRIBUTE Vr Ip Policer linkToPolicerUsers (users)

Access	Read and write
Description	This attribute specifies the components that are linked to the *PolicerProfile*. Only *IngressServices* or *EgressServices* subcomponents of the same *VirtualRouter* or *VirtualRouteForwarder* can be linked to the *PolicerProfile*.
Mib	Ip
List of	Link (Service, linkToPolicerProfile)
List Size	256
Default	No default

COMPONENT Vr Ip Policer Meter

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip Policer Meter Provisioned (Prov)

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Scope	Application
Description	*Vr/<string> Ip Policer/<string> Meter<string>* *Rtr/<string> Vrf<string> Policer/<string> Meter<string>* This component represents properties of a traffic which will be enforced for the selected traffic stream on an Ip interface. The traffic stream is selected by the packet Per Hop Behavior (PHB) and is specified by the *PolicedPhb* subcomponents of the *Meter*.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Policer Meter PolicedPhb (Phb)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Policer Meter **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioned attributes of the *Meter* component.
Mib	Ip

ATTRIBUTE Vr Ip Policer Meter **committedInformationRate (cir)**

Access	Read and write
Description	This attribute specifies the committed information rate (cir) in bits per second (bits/s). This is the maximum rate at which the network agrees to transfer information under normal conditions. The rate is measured over a time interval that is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*). The *commitedInformationRate(cir)* attribute must be zero if the *commitedBurstSize(bc)* attribute is zero.
Mib	Ip
Values	Decimal (0..600000000)
Units	bit/s
Default	64000

ATTRIBUTE Vr Ip Policer Meter **committedBurstSize (bc)**

Access	Read and write
Description	This attribute specifies the committed burst size in bits. This is the maximum burst size that the network agrees to transfer under normal

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	conditions. The burst size is measured over a time interval that is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*). The *commitedBurstSize(bc)* attribute must be zero if the *commitedInformationRate(cir)* attribute is zero.
Mib	Ip
Values	Decimal (0..600000000)
Units	bits
Default	64000

ATTRIBUTE Vr Ip Policer Meter excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size in bits. This is the amount of uncommitted data that the network will attempt to deliver over a specified time interval. The time interval is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*); however, if the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values are zero, then the time interval is specified by the *measurementInterval* (*t*) attribute. If the *be* attribute is set to ***0***, then packets that exceed the committed information rate are discarded.
Mib	Ip
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE Vr Ip Policer Meter measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval (in milliseconds) over which traffic rates and burst sizes are measured. This attribute value must be non-zero if *cir* and *bc* attribute values are zero. If the *cir* and *bc* attributes are non-zero then the *measurmentInterval* attribute is ignored.
Mib	Ip
Values	Decimal (0..25500)
Units	msec
Default	0

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COMPONENT **Vr Ip Policer Meter** **PolicedPhb (Phb)**

Instance	0
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af41
af42
af43
cs0
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cs3
cs4
cs5
cs6
cs7

Groups	GROUP Vr Ip Policer Meter Phb Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Policer/<string> Meter<string> PolicedPhb/<phb> Rtr/<string> Vrf<string> Policer/<string> Meter<string> PolicedPhb/<phb>* This component is used to identify the traffic that is conditioned by the *Meter*. An IP packet is assigned a PHB according to the value of DSCP field in the IP packet header and the set of existing *DiffServDomain PerHopBehavior* components. If the PHB assigned to the IP packet matches the *PolicedPhb* subcomponent instance, then the packet is conditioned by a policing mechanism that is established at the ingress or

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egress interface according to the *Meter* component provisioning.

The instance of this component must match a *PerHopBehavior* subcomponent of the *DiffServDomain* component used by the *Vr* or *Vrf*.

Each *Meter* component must have at least one *PolicedPhb* subcomponent.

Two *Meter* subcomponents of one *PolicerProfile* component cannot have *PolicedPhb* subcomponents with equal component instance values.

Mib: Ip

Common Verbs: Help, List, Display, Add, DELete

GROUP Vr Ip Policer Meter Phb Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *PolicedPhb* component.

Mib: Ip

ATTRIBUTE Vr Ip Policer Meter Phb initialBucket

Access: Read and write

Description: This attribute specifies whether or not traffic entering the *Meter* with this PHB contributes to the committed information rate.

If this attribute is set to ***committed*** then IP traffic entering the meter with this PHB is directed to the bucket tracking the committed information rate. The traffic is policed in a dual rate mode where both committed and excess information rates are enforced.

If this attribute is set to ***excess*** then IP traffic entering the meter with this PHB is directed to bucket the tracking the excess information rate. The traffic is policed in a single rate mode where only the excess information rate is enforced.

Mib: Ip

Values: committed, excess

Default: excess

ATTRIBUTE Vr Ip Policer Meter Phb outOfProfilePhb

Access: Read and write

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Description	This attribute specifies a new PHB that is assigned to any packet that has exceeded the committed information rate. This attribute will have effect only if the *initialBucket* attribute is set to ***committed***. The DSCP field of an IP packet that exceeds the committed information rate will be modifed to match this attribute value. The value of this attribute must match a *PerHopBehavior* subcomponent of the *DiffServDomain* component used by the *Vr* or *Vrf*. The default value of this attribute is equal to the *PolicedPhb* component instance for all PHBs except ***AF41***, ***AF42***, ***AF31***, ***AF32***, ***AF21***, ***AF22***, ***AF11***, ***AF12*** where the default value is ***AF42***, ***AF43***, ***AF32***, ***AF33***, ***AF22***, ***AF23***, ***AF12***, ***AF13***, respectively. The traffic class associated with the new PHB assigned to the packet must be equal to the traffic class associated with the original PHB assigned to the packet prior to policing. The traffic class associated with a PHB is identified by the *DiffServDomain PerHopBehavior trafficClass* attribute. Normally the drop precedence associated with the new PHB assigned to the packet is greater than the drop precedence associated with the original PHB assigned to the packet prior to policing. The drop precedence associated with a PHB is identified by the *DiffServDomain PerHopBehaviour dropPrecedence* attribute.
Mib	Ip
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5

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cs6
cs7

Default — No default

ATTRIBUTE Vr Ip Policer Meter Phb outOfProfileEgressDropPrecedenceOverride (dpOv)

Access — Read and write

Description — This attribute specifies the drop precedence assigned to an IP packet if the *outOfProfilePhb* attribute value is equal to the *PolicedPhb* component instance value and the packet has exceeded the committed information rate at an egress interface that uses a *PolicerProfile* component.

Possible attribute values are: ***low***, ***medium***, & ***high***.

This attribute is for egress IP policing only.

Mib — Ip

Values — low
medium
high

Default — high

COMPONENT Vr Ip DiffServProfile (DiffServProf)

Instance — String (1..20, ASCII)

Groups — GROUP Vr Ip DiffServProf Provisioned (Prov)

Scope — Application

Description — *Vr/<string> Ip DiffServProfile/<string>*
Rtr/<string> Vrf/<string> DiffServProfile/<string>

This component and its subcomponents represent mapping rules for classifying and marking IP packets received or transmitted at an interface.

At ingress interfaces the mapping rules are applied to mark the DSCP field of IP packets received at the interface, prior to policing (if any), prior to VPN encapsulation (if any), and prior to selection of forwarding treatments.

At egress interfaces the mapping rules are applied to mark the DSCP field of IP packets transmitted at the interface, after VPN decapsulation (if any) and after selection of forwarding treatments. Egress traffic conditioning with a *PolicerProfile* component is not allowed when a *DiffServProfile* component is used to classify and mark outbound traffic.

See the description of the *DifferentiatedServicesDomain* component and its subcomponents for a explanation of how an IP packet is treated based on the value of the DSCP field in the IP packet header.

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A *DiffServProfile* component is used to mark the DSCP field of inbound or outbound IP traffiic at a *VirtualRouter IpPort* or *VpnRouteForwarder Interface* by setting the *linkToDiffServProfile* attribute of the *IngressServices* or *EgressServices* subcomponent, respectively.

Each *DiffServProfile* component used at an ingress interface must have a *DscpMap* subcomponent, or a *LinkMap* subcomponent, or at least one *MfMap* subcomponent. The *LinkMap* subcomponent and *DscpMap* subcomponent are not allowed to co-exist. The *LinkMap* subcomponent and *MfMap* subcomponents are not allowed to co-exist.

Multifield classification at an ingress interface using *MfMap* subcomponents overrides DSCP classification using the *DscpMap* subcomponent. This means that DSCP classification, which is controlled by *the DscpMap* component, is performed only if the packet does not match any *MfMap IpAddrLayer4Flow* component. If *MfMap* subcomponents are used without the *DscpMap* subcomponent and the packet does not match any *MfMap IpAddrLayer4Flow* component, then the packet is marked with DSCP 0.

Each *DiffServProfile* component used at an egress interface must have a *DscpMap* subcomponent. It cannot have a *LinkMap* subcomponent nor a *MfMap* subcomponent.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents if the *Vr vpnMode* attribute is set to ***carrier***.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents if the *Vr* has does not have a *DiffServDomain* subcomponent.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents unless the *Vr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipDiffServ***.

The *Vrf* component cannot have *PolicerProfile* subcomponents if neither the *Rtr* nor *Vrf* has a *DiffServDomain* subcomponent.

The *Vrf* component cannot have *PolicerProfile* subcomponents if the *Rtr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the

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LogicalProcessorType linked to the *LogicalProcessor* includes ***ipDiffServ***.

Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip DiffServProf MfMap (Mf) COMPONENT Vr Ip DiffServProf LinkMap (LinkMap) COMPONENT Vr Ip DiffServProf DscpMap (DscpMap)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip DiffServProf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *DiffServProfile* component.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf linkToDiffServUsers (users)

Access	Read and write
Description	This attribute specifies the components that are linked to the *DiffServProfile* component. Only *IngressServices* or *EgressServices* subcomponents of the same *VirtualRouter* or *VpnRouteForwarder* can be linked to the *DiffServProfile* component.
Mib	Ip
List of	Link (Service, linkToDiffServProfile)
List Size	256
Default	No default

COMPONENT Vr Ip DiffServProf MfMap (Mf)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip DiffServProf Mf Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> MultiFieldMap/<string>* *Rtr/<string> Vrf/<string> DiffServProfile/<string> MultiFieldMap/<string>* This component provides a mapping of multi-field (MF) Layer 3 and Layer 4 criteria to a DSCP value for classifying and marking IP packets received at an interface.

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This classification and marking method is used at an ingress interface when the DSCP value of some or all incomming IP packets cannot be trusted and must be marked with various DSCP values according to Layer 3 and Layer 4 header information.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *MfMap* component must have at least one *IpAddrLayer4Flow* subcomponent.

See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.

Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip DiffServProf Mf IpAddrLayer4Flow
Common Verbs	Help List Display Add DELete

GROUP Vr Ip DiffServProf Mf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *MfMap* component.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf Mf assignedPhb (phb)

Access	Read and write
Description	This attribute indicates the Per Hop Behavior (PHB) assigned to a packet when the *MultiFieldMap* applies. The DSCP field of the IP packet is marked accordingly. Each *MfMap* subcomponent of the *DiffServProfile* must have an *assignedPhb* attribute value that corresponds to a unique DSCP value according to *DifferentiatedServicesDomain PerHopBehavior* component provisioning.
Mib	Ip
Values	Decimal (0..63) df ef af11 af12

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af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default df

COMPONENT Vr Ip DiffServProf Mf IpAddrLayer4Flow

Instance Decimal (0..1023)

Groups GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow Provisioned (Prov)
GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow ProtoProvisioned
GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow Operational (Oper)

Scope Application

Description *Vr/<string> Ip DiffServProfile/<string> MultiFieldMap/<string> IpAddrLayer4Flow/<string>*

Rtr/<string> Vrf/<string> DiffServProfile/<string> MultiFieldMap/<string> IpAddrLayer4Flow/<string>

The *IpAddrLayer4Flow* component is used to specify multi-field (MF) Layer 3 and Layer 4 criteria.

The IP packet is checked to see if it matches the criteria specified by each *IpAddrLayer4Flow* component, if any, under the *DiffServProfile* component. The PHB assigned to the packet is the value of the *assignedPhb* attribute on the parent *MultiFieldMap* component of the *IpAddrLayer4Flow* whose criteria best match the packet. The DSCP field of the IP packet is marked accordingly.

For example, to assign PHB value ***AF41*** to FTP packets destined to subnet 123.123.123.0, an *IpAddrLayer4Flow* subcomponent is added to the *MultiFieldMap* component where the *assignedPhb* attribute is set to ***AF41***. The *prefix, prefixLength, protocol,* and *portNumberRange* attributes of the *IpAddrLayer4Flow* component are set to ***123.123.123.0***, ***24***, ***tcp***, and ***20***, ***21***, respectively. This criteria also applies to each FTP packet

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that originates from subnet 123.123.123.0, but only if the source address and port number of the packet do not match any *IpAddrLayer4Flow* subcomponents of the *DiffServProfile.*

The packet matching algorithm for MF classification is explained in more detail as follows.

A match can be found only if the IP header protocol field is one of ICMP, TCP, or UDP. The *prefix*, *prefixLength*, and *portNumberRange* attributes are checked only if the protocol field in the header is TCP or UDP.

The destination IP address and destination port number information from the packet is first compared against the *prefix* attribute in conjunction with the *prefixLength* and *portNumberRange* attributes. If the *prefixLength* is ***0*** and the *prefix* is ***0.0.0.0***, then any value in the packet's IP destination address fields is a match. If *portNumberRange* is ***0***, then any value in the packet's destination port number fields is a match.

If more than one *IpAddrLayer4Flow* component matches a packet (for instance one component specifies a range of IP addresses and a second specifies a single IP address in the range), then the component with the more precise match is used (the one which specifies the single address in this case). Precedence is always given to the IP address over the port number. For example, if one *IpAddrLayer4Flow* component specifies an range of IP addresses that includes the IP address from the packet and any port number, while a second *IpAddrLayer4Flow* component specifies an exact port number but a wider range of addresses, the first *IpAddrLayer4Flow* component is used.

If no match is found using the packet's destination IP address and destination port number information, then a second search is performed using the packet's source IP address and source port number information. This means that an *IpAddrLayer4Flow* component where the *protocol* is ***udp*** or ***tcp***, the *prefixLength* is ***0*** and the *portNumberRange* is ***0***, always matches some destination address and port number. This prevents the source address and port number check from being performed.

An ICMP packet matches any *IpAddrLayer4Flow* component whose *protocol* attribute is set to ***icmp***.

No attempt is made to match any packets where the options or fragment bits are set.

The *DiffServProfile* is not allowed to have more than 100 *IpAddressLayer4Flow* subcomponents.

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See the description of the *DiffServProfile* component for more information.

Mib: Ip

Common Verbs: Help, List, Display, Add, DELete

GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow Provisioned (Prov)

Properties: Provisioned

Description: This group contains the prefix and the prefix length procisioned attributes of the IpAddrLayer4Flow component.

Mib: Ip

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow prefix

Access: Read and write

Description: This attribute specifies the IP address prefix for selecting IP packets.Matching an IP address to the prefix is does in conjuction with the *prefixLength* attribute.If the values is ***0.0.0.0*** then the *prefixLength* attribute must be ***0***.
See the description of the *IpAddrLayer4Flow* component for more information.

Mib: Ip

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow prefixLength

Access: Read and write

Description: This attribute specifies the number of most significant bits of an IP address to be matched with the prefix for selecting IP packets.
The *prefixLength* value ***0*** indicates any IP address.
See the description of the *IpAddrLayer4Flow* component for more information.

Mib: Ip

Values: Decimal (0..32)

Default: 0

GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow ProtoProvisioned

Properties: Provisioned

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Description	This group contains the protocol and portNumberRange provisioned attributes of the IpAddrLayer4FLow component.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow protocol (proto)

Access	Read and write
Description	This attribute specifies the layer 2 (transport) protocol for selecting IP packets. If the value is icmp, then the prefixLength attribute must be 0, and the portNumberRange attribute must not be set. See the description of the IpAddrLayer4Flow component for more information.
Mib	Ip
Values	icmp tcp udp
Default	tcp

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow portNumberRange

Access	Read and write
Description	This attribute specifies the TCP or UDP port number for selecting IP packets. A single value specifies a single port number.Two values specifies a range of port numbers.The order of the two values is irrelevant. See the description of the IpAddrLayer4Flow component for more information.
Mib	Ip
List of	Decimal (0..65535)
List Size	2
Default	No default

GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *IpAddrLayer4Flow* component.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow phb

Access	Read only
Description	This attribute indicates the per hop behaviour (PHB) assigned to a packet when *MultiFieldMap* applies.The DSCP field of the ip packet is marked

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accordingly.The value of this attribute is equal to the ***assignedPhb*** attribute of the M*ultiFieldMap* component.

Mib — Ip

Values — Decimal (0..63)
df
ef
af11
af12
af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default — No default

COMPONENT Vr Ip DiffServProf LinkMap (LinkMap)

Groups — GROUP Vr Ip DiffServProf LinkMap Provisioned (Prov)

Scope — Application

Description — *Vr/<string> Ip DiffServProfile/<string> LinkMap*
Rtr/<string> Vrf/<string> DiffServProfile/<string> LinkMap

This component provides a mapping of Layer 2 connection class values to PHB values for classifying IP packets received at an interface. The DSCP field of the IP packet is marked accordingly.

This classification and marking method is used at an ingress interface when the DSCP value of some or all incomming IP packets cannot be trusted and the DSCP field of all IP packets arriving at each Layer 2 connection is to be marked with exactly one of four different values.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte*, the connection class is specified by the *ipCoS* attribute of the *StaticDlci* or *DynamicDlciDef* subcomponent. For *IpDlciGroup*, the connection class is specified by the

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ipCos attribute of the *FrConnection* subcomponent. For all other media, the connection class is specified by the *ipCoS* attribute of the *IpPort.*

See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.

Mib: Ip

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Ip DiffServProf LinkMap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes of the *LinkMap* component

Mib: Ip

ATTRIBUTE Vr Ip DiffServProf LinkMap assignedPhb (phb)

Access: Read and write

Description: This attribute specifies a mapping of Layer 2 connection class values to PHB values for classifying IP packets received at an interface. The DSCP field of the IP packet is marked accordingly.

The value on the right hand side of each element contained by this vector attribute should be a DSCP value that matches an existing *PerHopBehavior* subcomponent instance under the *DifferentiatedServicesDomain* component; otherwise, the packet will be treated according the *PerHopBehavior* subcomponent whose instance is associated with DSCP 0.

See the description of the *LinkMap* component for more information.

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Mib	Ip
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..3)
Default	([1] 0, [3] 0)

COMPONENT Vr Ip DiffServProf DscpMap (DscpMap)

Groups	GROUP Vr Ip DiffServProf DscpMap Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> DscpMap* *Rtr/<string> Vrf/<string> DiffServProfile/<string> DscpMap* This component provides a mapping of DSCP values to PHB values for classifying IP packets received and transmitted at an interface. The DSCP field of the IP packet is marked accordingly. This classification an marking method is used at an ingress interface when the DSCP value of all incomming IP packets can be trusted, but require full or partial translation to new values for correct forwarding treatment. This classification an marking method can be used at an egress interface when the DSCP value of all outgoing IP packets require full or partial translation to new values for correct forwarding treatment at the next hop. See the description of the *DifferentiatedServicesDomain* and

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DiffServProfile components for more information.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip DiffServProf DscpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *DscpMap* component
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf DscpMap assignedPhb (phb)

Access	Read and write
Description	This attribute specifies a mapping of DSCP values to PHB values for classifying IP packets received and transmitted at an interface. The DSCP field of the IP packet is marked accordingly. If the *DscpMap* component is used at an ingress interface, the value on the right hand side of each element contained by this vector attribute should be a DSCP value that matches an existing *PerHopBehavior* subcomponent instance under the *DifferentiatedServicesDomain* component; otherwise, the packet will be treated according the *PerHopBehavior* subcomponent whose instance is associated with DSCP 0. See the description of the *DscpMap* component for more information.

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Mib	Ip
Vector of	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Vr Ip ControlPlaneProtection (Cpp)

Groups	GROUP Vr Ip Cpp Provisioned (Prov) GROUP Vr Ip Cpp Operational (Oper) GROUP Vr Ip Cpp OsiState (State)

COLLECTED STATS VirtualRouter Ip ControlPlaneProtection

Scope	Application
Description	*Vr/<string> Ip ControlPlaneProtection* *Rtr/<string> ControlPlaneProtection* *Rtr/<string> Vrf/<string> ControlPlaneProtection* This component represents the IP Control Plane Protection mechanism. The *CPP* helps prevent control traffic from the current Virtural Router, Router, or vrForwarder (VR/VRF) receiving excessive traffic from adversely affecting the control processing of others. If the rate of packets received by the local-destined address is greater than the provisioned value, CPP is notified. This component does not protect locally destined IP traffic including IP

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options, IPv6, TTL of 0 or 1 which includes OSPF, and unsupported protocols (in hardware) such as ISIS.

Mib: Ip

Dyn. Subcomp.: COMPONENT Vr Ip Cpp IsolatedDa

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

VERB Clear Vr Ip Cpp

Impact: Service

Description: clear Vr/<string> Ip Cpp
clear Rtr/<string> Cpp
clear Rtr/<string> Vrf/<string> Cpp
This command is intended for manually clearing all isolated addresses from the current *Cpp* component, and resume traffic to the locally destined addresses on all the FPs.

GROUP Vr Ip Cpp **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Cpp* component.

Mib: Ip

ATTRIBUTE Vr Ip Cpp **packetsPerSecond (pps)**

Access: Read and write

Description: This attribute specifies the maximum number of packets per second a locally destined address on the VR/VRF can receive before being monitored by the *CPP* feature.

Mib: Ip

Values: Decimal (100; 200; 300; 400; 500; 600; 700; 800; 900; 1000; 1100; 1200)

Default: 1200

ATTRIBUTE Vr Ip Cpp **isolationTime (isolation)**

Access: Read and write

Description: This attribute specifies the amount of time a locally destined address will remain in isolation after exceeding the *packetsPerSecond* rate.

If *gracePeriod* is non-zero, isolation will not occur until the conclusion of

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the grace period.

A value of 0 indicates that a locally destined address which is isolated can only be cleared using the *CLEAR* command.

If the traffic to the address is still excessive after the isolationTime expires, this locally destined address will remain in isolation for *IsolationTime* * 2 period. If the traffic to the address is still excessive after 3 times of the above step, the address will be permanently isolated until it is cleared by the *CLEAR* verb.

The minimum value of *IsolationTime* other than zero is 30.

Mib	Ip
Values	Decimal (0; 30..3600)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Cpp gracePeriod (grace)

Access	Read and write
Description	This attribute specifies period of time used to sample the flow rate before the packets are discarded. The intent of the grace period is to measure the average flow rate during this period to ensure that the exceeded traffic flow rate was not due to bursty traffic. If *mode* is ***study***, a list of static record are generated every 15 minutes including a list of locally-destined addresses having excessive flow and its avarage flow rates during the gracePeriod. If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period. A value of 0 of this attribute when *mode* is ***protected*** indicates that no monitoring of the address will be performed after an excessive flow is detected and isolation occurs immediately. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	Ip
Values	Decimal (0..300)
Units	seconds
Default	5

ATTRIBUTE Vr Ip Cpp mode

Access	Read and write

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Description	This attribute specifies whether we are simply monitoring excessive traffic (***study***), or will ***protect*** the VR by discarding traffic during excessive traffic flows, or the feature is ***disabled***. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	Ip
Values	study protect disabled
Default	disabled

GROUP Vr Ip Cpp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Cpp* component.
Mib	Ip

ATTRIBUTE Vr Ip Cpp operationalStatus

Access	Read only
Description	This attribute indicates the current operational state of the *Cpp* component on this VR The following states are the valid states of the *Cpp* component: ***inactive***: there are currently no addresses on the VR/VRF being monitored or isolated. ***disabled***: the *Cpp* feature is currently disabled on the VR/VRF. ***monitoring***: there are currently addresses on the VR/VRF being monitored, but none are currently isolated. If the *mode* is set to ***study***, this state indicates there are currently addresses on the VR/VRF having excessive traffic. ***isolating***: there are currently addresses being isolated for this VR/VRF.
Mib	Ip
Values	inactive disabled monitoring isolating
Default	No default

ATTRIBUTE Vr Ip Cpp isolatedDaCount

Access	Read only
Description	This attritute counts the total number of addresses currently being isolated for this VR.
Mib	Ip
Values	Decimal (0..4096)

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Default	No default

GROUP Vr Ip Cpp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Cpp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Cpp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Ip

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Ip Cpp usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Ip

Values — idle
active (activ)
busy

Default — idle

COLLECTED STATS VirtualRouter Ip ControlPlaneProtection

Description — The statistics record generated by the VirtualRouter Ip ControlPlaneProtection component.

ATTRIBUTE Vr Ip Cpp isolatedDa

Description — This attribute indicates the ip address of the isolated locally destined DA.

Values — IP address

ATTRIBUTE Vr Ip Cpp isolatedLp

Description — This attribute indicates the LP number on which the locally destined address is being isolated.

Values — Decimal (0..15)

ATTRIBUTE Vr Ip Cpp isolatedCounts

Description — This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values — Decimal (0..65535)

ATTRIBUTE Vr Ip Cpp averageFlowRate

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Description	This attribute indicates the average flow rate of the isolated DA during the isolation period.
Values	Decimal (0..65535)

COMPONENT Vr Ip Cpp IsolatedDa

Instance	address [IP address] Ip [Decimal (0..15)]
Groups	GROUP Vr Ip Cpp IsolatedDa Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Cpp IsolatedLocalAddress/<ipAddress>,<Ip>* *Rtr/<string> Cpp IsolatedLocalAddress/<ipAddress>,<Ip>* *Rtr/<string> Vrf/<string> Cpp IsolatedLocalAddress/<ipAddress>,<Ip>* Each entry of this component represents a locally destined address being isolated. There is one instance of this component per isolated address per Ip.
Mib	Ip
Common Verbs	Help List Display

VERB Clear Vr Ip Cpp IsolatedDa

Impact	Service
Description	*Clear Vr/<string> Ip Cpp* IsolatedDa/< ipAddress> *Clear Rtr/<string> Cpp* IsolatedDa/<ipAddress> *Clear Rtr/<string> Vrf/<string> Cpp* IsolatedDa/<ipAddress> This command is intended for manually clearing the isolated address and resume traffic to the local address for all FPs.

GROUP Vr Ip Cpp IsolatedDa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *IsolatedLocalAddress* component.
Mib	Ip

ATTRIBUTE Vr Ip Cpp IsolatedDa averageFlowRate

Access	Read only
Description	This attribute indicates the average flow rate calculated over the grace period.

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Mib	Ip
Values	Decimal (0..65535)
Default	No default

COMPONENT Vr Ip ForwardTable (Fwd)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..31)] gateway (gateway) [IP address]
Groups	GROUP Vr Ip Fwd Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address>* *Rtr/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* *Rtr/<string> Vrf/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* This component contains the information to forward data.This table holds the best route information sent from Routing table.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Fwd Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the Forward Table.
Mib	Ip

ATTRIBUTE Vr Ip Fwd ifIndex

Access	Read only
Description	This attribute specifies the SNMP index associated with the protocol port or interface represented by the attribute *protocolPortName* or *interfaceName,* which identifies the local interface through which the next hop of this route should be reached.
Mib	Ip
Values	Decimal (1..65535)
Default	No default

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ATTRIBUTE Vr Ip Fwd type

Access	Read only
Description	This attribute specifies the type of route. Note that ***localInterface*** refers to a route for which the next hop is the final destination; ***remoteDestination*** refers to a route for which the next hop is not the final destination.
Mib	Ip
Values	notDefined invalid localInterface remoteDestination
Default	No default

ATTRIBUTE Vr Ip Fwd protocol

Access	Read only
Description	This Attribute identifies the routing mechanism by which this route was learned.
Mib	Ip
Values	other local netmgmt icmp egp ggp hello rip isIs esIs ciscoIgrp bbnSpfIgp ospf bgp idpr mpls mbgp bgpMplsInternal ebgpLabel
Default	No default

ATTRIBUTE Vr Ip Fwd age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	Ip

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Fwd protocolPortName (pPName)

Access	Read only
Description	For a *Vr*, this attribute indicates the name of the protocol port by which the next hop of this route should be reached.
Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Fwd nextHopAs

Access	Read only
Description	This attribute specifies the Autonomous System number of the Next Hop. If unknown or not relevant to the protocol indicated by the attribute *protocol*, the value should be zero.
Mib	Ip
Values	Decimal (0..429467295)
Default	No default

ATTRIBUTE Vr Ip Fwd metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the attribute *protocol*. If this metric is not used, its value should be set to -1.
Mib	Ip
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Vr Ip Fwd interfaceName

Access	Read only
Description	For a *Rtr* or *Rtr Vrf*, this attribute indicates the name of the interface by which the next hop of this route should be reached.
Mib	Ip
Values	The name of the component
Default	No default

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COMPONENT Vr Ip RouteDataBaseEntry (Rdb)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] protocol (proto) [bogus local remote special ospf ospfExternal ospfType3Discard ospfType7Discard rip ripDiscard egp bgpExternal bgpInternal bgpAggrDiscard redistrib mpls mbgp bgpMplsInternal isis ebgpLabel] gateway [IP address]
Groups	GROUP Vr Ip Rdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip RouteDataBaseEntry/ <destAddress>,<destMask>,<protocol> Rtr/<string> RouteDatabaseEntry/<destAddress>,<destMask>,<protocol> Rtr/<string> Vrf/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* This component is used to display the information in the Ip routing database. *destAddress* and *destMask* indicates the address and mask of the route in the RoutingDatabase. *protocol* indicates the protocol this entry is learned from. *gateway* indicates the nextHop address for remote routes. The value of *gateway* for the localInterface routes will be the same value as the *destAddress*.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Rdb Operational (Oper)

Properties	Operational

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Description	Identifies a group of operational attributes associated with each entry in the routing database.
Mib	Ip

ATTRIBUTE Vr Ip Rdb metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the index to this entry *protocol*. If this metric is not used, its value should be set to -1.
Mib	Ip
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Vr Ip Rdb preference (pref)

Access	Read only
Description	This attribute specifies the the preference value of this particular entry. The value of this attribute affects the way the routeEntries in this database are selected for installing it in the *ForwardTable*. The lower the preference value of this entry, the higher are the chances that this entry will be selected to install in the *ForwardTable*.
Mib	Ip
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vr Ip Rdb age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip IpInterfaceEntry (If)

Instance	IP address
Groups	GROUP Vr Ip If Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip InterfaceEntry/<IpAddr>*

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This component contains information about all the provisioned *logicalIf* entries under all *ipPort* components.

Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip If Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the Ip interface table.
Mib	Ip

ATTRIBUTE Vr Ip If interfaceMask (mask)

Access	Read only
Description	This attribute indicates the mask for this interface entry.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip If status

Access	Read only
Description	This attribute specifies the status of the provisioned Ip logicalInterface entry. A value of ***disabled*** is used when the parent components *Vr*, *Ip* or *ipPort* is in a disabled state. A value of ***up*** is used when the interface is in an operational state. A state of ***down*** is used if the media associated with this interface is not ready or disabled.
Mib	Ip
Values	up down disabled
Default	No default

ATTRIBUTE Vr Ip If pPName

Access	Read only
Description	Indicates the name of the protocol port this logicalIfEntry belongs to.
Mib	Ip
Values	String (1..23, ASCII)

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Default	No default

ATTRIBUTE Vr Ip If mediaType (type)

Access	Read only
Description	This attribute indicates the media type of interface. When the interface is down, a value of none indicates the media stays down from the beginning. When the interface is down, a value of some valid media type indicates the media is brought down after it was up. Otherwise, when the interface is up or disabled, this attribute should reflect the proper media type of the interface.
Mib	Ip
Values	none tokenRing ethernet fddi x25 frameRelay ppp bnx clusterBridge virtualLink vcpEther vcpToken smds atmMpeVcEncap atmMpeLlcEncap lecEther lecToken tunnel virtual localMedia
Default	No default

ATTRIBUTE Vr Ip If hardwareAddress

Access	Read only
Description	This attribute specifies the hardware address of the media in canonical form if applicable. The non-canonical version of this address is indicated in *ncHardwareAddress*.
Mib	Ip
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ip If mtu

Access	Read only

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Description	This attribute specifies the maximum transmission unit applicable for this *logicalInterface*. A value of ***0*** is used for the interfaces where all the necessary information is not available to compute the mtu applicable for this interface.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	No default

ATTRIBUTE Vr Ip If broadcastAddress

Access	Read only
Description	This attribute indicates the destination IP address to be used by any application which needs to broadcast on this interface. The value is determined by the corresponding *LogicalIf* component's *broadcastAddress* attribute.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip If ncHardwareAddress

Access	Read only
Description	This attribute is the non-canonical version of *hardwareAddress*. This attribute is not displayed for interfaces on non-LAN media.
Mib	Ip
Values	String (0..8, Dashed Hex)
Default	No default

COMPONENT Vr Ip ExteriorGatewayProtocol (Egp)

Groups	GROUP Vr Ip Egp Provisioned (Prov) GROUP Vr Ip Egp Statistics (Stats) GROUP Vr Ip Egp OsiState (State) GROUP Vr Ip Egp AdministrativeControl (AdminControl) GROUP Vr Ip Egp OperationalStatus (OperStatus)
Scope	Application

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Description	*Vr/<string> Ip Egp* This is used to run the Exterior Gateway Protocol for IP.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Egp NeighborEntry (Nbr) COMPONENT Vr Ip Egp Import COMPONENT Vr Ip Egp Export
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Egp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the EGP component
Mib	Ip

ATTRIBUTE Vr Ip Egp asId (as)

Access	Read and write
Description	The autonomous system identifier for this EGP entity. The value of this *asId* can not be equal to the value of *EgpNeighborEntry asId.*
Mib	Ip
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Ip Egp defaultHelloInterval (hello)

Access	Read and write
Description	This attribute is used to configure the default hello interval for each neighbor. This attribute's value is used by the application for each *EgpNeighbor* whose *helloInterval* has not been set.
Mib	Ip
Values	Decimal (30..900)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Egp defaultPollInterval (poll)

Access	Read and write

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Description	This attribute is used to configure the default polling interval for the EGP Neighbor. This attribute's value is used by the application for each *EgpNeighbor* whose *pollInterval* has not been set.
Mib	Ip
Values	Decimal (120..3600)
Units	seconds
Default	120

ATTRIBUTE Vr Ip Egp maxNatNets (maxNets)

Access	Read and write
Description	This attribute is used to configure the maximum number of external natural networks this virtual router will be advertising via EGP.
Mib	Ip
Values	Decimal (1..65535)
Default	500

ATTRIBUTE Vr Ip Egp maxBufferSize (maxBuf)

Access	Read and write
Description	This attribute specifies the maximum buffer size (in 1024 byte memory blocks) to be used for an EGP update to be sent.
Mib	Ip
Values	Decimal (2..16)
Units	Kbyte
Default	4

GROUP Vr Ip Egp Statistics (Stats)

Properties	Operational
Description	These set of attributes identifies the statistics for the EGP component.
Mib	Ip

ATTRIBUTE Vr Ip Egp inMsgs

Access	Read only
Description	Identifies the number of EGP messages received without error. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Vr Ip Egp inErrorMsgs

Access	Read only
Description	Identifies the sum of EGP error messages from all the neighbors. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp outErrorMsgs

Access	Read only
Description	Indicates the sum of EGP error messages sent to all the neighbors. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp inErrors

Access	Read only
Description	Identifies the number of EGP messages that proved to be in error. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp outMsgs

Access	Read only
Description	The total number of locally generated EGP messages. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp outErrors

Access	Read only
Description	The number of EGP messages that were locally generated but were not sent out due to resource limitations within an EGP entity.This counter will wraparound once the value reaches the maximum value.

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Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Ip Egp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Egp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Egp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

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The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Egp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Egp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Egp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing

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Default	up

GROUP Vr Ip Egp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Egp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

COMPONENT Vr Ip Egp NeighborEntry (Nbr)

Instance	IP address
Groups	GROUP Vr Ip Egp Nbr Provisioned (Prov) GROUP Vr Ip Egp Nbr Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Egp NeighborEntry/<Ip Address>* This component identifies the properties of each EGP neighbor. The index value of this entry should belong to one of the subnets provisioned as *logicalIfEntry* under one of the *IpPort.*
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Nbr Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes identify the provisionable attributes for this EGP neighbor.

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Mib	Ip

ATTRIBUTE Vr Ip Egp Nbr asId (as)

Access	Read and write
Description	The autonomous system identifier of this EGP peer. The value of this neighbor's *asId* should not be equal to the *asId* value of *Egp* entity
Mib	Ip
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr mode

Access	Read and write
Description	This attribute will indicate whether this neighbor is being configured as an active or passive neighbor.
Mib	Ip
Values	active passive
Default	active

ATTRIBUTE Vr Ip Egp Nbr generateDefaultRoute (default)

Access	Read and write
Description	This attribute distinguishes whether or not the default route should be generated. This route is put in the EGP update along with the normal EGP update routes when updates are sent to this EGP neighbor
Mib	Ip
Values	yes no
Default	no

ATTRIBUTE Vr Ip Egp Nbr defaultRouteMetric

Access	Read and write
Description	This attribute identifies the Metric to be used for propagating the "Default Route". The value of *defaultRouteMetric* is used only in the case where the value of the attribute *generateDefaultRoute* is set to ***yes***.
Mib	Ip
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip Egp Nbr defaultMetric (metric)

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Access	Read and write
Description	This attribute identifies the default metric value for routes that are exported to this *EgpNeighbor*. This value is used when exporting routes to this neighbor and no *Export* policy applies a different metric.
Mib	Ip
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip Egp Nbr helloInterval (helloInt)

Access	Read and write
Description	This attribute identifies the interval in seconds, between EGP hello command retransmissions. This is the P1 timer in the RFC904. This value may change in operation due to negotiations.
Mib	Ip
Values	Decimal (30..120)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Egp Nbr pollInterval (pollInt)

Access	Read and write
Description	This attribute identifies the interval in seconds, between EGP poll command retransmissions. This is the P2 timer in the RFC904. This value may change in operation due to negotiations.
Mib	Ip
Values	Decimal (120..480)
Units	seconds
Default	120

GROUP Vr Ip Egp Nbr Operational (Oper)

Properties	Operational
Description	This group of attributes identifies the operational set of attributes for the *NeighborEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Egp Nbr state

Access	Read only
Description	This attribute describes the state of the local system with respect to this entry's EGP Neighbor.

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Mib	Ip
Values	idle acquisition down up cease
Default	No default

ATTRIBUTE Vr Ip Egp Nbr inMsgs

Access	Read only
Description	The number of EGP messages received without error from the EGP peer. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr inErrors

Access	Read only
Description	The number of messages received from this EGP peer that proved to be in error. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr outMsgs

Access	Read only
Description	The number of locally generated EGP messages for this EGP peer. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr outErrors

Access	Read only
Description	The number of locally generated EGP messages not sent to this EGP peer due to resource limitations within an EGP entity.This counter will wraparound once the value reaches the maximum value.
Mib	Ip

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr inErrorMsgs

Access	Read only
Description	The number of EGP-defined error messages received from this EGP peer.This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr outErrorMsgs

Access	Read only
Description	The number of EGP-defined error messages sent to this EGP peer.This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr stateUps

Access	Read only
Description	The number of EGP state transitions to the UP state with this EGP peer. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr stateDowns

Access	Read only
Description	The number of EGP state transitions from the UP state to any other state with this EGP peer. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr eventTrigger

Access	Read only

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Description	This attribute is used to control the state of the Neighbor. It is not allowed to change. This attribute from SNMP perspective deviates from MIB that it is made READONLY.
Mib	Ip
Values	start stop
Default	start

COMPONENT Vr Ip Egp Import

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Egp Import Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Egp Import/n* This component controls the functionality of route leaking. In other words, this component will determine what routes are used by EGP.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Egp Import Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Import Provisioned (Prov)

Properties	Provisioned
Description	These set of attributes describe the provisionable attributes for the import component.
Mib	Ip

ATTRIBUTE Vr Ip Egp Import usageFlag (usage)

Access	Read and write
Description	This flag will determine whether or not EGP will use or ignore information in updates received. If the attribute *nbrAsId* is not specified or any of the *NetworkList* components are not added, then this attribute when set to ***ignore*** will ignore all incoming information.
Mib	Ip
Values	use ignore

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Default	use

ATTRIBUTE Vr Ip Egp Import **importMetric (metric)**

Access	Read and write
Description	This attribute specifies the metric value to be included in the routing table for any routes sent because this particular import instance was it's "best match" policy. However this attribute is not a selection key. It should not ***use*** or ***ignore*** a particular metric value. If the value for this attribute is not specified, then the metric value received in an EGP update is used. Note: When setting this value, caution should be taken to set the metric value in all relevant *Import* components to make sure that all matching policies for a given route have the same metric set. This will insure that there are no situations where a specific metric was desired, but doesn't get used in the update because the "best match" policy for that situation did not set the metric parameter. If the attribute *usageFlag* for this import policy is set to ***ignore***, then the *importMetric* value will be ignored by the application. The *importMetric* value is not used to select which routes to use or ignore but is used to set the metric value for the routes being imported. A value of zero specifies that the metric received in the update is to be used.
Mib	Ip
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vr Ip Egp Import **nbrAsId (nbrAs)**

Access	Read and write
Description	The autonomous system Id this import policy will apply to. Note: The Valid value of an *asId* is from 1 to 65,535. This attribute's value when set to 0 will be ignored.
Mib	Ip
Values	Decimal (0..65535)
Default	No default

COMPONENT Vr Ip Egp Import **Network (Net)**

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Egp Import Net Provisioned (Prov)
Scope	Application

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Description	*Vr/<string> Ip Egp Import/<Decimal> NetworkList/<Decimal>* This is an optional subcomponent of Import and identifies a set of networks that this import policy will apply to.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group identifies attributes for the NetworkList component for which the import policy will be applied to
Mib	Ip

ATTRIBUTE Vr Ip Egp Import Net ipAddress (addr)

Access	Read and write
Description	This attribute identifies the IP address that needs to be matched against in this network list for the Import policy to be applied to.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Egp Export

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Egp Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Egp Export/n* Each instance of this component specifies an EGP export policy. An EGP export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as EGP routes onto one or all attached EGP autonomous systems of the virtual router. The Nortel Networks Multiservice Switch IP EGP by default advertises all

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	local routes to all attached EGP autonomous systems using the metric 128.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Egp Export Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.
Mib	Ip

ATTRIBUTE Vr Ip Egp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	Ip
Values	send block
Default	send

ATTRIBUTE Vr Ip Egp Export exportMetric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *exportMetric* is ignored. The *exportMetric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of 0 indicates that the metric associated with the route in the forwarding table is used.
Mib	Ip
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vr Ip Egp Export protocol

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Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If it is set to ***all***, this export policy applies to all routes in the forwarding table.
Mib	Ip
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote
Default	all

ATTRIBUTE Vr Ip Egp Export ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same virtual router; otherwise the value of this attribute must match the interface address of a *LogicalIf* that has a *RipIf* on the same virtual router.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Egp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP neighbor of which the routes are learned from. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP neighbor.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Egp Export inEgpAsId (inAs)

Access	Read and write
Description	This attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value

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	of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Egp Export ospfTag (tag)

Access	Read and write
Description	This attribute specifies the OSPF learned external routes to which this export policy applies, based on the learned OSPF tag of the routes. This attribute can only be set to a non default value when *protocol* is set to ***ospfExternal***. The value of 4294967295 implies any tag.
Mib	Ip
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Vr Ip Egp Export outAutonomousSystem (outAs)

Access	Read and write
Description	This attribute specifies the EGP autonomous system to which routes are exported to as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *outAutonomousSystem* is ignored. The *outAutonomousSystem* value is not used to select which routes to block or send but where to export the routes. A value of 0 indicates that the routes are exported to all EGP autonomous systems of which the virtual router is a neighbor. Otherwise, the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	Ip
Values	Decimal (0..65535)
Default	0

COMPONENT Vr Ip Egp Export Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Egp Export Net Provisioned (Prov)
Scope	Application

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Description	*Vr/<string> Ip Egp Export/<Decimal> NetworkList/<Decimal>* This component identifies a set of attributes when matched determines the export policy applied.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of provisionable attributes for the *ExportNetworkList* component.
Mib	Ip

ATTRIBUTE Vr Ip Egp Export Net ipAddress (addr)

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Ospf (Ospf)

Groups	GROUP Vr Ip Ospf Provisioned (Prov) GROUP Vr Ip Ospf Operational (Oper) GROUP Vr Ip Ospf OsiState (State) GROUP Vr Ip Ospf OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip Ospf* *Rtr/<string> Ospf* *Rtr/<string> Vrf/<string> Ospf*

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This component is configured to control the Open Shortest Path First IP routing protocol.

Mib: Ip

Opt. Subcomp.:
COMPONENT Vr Ip Ospf AreaEntry (Area)
COMPONENT Vr Ip Ospf StubAreaEntry (Stub)
COMPONENT Vr Ip Ospf AreaAggregateEntry (Aggregate)
COMPONENT Vr Ip Ospf HostEntry (Host)
COMPONENT Vr Ip Ospf VirtIfEntry (VirtIf)
COMPONENT Vr Ip Ospf Export

Dyn. Subcomp.:
COMPONENT Vr Ip Ospf VirtNbrEntry (VirtNbr)
COMPONENT Vr Ip Ospf NeighborEntry (Nbr)
COMPONENT Vr Ip Ospf LsdbEntry (Lsdb)
COMPONENT Vr Ip Ospf ExtLsdbEntry (ExtLsdb)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Ip Ospf Provisioned (Prov)

Properties: Provisioned

Description: This group of attributes are used to configure the OSPF component.

Mib: Ip

ATTRIBUTE Vr Ip Ospf routerId (id)

Access: Read and write

Description: This attribute is an Ip Address that uniquely identifies the router in the autonomous system.

Mib: Ip

Values: IP address

Default: No default

ATTRIBUTE Vr Ip Ospf snmpAdminStatus

Access: Read and write

Description: The administrative status of the OSPF Component in this routing component (*Vr*, *Rtr* or *Vrf*).

Mib: Ip

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Values	up down testing
Default	up

ATTRIBUTE Vr Ip Ospf asBdrRtrStatus (asBr)

Access	Read and write
Description	This attribute is a flag to note whether this router is an autonomous system border router. If this router is configured to export any routes learned from other than OSPF-internal protocol, this attribute should be configured as autonomous system border router.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Ip Ospf tosSupport

Access	Read and write
Description	The router's support for type-of-service routing. Only one value will be allowed. This is a deviation from supporting the MIB.
Mib	Ip
Values	false
Default	false

ATTRIBUTE Vr Ip Ospf multicastForward

Access	Read and write
Description	A bit mask indicating the limits on Network Layer Multicast (class D) forwarding. It is represented as a sum of the following: if intra-Area forwarding is permitted, 1; else 0 if inter-Area forwarding is permitted 2; else 0 if inter-AS forwarding is permitted, 4; else 0 Only the value of 0 is being supported and this is a MIB deviation.
Mib	Ip
Values	Decimal (0..0)
Default	0

ATTRIBUTE Vr Ip Ospf migrateRip

Access	Read and write
Description	This Attribute sets the preference level of OSPF-internal routes to be less preferred than RIP.

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This attribute should only be used when starting a migration of a network from RIP to OSPF. When ready to cut over to OSPF, set this attribute to a value of ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with the *migrateRip* attribute set to a value of ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.

Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Ospf generateDefaultRouteMetric (genDefaultMetric)

Access	Read and write
Description	If this router is configured as an autonomous system border router, then this attribute causes the default route to be generated with a metric value equal to *generateDefaultRouteMetric* value. This route is put in the OSPF update along with the normal update routes when updates are sent to the neighbors. No default route will be generated if the value is 0.
Mib	Ip
Values	Signed (-1..65535)
Default	0

ATTRIBUTE Vr Ip Ospf redistributeIbgp (ribgp)

Access	Read and write
Description	This attribute specifies whether the export policies of this *Ospf* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all***. If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false***, routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Ip Ospf estimatedNumberOfInternalOSPFRoutes

Access	Read and write

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Description	This attribute specifies the average estimated number of routes in the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	Ip
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Vr Ip Ospf estimatedNumberOfExternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes external to the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	Ip
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Vr Ip Ospf estimatedNumberOfAreas

Access	Read and write
Description	This attribute specifies the average estimated number of areas in the autonomous system that this OSPF instance will have to keep track of.
Mib	Ip
Values	Decimal (0..65535)
Default	2

ATTRIBUTE Vr Ip Ospf estimatedNumberOfInterfacesPerArea

Access	Read and write
Description	This attribute specifies the average estimated number of interfaces in a given area that this OSPF instance will have to keep track of.
Mib	Ip
Values	Decimal (0..65535)
Default	10

ATTRIBUTE Vr Ip Ospf estimatedNumberOfNeighborsPerInterface

Access	Read and write

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Description	This attribute specifies the average estimated number of neighbors that a given interface will have on it in this OSPF interface.
Mib	Ip
Values	Decimal (0..65535)
Default	3

ATTRIBUTE Vr Ip Ospf defaultOspfIntRtePreference (ospfIntPref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF internal routes. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..254)
Default	30

ATTRIBUTE Vr Ip Ospf defaultOspfExt1RtePreference (ospfExt1Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 1 routes. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..254)
Default	80

ATTRIBUTE Vr Ip Ospf defaultOspfExt2RtePreference (ospfExt2Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 2 routes. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..254)
Default	120

ATTRIBUTE Vr Ip Ospf opaqueCapability (opcap)

Access	Read and write
Description	This attribute specifies whether the OSPF instance is allowed to participate in flooding Opaque LSAs. Such LSAs are also stored in the InwOspfLsdbEntry. Applications, such as MPLS Traffic Engineering, use this mechanism to flood their information throughout a network. Of the

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three Opaque LSA types (9,10,11), only type 10 LSAs (area scope) are supported.The OSPF instance remains fully inter-operable with non-opaque-capable neighbors.
Opaque capability is not fully supported. When the ***mplsTeEmulation*** feature is provisioned, setting this attribute to ***true*** activates hooks to emulate TE capability by flooding hard-coded type 10 TE LSAs to opaque-capable neighbors. This emulated TE functionality is not standards compliant and is strictly provided for MPLS RSVP-TE inter-operability with vendors that are dependent on MPLS TE to establish LSPs.

Mib: lp

Values: true
false

Default: false

ATTRIBUTE Vr Ip Ospf spareInstance (spInst)

Access: Read and write

Description: This attribute specifies whether to maintain a copy of the link state database on the standby card. When this attribute is set to ***disable***, OSPF does not maintain a copy of the link state database.

If the *virtualRouterProcessor* attribute of this *VirtualRouter* is set to ***Lp/0***, then the following conditions must both be true for a copy of the link-state database to be maintained on the standby CP:

- This attribute must be set to ***enable***, and

- The *Shelf cpEquipmentProtection* attribute must be set to ***hot***.

Mib: lp

Values: enable
disable

Default: disable

ATTRIBUTE Vr Ip Ospf spfHoldTime (spfTime)

Access: Read and write

Description: This attribute specifies the minimum time interval between SPF calculations. If a link state change in the autonomous system is detected and the time since the last SPF calculation is greater than *spfHoldTime*, then the SPF calculation starts immediately. Otherwise, the SPF calculation waits until a time of at least *spfHoldTime* has elapsed since the previous SPF calculation.

Setting this attribute to a lower value decreases convergence time in the OSPF autonomous system, but uses more CPU resource more frequently. Setting this attribute to a higher value increases convergence time but

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provides for a more scalable node configuration, especially if there are many *Ospf* components configured on the node.

Mib	Ip
Values	Decimal (1..60)
Units	seconds
Default	1

ATTRIBUTE Vr Ip Ospf alarmGeneration (alarms)

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Ospf* instance. A value of ***all*** specifies that all OSPF alarms are made visible. A value of ***normal*** specifies that all existing OSPF alarms are made visible, except *Ospf NeighborEntry* state change alarms. A value of ***none*** specifies that no OSPF alarms are made visible. It is recommended that *VirtualRouter* components with the *vpnMode* attribute set to ***carrier*** should have the *alarmGeneration* attribute set to ***all***. *VirtualRouter* components with the *vpnMode* attribute set to ***customer*** should have the *alarmGeneration* attribute set to either ***normal*** or ***none***, for scalability reasons. Similarly, the *alarmGeneration* attribute should be set to ***all*** for *Router*. The *alarmGeneration* attribute should be set to either ***normal*** or ***none*** for *Vrf* for scalability reasons.
Mib	Ip
Values	none normal all
Default	all

ATTRIBUTE Vr Ip Ospf ecmpStatus

Access	Read and write
Description	This attribute specifies whether the Equal Cost Multi-Path (ECMP) functionality is enabled or not in the network meaning that the number of next hops for one route learned through OSPF depend on the value of *ecmpStatus*. If *ecmpStatus* is ***enabled*****,** a maximum of three next hops are kept for one route. If it is ***disabled***, one next hop is kept for that route.
Mib	Ip
Values	enabled disabled
Default	enabled

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ATTRIBUTE Vr Ip Ospf attachAsTag (asTag)

Access	Read and write
Description	This attribute specifies the treatment of the OSPF tag when routes are redistributed between BGP and OSPF. If this attribute is set to ***enabled***, an AS number is encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is checked against the AS number to avoid routing loops. If this attribute is set to ***disabled***, an AS number is not encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is not checked against the AS number.
Mib	Ip
Values	disabled enabled
Default	enabled

GROUP Vr Ip Ospf Operational (Oper)

Properties	Operational
Description	These group of attributes identifies the operational attributes for this OSPF Component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf versionNumber (ver)

Access	Read only
Description	The Current Version number of the OSPF Protocol. (2).
Mib	Ip
Values	Decimal (2..2)
Default	2

ATTRIBUTE Vr Ip Ospf areaBdrRtrStatus

Access	Read only
Description	This attribute is used to specify whether this router is configured as an area border router.
Mib	Ip
Values	true false
Default	No default

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ATTRIBUTE Vr Ip Ospf externLsaCount

Access	Read only
Description	The number of external (LS type 5) link-state advertisements in the link-state database.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Ospf externLsaChecksumSum

Access	Read only
Description	The 32-bit unsigned sum of the LS checksums of the external link-state database. This sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf originateNewLsas

Access	Read only
Description	The number of new link-state advertisements that have been originated. This number is incremented each time the router originates a new LSA.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf rxNewLsas

Access	Read only
Description	The number of link-state advertisements received determined to be new instantiations. This number does not include newer instantiations of self-originated link-state advertisements.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Ip Ospf OsiState (State)

Properties	Operational

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Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Ospf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Ospf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)

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Default	disabled

ATTRIBUTE Vr Ip Ospf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Ospf OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

COMPONENT Vr Ip Ospf AreaEntry (Area)

Instance	IP address
Groups	GROUP Vr Ip Ospf Area Provisioned (Prov) GROUP Vr Ip Ospf Area Operational (Oper)

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Scope	Application
Description	*Vr/<string> Ip Ospf AreaEntry/<Ip Address>* *Rtr/<string> Ospf AreaEntry/<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaEntry/<Ip Address>* This component contains the information about various areas that the router is connected to.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Area Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisionable attributes for the AreaEntry Component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Area authType

Access	Read and write
Description	The authentication type specified for this area.
Mib	Ip
Values	none simplePassword md5
Default	none

ATTRIBUTE Vr Ip Ospf Area importAsExtern

Access	Read and write
Description	The area's support for importing AS external link-state advertisements. For backbone area (that is, areaId 0.0.0.0), this attribute must be set to ***importExternal***.
Mib	Ip
Values	importExternal (external) importNoExternal (noExternal) importNssa (nssa)
Default	importExternal

ATTRIBUTE Vr Ip Ospf Area areaSummary

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Access	Read and write
Description	This variable controls the import of summary LSAs into stub areas. If it is ***noAreaSummary***, the router will neither originate nor propagate summary LSAs into the stub areas. It will rely entirely on its default route. If it is ***sendAreaSummary***, the router will both summarize and propagate summary LSAs.
Mib	Ip
Values	noAreaSummary sendAreaSummary
Default	noAreaSummary

GROUP Vr Ip Ospf Area Operational (Oper)

Properties	Operational
Description	This group of attributes describes the Operational set of attributes for the AreaEntry component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Area spfRuns

Access	Read only
Description	The number of times that the intra-area route table has been calculated using this area's link-state database since the protocol became operational.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Area areaBdrRtrCount

Access	Read only
Description	The total number of area border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Area asBdrRtrCount

Access	Read only
Description	The total number of Autonomous System border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.

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Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Area IsaCount

Access	Read only
Description	The total number of link-state advertisements in this area's link-state database, excluding AS External LSAs.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Area areaLsaCksumSum

Access	Read only
Description	The 32-bit unsigned sum of the link-state advertisement's LS checksums contained in this area's link-state database. This sum excludes external (LS type 5) link-state advertisements. The sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip Ospf StubAreaEntry (Stub)

Instance	areaId [IP address] tos [Decimal (0..0)]
Groups	GROUP Vr Ip Ospf Stub Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* This component describes metrics that a default area border router will advertise into a stub area.
Mib	Ip
Common Verbs	Help List Display Add DELete

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GROUP Vr Ip Ospf Stub **Provisioned (Prov)**

Properties	Provisioned
Description	These set of attributes explain the provisionable group for the *StubAreaEntry*.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Stub **metric (metric)**

Access	Read and write
Description	The metric value applied at the indicated type of service.
Mib	Ip
Values	Decimal (1..4294967295)
Default	1

ATTRIBUTE Vr Ip Ospf Stub **metricType**

Access	Read and write
Description	This type of the metric advertised as a default route.
Mib	Ip
Values	ospfMetric comparableCost nonComparable
Default	ospfMetric

ATTRIBUTE Vr Ip Ospf Stub **advertiseDefault**

Access	Read and write
Description	This attribute determines whether or not the default routing information will be advertised, depending on other criterion. Setting this value to ***no*** can prevent advertising default routing information. If the value of the attribute is set to ***yes***, then the value of the attribute *importAsExtern* for that particular *AreaEntry* should be set to ***importNssa***.
Mib	Ip
Values	yes no
Default	yes

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COMPONENT Vr Ip Ospf AreaAggregateEntry (Aggregate)

Instance	areaId [IP address] lsdbType [summaryLink nssaExternalLink] aggregateNet [IP address] aggregateMask [IP address]
Groups	GROUP Vr Ip Ospf Aggregate Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf AreaAggregateEntry/<Ip Address>,<enum>, <Ip Address>,<Ip Address>* *Rtr/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>, <Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,<Ip Address>,<Ip Address>* This table entry replaces the Area Summary table from RFC1253 and is used as an extension for CIDR support.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Aggregate Provisioned (Prov)

Properties	Provisioned
Description	Identifies a group of provisionable attributes.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Aggregate effect

Access	Read and write
Description	This attribute determines whether or not the routing information will be advertised, depending on other criterion. Setting this value to ***doNotAdvertiseMatching*** can prevent advertising routing information for the address and mask values specified as the indices for this entry.
Mib	Ip
Values	advertiseMatching doNotAdvertiseMatching invalid
Default	advertiseMatching

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COMPONENT Vr Ip Ospf HostEntry (Host)

Instance	address [IP address] tos [Decimal (0..0)]
Groups	GROUP Vr Ip Ospf Host Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf HostEntry/<Ip Address>,<Decimal>* This component indicates what hosts are directly attached to the router, and what metrics and types of service should be advertised for them. This component is an optional subcomponent of Ospf.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Host Provisioned (Prov)

Properties	Provisioned
Description	Provisionable set of attributes for the Host entry.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Host areaId

Access	Read and write
Description	This is an Ip address for the Host Entry that indicates the area it belongs to.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ospf Host metric

Access	Read and write
Description	The metric to be advertised.
Mib	Ip
Values	Decimal (1..65535)
Default	1

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COMPONENT Vr Ip Ospf VirtIfEntry (VirtIf)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	GROUP Vr Ip Ospf VirtIf Provisioned (Prov) GROUP Vr Ip Ospf VirtIf Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* This component describes all the virtual links configured for this OSPF Router.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Ospf VirtIf Md5KeyId (KeyId)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf VirtIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes provide provisioning data for the *VirtIfEntry*.
Mib	Ip

ATTRIBUTE Vr Ip Ospf VirtIf transitDelay (transDelay)

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Vr Ip Ospf VirtIf retransInterval (retransInt)

Access	Read and write
Description	The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description

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	and link-state request packets. This value would be well over the expected round-trip time.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Vr Ip Ospf VirtIf helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for the virtual neighbor.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Vr Ip Ospf VirtIf rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router's Hello packets have not been seen before its neighbors declare the router down. This should be some multiple of the Hello interval. This value must be the same for the virtual neighbor.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	60

ATTRIBUTE Vr Ip Ospf VirtIf authKey

Access	Write only
Description	If authentication type is simple password, the password for this virtual circuit. If the value of the attribute is not set, then this attribute is ignored by the application. If the value of this attribute is set, then the value of the attribute *authType* under this particular *Area* should be set to ***simplePassword***, otherwise the application will ignore this authentication key.
Mib	Ip
Values	String (1..8, Hex)
Default	0000000000000000

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ATTRIBUTE Vr Ip Ospf VirtIf authType

Access	Read and write
Description	The authentication type specified for this *VirtIf*.
Mib	Ip
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Vr Ip Ospf VirtIf Operational (Oper)

Properties	Operational
Description	Represents a group of operational attributes for the *VirtIfEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf VirtIf state (state)

Access	Read only
Description	The state of the OSPF virtual interface.
Mib	Ip
Values	down pointToPoint
Default	No default

ATTRIBUTE Vr Ip Ospf VirtIf events (events)

Access	Read only
Description	The number of state changes or error events on the virtual link.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip Ospf VirtIf Md5KeyId (KeyId)

Instance	Decimal (1..255)
Groups	GROUP Vr Ip Ospf VirtIf KeyId Provisioned (Prov) GROUP Vr Ip Ospf VirtIf KeyId Operational (Oper)
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>*

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Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID> Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID> Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
This component contains the information about various MD5 Authentication keys.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf VirtIf KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf VirtIf KeyId md5Key (Key)

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	Ip
Values	String (0..16, ASCII)
Default	""

GROUP Vr Ip Ospf VirtIf KeyId Operational (Oper)

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf VirtIf KeyId inUseForGeneration (inUse)

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	Ip
Values	true false
Default	false

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COMPONENT Vr Ip Ospf Export

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Ospf Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Ospf Export/n* *Rtr/<string> Ospf Export/n* *Rtr/<string> Vrf/<string> Ospf Export/n* Each instance of this component specifies an OSPF export policy. An OSPF export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as OSPF external routes onto attached OSPF areas of the routing component (*Vr*, *Rtr* or *Vrf*). The *Ospf* component by default advertises all OSPF external routes based on the metric and tag in the IP forwarding table.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Ospf Export NetworkList (NetList)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Export Provisioned (Prov)

Properties	Provisioned
Description	This Group contains all the Provisioned attributes for the Export Component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	Ip
Values	send block
Default	send

ATTRIBUTE Vr Ip Ospf Export metric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy.

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If the attribute *advertiseStatus* is set to ***block***, then the value of *metric* is ignored. The *metric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes.
A value of -1 indicates that the metric associated with the route in the forwarding table is used.

Mib	Ip
Values	Signed (-1..16777215)
Default	-1

ATTRIBUTE Vr Ip Ospf Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Ospf* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	Ip
Values	all egp rip staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

ATTRIBUTE Vr Ip Ospf Export ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of an *Interface* or a *LogicalIf* that has a *RipIf* on the same routing component.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Ospf Export ripNeighbor (ripNbr)

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Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP neighbor of which the routes are learned from. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP neighbor.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Ospf Export **egpAsId (egpAs)**

Access	Read and write
Description	This attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Ospf Export **tag**

Access	Read and write
Description	This attribute specifies the OSPF tag to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *tag* is ignored. The *tag* value is not used to select which routes to block or send, but rather the tag value advertised for the routes. A value of 4294967295 indicates that the tag associated with the route in the forwarding table is used.
Mib	Ip
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Vr Ip Ospf Export **extLsaMetricType**

Access	Read and write
Description	This attribute specifies the metric type in the OSPF external link state advertisement of the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *extLsaMetricType* is ignored. The *extLsaMetricType* value is not used to

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select which routes to block or send, but rather the metric value advertised for the routes.
The value ***useProtocolDefault*** indicates the metric type is automatically chosen based on the routing protocol which the route was learned from.

Mib	Ip
Values	useProtocolDefault type1 type2
Default	useProtocolDefault

ATTRIBUTE Vr Ip Ospf Export **bgpAsId (bgpAs)**

Access	Read and write
Description	This attribute specifies the BGP AS from which a BGP route is learned from. This key is used only if the *protocol* is ***bgpExternal***. *bgpAsId* of value ***0*** matches all ASs.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Ospf Export **bgpPeerIp (peerIp)**

Access	Read and write
Description	This attribute specifies the BGP peer where the routes were learned from. *bgpPeerIp* of ***0*** matches all BGP peers. This attribute is used as a key when *protocol* is set to ***bgpInternal*** or ***bgpExternal***.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Ospf Export **description (desc)**

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export OSPF routes to MCI’.
Mib	Ip
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Ospf Export **NetworkList (NetList)**

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Ospf Export NetList Provisioned (Prov)

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Scope	Application
Description	This component identifies a set of attributes when matched determines the export policy applied.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Export NetList **Provisioned (Prov)**

Properties	Provisioned
Description	This group identifies the set of provisionable attributes for the *ExportNetworkList* component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Export NetList **ipAddress**

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ospf Export NetList **ipMask (mask)**

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Ospf **VirtNbrEntry (VirtNbr)**

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	GROUP Vr Ip Ospf VirtNbr Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>*

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Rtr/<string> Vrf/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>
This component describes all of OSPF's Virtual Neighbors.

Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Ospf VirtNbr Operational (Oper)

Properties	Operational
Description	This group identifies a set of operational attributes.
Mib	Ip

ATTRIBUTE Vr Ip Ospf VirtNbr nbrIpAddress (addr)

Access	Read only
Description	Indicates the Ip address this interface this virtual neighbor is using.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 1, if set indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	Ip
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr state

Access	Read only
Description	The state of the virtual neighbor relationship.
Mib	Ip
Values	down attempt init twoWay exchange

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	exchangeStatrt loading full
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr events

Access	Read only
Description	The number of times this virtual link has changed its state, or an error has occurred.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr exchangeStatus

Access	Read only
Description	Indicates the exchange status of the entry in this table.
Mib	Ip
Values	master slave
Default	No default

COMPONENT Vr Ip Ospf NeighborEntry (Nbr)

Instance	address [IP address] addressLessIndex [Decimal (0)]
Groups	GROUP Vr Ip Ospf Nbr Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>*

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This component is a dynamic subcomponent of OSPF that describes all the OSPF Neighbors.

Mib lp

Common Verbs Help
List
Display

GROUP Vr Ip Ospf Nbr Operational (Oper)

Properties Operational

Description This group identifies the operational set of attributes for the *NeighborEntry*.

Mib lp

ATTRIBUTE Vr Ip Ospf Nbr rtrId

Access Read only

Description An Ip Address that uniquely identifies the neighboring router in the autonomous system.

Mib lp

Values IP address

Default No default

ATTRIBUTE Vr Ip Ospf Nbr options

Access Read only

Description A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.

Mib lp

Values Decimal (0..7)

Default No default

ATTRIBUTE Vr Ip Ospf Nbr priority

Access Read only

Description The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network.

Mib lp

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Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	Ip
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr nbmaNbrStatus

Access	Read only
Description	This attribute describes the status of the entry.
Mib	Ip
Values	valid invalid
Default	No default

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ATTRIBUTE Vr Ip Ospf Nbr exchangeStatus

Access	Read only
Description	Indicates the exchange status for a neighbor entry.
Mib	Ip
Values	master slave
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr permanence

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	Ip
Values	dynamic permanent
Default	dynamic

ATTRIBUTE Vr Ip Ospf Nbr opaqueCapability (opcap)

Access	Read only
Description	This attribute displays the Opaque capability of this neighbor.
Mib	Ip
Values	true false
Default	No default

COMPONENT Vr Ip Ospf LsdbEntry (Lsdb)

Instance	areaId [IP address] lsdbType [Decimal (1..10)] lsId [IP address] routerId [IP address]
Groups	GROUP Vr Ip Ospf Lsdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Advertisements (LSA) from all areas the device is connected to. The supported types are: router-LSA (1), network-LSA (2), network-summary-LSA (3), ASBR-summary-

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	LSA (4), AS-external-LSA (5) Group-membership-LSA (6) NSSA-LSA (7) and opaqueArea-LSA (10).
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Ospf Lsdb Operational (Oper)

Properties	Operational
Description	This group describes the Operational set of attributes for the *LsdbEntry*.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Lsdb sequence

Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Lsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	Ip
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Ospf Lsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Lsdb advertisement

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Access	Read only
Description	The entire LSA including its header.
Mib	Ip
Values	String (1..65535, Hex)
Default	No default

COMPONENT Vr Ip Ospf ExtLsdbEntry (ExtLsdb)

Instance	lsdbType [Decimal (1..7)] lsId [IP address] routerId [IP address]
Groups	GROUP Vr Ip Ospf ExtLsdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Divertimentos (LSA) from other Autonomous systems. It is identical in format to the *Lsdb*. The purpose is to allow all external LSAs to be displayed together rather than distributed over the different non-stub areas. These types are: AS-external-LSA (5) and NSSA-LSA (7).
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Ospf ExtLsdb Operational (Oper)

Properties	Operational
Description	This group describes the operational set of attributes for the *ExtLsdbEntry*.
Mib	Ip

ATTRIBUTE Vr Ip Ospf ExtLsdb sequence

Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.

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Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf ExtLsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	Ip
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Ospf ExtLsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf ExtLsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	Ip
Values	String (1..36, Hex)
Default	No default

COMPONENT Vr Ip RoutingInformationProtocol (Rip)

Groups	GROUP Vr Ip Rip Provisioned (Prov) GROUP Vr Ip Rip OsiState (State) GROUP Vr Ip Rip AdministrativeControl (AdminControl) GROUP Vr Ip Rip OperationalStatus (OperStatus) GROUP Vr Ip Rip Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Rip* *Rtr/<string> Rip* *Rtr/<string> Vrf/<string> Rip* This component represents the Routing Information Protocol for the IP.

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There should be at least one *RipInterface* provisioned below an *Interface* or below a *LogicalIf* under an *IpPort*.

Mib: Ip

Opt. Subcomp.: COMPONENT Vr Ip Rip Import (Import)
COMPONENT Vr Ip Rip Export

Common Verbs: Help, List, Display, Add, DELete, LOCK, Unlock

GROUP Vr Ip Rip Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the RIP component

Mib: Ip

ATTRIBUTE Vr Ip Rip migrateRip

Access: Read and write

Description: This attribute sets the preference level of OSPF-internal routes to be less preferred than RIP.
Note:
This parameter should only be used when starting migration of network from RIP to OSPF. When ready to cut over to OSPF, set this attribute value to ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with *migrateRip* ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.

Mib: Ip

Values: enabled
disabled

Default: disabled

ATTRIBUTE Vr Ip Rip rfc1058MetricUsage (rfc1058)

Access: Read and write

Description: This attribute determines the metric usage for this RIP instance.

This flag is used to determine the way metrics are incremented.

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RFC 1058 way:
Sending Update: This is to use the metric for the route from the routing table as the advertised metric to be sent for that route. Nothing is ever added to this value from the sending side. The only special case handling is that if the route being advertised is the network route of a directly connected network, the metric in the routing table will be zero. Then the RipIf interface metric for the interface being advertised is used as the advertise metric. If the interface being advertised is not a Rip interface, then metric value of 1 is used.
Receiving Update: Add receiving interface's RIP metric to the metric for the route in the received advertisement and install the result in the receiver's routing table as the metric for that route.
Older way:
Sending Updates: Add the out going interfaces rip metric to the metric for a route in the routing table to form the metric to be advertised for that route.
Receiving Updates: The metric received in the advertisement for a route is put directly in the routing table as the metric for that route.

Note: It is recommended that, all the routers in this autonomous system should be following the rfc1058 metric system.
Setting this flag to ***disabled*** will have the effect of running the RIP with old metric incrementing system.

Mib	Ip
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Ip Rip generateDiscardRoute (discard)

Access	Read and write
Description	This attribute specifies whether network discard routes should be added to the routing and forwarding table for the subnetted interfaces that are running RIP.
Mib	Ip
Values	yes no
Default	yes

ATTRIBUTE Vr Ip Rip redistributeIbgp (ribgp)

Access	Read and write
Description	This attribute specifies whether the export policies of this *Rip* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all.*** If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false,*** routes learned from IBGP peers are

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	excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Ip Rip defaultRipRtePreference (ripPref)

Access	Read and write
Description	This attribute specifies this RIP component instance's default routing preference assigned to the RIP routes. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..254)
Default	82

GROUP Vr Ip Rip OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Rip adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

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Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Rip operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Rip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Rip AdministrativeControl (AdminControl)

Properties	Provisioned

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Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Rip snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Ip Rip OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Rip snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Ip Rip Operational (Oper)

Properties	Operational
Description	This group defines a set of operational attributes belonging to the *RIP* component. It corresponds to the rip2Globals table in the RIP-2 standard MIB.
Mib	Ip

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ATTRIBUTE Vr Ip Rip routeChangesMade

Access	Read only
Description	This attribute counts the route changes made to the IP Route Database by Rip. This does not include the refresh of the route's age.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Rip queryResponses

Access	Read only
Description	This attribute counts the responses sent to RIP queries from other systems.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip Rip Import (Import)

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Rip Import Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal>* *Rtr/<string> Rip Import/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal>* This component controls the functionality of Route Leaking. In other words, this component will determine what routes are used by RIP.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Rip Import Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Rip Import Provisioned (Prov)

Properties	Provisioned
Description	This is the group of provisionable attributes for the *Import* Subcomponent.
Mib	Ip

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ATTRIBUTE Vr Ip Rip Import usageFlag (usage)

Access	Read and write
Description	This flag when set to ***ignore*** indicates the routes that are not used and if set to ***use***, indicates the routes which are used.
Mib	Ip
Values	use ignore
Default	use

ATTRIBUTE Vr Ip Rip Import importMetric (metric)

Access	Read and write
Description	This attribute is used to override the default import metric for the RIP protocol. This value is not used to select which routes to use or ignore, rather it is the metric to be used in the routing table for the routes imported for this import policy. A value of zero indicates that the metric received in the update will be used.
Mib	Ip
Values	Decimal (0..16)
Default	0

ATTRIBUTE Vr Ip Rip Import neighbor (nbr)

Access	Read and write
Description	This attribute indicates the IP Address of the neighbor this policy will apply to.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Rip Import interface (if)

Access	Read and write
Description	This attribute specifies the RIP interface to which this import policy applies. The value of 0.0.0.0 implies any RIP interface on the routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	Ip
Values	IP address
Default	0.0.0.0

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ATTRIBUTE Vr Ip Rip Import **description (desc)**

Access	Read and write
Description	This attribute describes the policy. For example, 'to import RIP routes from MCI'.
Mib	Ip
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Rip Import **Network (Net)**

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Rip Import Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Rip Import/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal> NetworkList/<Decimal>* This component identifies a set of networks that this Import policy will apply to.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Rip Import Net **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains attributes for the *Import NetworkList* component for the Import Policy to be applied to.
Mib	Ip

ATTRIBUTE Vr Ip Rip Import Net **ipAddress (addr)**

Access	Read and write
Description	This attribute specifies the IP address that needs to be matched against in this network list for the Import Policy to be applied to.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Rip Import Net **ipMask (mask)**

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Access	Read and write
Description	This attribute specifies the IP mask for the attribute *ipAddress*.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Rip Export

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Rip Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal>* *Rtr/<string> Rip Export/<Decimal>* *Rtr/<string> Vrf/<string> Rip Export/<Decimal>* Each instance of this component specifies a RIP export policy. A RIP export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as a RIP route on one or all RIP interfaces of the routing component (*Vr*, *Rtr* or *Vrf*). The *Rip* component by default advertises all local routes and all RIP learned routes to all RIP interfaces based on the metric in the IP forwarding table.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Rip Export Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Rip Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.
Mib	Ip

ATTRIBUTE Vr Ip Rip Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	Ip

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Values	send block
Default	send

ATTRIBUTE Vr Ip Rip Export exportMetric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *exportMetric* is ignored. The *exportMetric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of 0 indicates that the exported routes will be advertised with their original metric. When exporting routes from other protocols into RIP, an *exportMetric* value of 0 will distribute these routes with the metric of the original protocol. If the metric of the original protocol exceeds 15, the exported routes will be considered as unreachable by RIP. If an *exportMetric* value of 16 is specified, the exported routes will be advertised into RIP as unreachable.
Mib	Ip
Values	Decimal (0..16)
Default	0

ATTRIBUTE Vr Ip Rip Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Rip* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	Ip
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

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ATTRIBUTE Vr Ip Rip Export **ripInterface (ripIf)**

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Rip Export **egpAsId (egpAs)**

Access	Read and write
Description	Under the *Rtr* and *Rtr Vrf*, this attribute has no effect. Under the *Vr*, this attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	Ip
Values	Decimal (0..65536)
Default	0

ATTRIBUTE Vr Ip Rip Export **ospfTag (tag)**

Access	Read and write
Description	This attribute specifies the OSPF learned external routes to which this export policy applies, based on the learned OSPF tag of the routes. This attribute can only be set to a non default value when *protocol* is set to ***ospfExternal***. The default value of 4294967295 implies any tag.
Mib	Ip
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Vr Ip Rip Export **outInterface (outIf)**

Access	Read and write

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Description	This attribute specifies the RIP interface on the virtual router which routes are exported onto as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *outInterface* is ignored. The *outInterface* value is not used to select which routes to block or send, but rather where to export the routes. A value of 0.0.0.0 indicates that the routes are exported to all RIP interfaces on the routing component (*Vr*, *Rtr* or *Vrf*). Otherwise, the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Rip Export bgpAsId (bgpAs)

Access	Read and write
Description	This key attribute specifies the BGP AS from which the routes are learned. This key will be used only when the *protocol* is set to ***bgpExternal***. *bgpAsId* of ***0*** matches all BGP ASs.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Rip Export description (desc)

Access	Read and write
Description	The attribute describes the policy. For example, 'to export RIP routes to AS 1'.
Mib	Ip
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Rip Export Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Rip Export Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Rip Export/<Decimal> NetworkList/<Decimal>* *Rtr/<string> Vrf/<string> Rip Export/<Decimal> NetworkList/<Decimal>*

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This component identifies a set of attributes when matched determines the export policy applied.

Mib: Ip

Common Verbs: Help, List, Display, Add, DELete

GROUP Vr Ip Rip Export Net Provisioned (Prov)

Properties: Provisioned

Description: This group identifies the set of Provisionable attributes for the *ExportNetworkList* component.

Mib: Ip

ATTRIBUTE Vr Ip Rip Export Net ipAddress (addr)

Access: Read and write

Description: This attribute identifies the 32 bit IP address to match against.

Mib: Ip

Values: IP address

Default: No default

ATTRIBUTE Vr Ip Rip Export Net ipMask (mask)

Access: Read and write

Description: This attribute is the IP Mask to be used with the IP Address to match against.

Mib: Ip

Values: IP address

Default: No default

COMPONENT Vr Ip Static

Groups: GROUP Vr Ip Static OsiState (State)
GROUP Vr Ip Static Provisioned (Prov)

Scope: Application

Description: *Vr/<string> Ip Static*
Rtr/<string> Static
Rtr/<string> Vrf/<string> Static

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The *Static* component is used to configure addition, deletion and modification of static routing information.

Mib: Ip

Opt. Subcomp.: COMPONENT Vr Ip Static RouteEntry (Route)
COMPONENT Vr Ip Static DiscardRouteEntry (Discard)

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Ip Static OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Ip

ATTRIBUTE Vr Ip Static adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

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Default	unlocked

ATTRIBUTE Vr Ip Static operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Static usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Static Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes are used to configure the Static component.
Mib	Ip

ATTRIBUTE Vr Ip Static defaultStaticRemoteRtePreference (pref)

Access	Read and write

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Description	This attribute specifies this *Static* component instance's default routing preference assigned to the remote routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticRemoteRtePreference* attribute in *RouteEntry* will override this default.
Mib	Ip
Values	Decimal (1..253)
Default	72

ATTRIBUTE Vr Ip Static defaultStaticDiscardRtePreference (discpref)

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the discard routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticDiscardRtePreference* attribute in *DiscardRouteEntry* will override this default.
Mib	Ip
Values	Decimal (0..253)
Default	0

ATTRIBUTE Vr Ip Static maxEcmpNextHops

Access	Read and write
Description	This attribute specifies the maximum number of Equal Cost Multi-Path (ECMP) *NextHop*s that are supported for *Static RouteEntry*s. If *maxEcmpNextHops* is ***1*** then only a single available *NextHop* is used, even if multiple *NextHops* are provisioned with the same *metric* value under a given *Static RouteEntry*. In other words ECMP is disabled for static routes. If *maxEcmpNextHops* is ***3*** the traffic will be loadshared over the available *NextHops* that have the same value set for the *metric* attribute under a given *Static RouteEntry*. When *protected Static RouteEntry*s are provisioned, *maxEcmpNextHops* must be ***1***.
Mib	Ip
Values	1 3
Default	3

ATTRIBUTE Vr Ip Static heartbeatDeadInterval (hbDeadInt)

Access	Read and write
Description	This attribute specifies the L3 *Static* heartbeat dead router interval for the *NextHop* Routers of *Static Route*s which have *heartbeat* ***enabled***. If no

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heartbeat polling responses have been received in the last *heartbeatDeadInterval* seconds, then the *heartbeatState* of this *NextHop* is ***down***.
If *heartbeatDeadInterval* is ***disabled***, L3 heartbeat monitoring will not occur for any *Static Route NextHop*s and the *heartbeatState* of all *NextHop*s will be ***disabled***.

Mib	Ip
Values	Decimal (4..60) disabled
Default	disabled

COMPONENT Vr Ip Static RouteEntry (Route)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..0)]
Groups	GROUP Vr Ip Static Route Provisioned (Prov) GROUP Vr Ip Static Route Operational (Oper) GROUP Vr Ip Static Route OsiState (State)
Scope	Application
Description	*Vr/<string> Ip Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal> *Rtr/<string> Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal> *Rtr/<string> Vrf/<string> Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal> This component describes the IP static routes. For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry*. The value of index *destMask* should be contiguous. Only the value zero is supported. Zero will be substituted for any value that is entered.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Static Route NextHop (Nh)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Static Route Provisioned (Prov)

Properties	Provisioned

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Description	This group contains a provisionable set of attributes for the static route entry component.
Mib	Ip

ATTRIBUTE Vr Ip Static Route staticRemoteRtePreference (pref)

Access	Read and write
Criticality	Component
Description	This attribute specifies the route preference of the static remote route. A lower preference value means the route is more preferred. If ***sameAsStatic*** is specified, the value of *defaultStaticRemoteRtePreference* in the *Static* component is used.
Mib	Ip
Values	Decimal (1..253) sameAsStatic
Default	sameAsStatic

ATTRIBUTE Vr Ip Static Route protected

Access	Read and write
Description	This attribute specifies whether this route is protected or not. Note that *Vr Ip Static maxEcmpNextHops* must be ***1*** and *Vr Ip Ospf ecmpStatus* must be ***disabled*** when there is a *protected* static route under the *Vr*.
Mib	Ip
Values	yes no
Default	no

ATTRIBUTE Vr Ip Static Route protectedFailureBehavior (protFlrB)

Access	Read and write
Description	This attribute specifies the behavior when all *NextHops* of a *protected* static route fail. If ***discard*** is specified, the static route will not be removed, it will continue to be used to discard traffic.
Mib	Ip
Values	discard
Default	discard

ATTRIBUTE Vr Ip Static Route heartbeat

Access	Read and write
Description	This attribute specifies whether or not *heartbeat* is ***enabled*** for this route. In order for this attribute to have any effect, heartbeat must first be

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permitted at the *Static* component level by configuring the *heartbeatDeadInterval* to a value different than ***disabled***.
If ***enabled*** is specified for *heartbeat*, an IP heartbeat is maintained for each of the *NextHops*. ICMP echo requests are sent every 1second and if an ICMP echo resply is received, the *heartbeatState* of the *NextHop* is declared ***up***. If at any point no ICMP response has been received for *heartbeatDeadInterval* seconds, the *heartbeatState* of the *NextHop* will be ***down***.
If ***disabled*** is specified, the *heartbeatState* of each *NextHop* under this *Static Route* will be ***disabled***.

Mib: Ip

Values: enabled
disabled

Default: disabled

GROUP Vr Ip Static Route Operational (Oper)

Properties: Operational

Description: This group contains a set of operational attributes for the static route entry component.

Mib: Ip

ATTRIBUTE Vr Ip Static Route protectionLevel (protL)

Access: Read only

Description: This attribute indicates the current protection level for a *Static RouteEntry*. A value of ***portProtected*** indicates that the only alternative enabled *NextHop*(s) for this protected route are on the same card as the active *NextHop*. When the value is ***cardProtected***, one or more alternative enabled ***NextHop***s exist on a different card than the active ***NextHop***. If the value is ***unprotected***, no alternative enabled *NextHop*s exist or this is an unprotected static route (that is, *protected* = ***no*** for this *Static RouteEntry*).

Mib: Ip

Values: portProtected
cardProtected
unprotected
notApplicable

Default: No default

GROUP Vr Ip Static Route OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — Ip

ATTRIBUTE Vr Ip Static Route adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Ip

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr Ip Static Route operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Ip

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Ip Static Route usageState (osiUsage)

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

COMPONENT Vr Ip Static Route NextHop (Nh)

Instance	IP address
Groups	GROUP Vr Ip Static Route Nh Provisioned (Prov) GROUP Vr Ip Static Route Nh OsiState (State) GROUP Vr Ip Static Route Nh Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* *Rtr/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* *Rtr/<string> Vrf/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* This component provides the destination Ip address of the *NextHop* (some times referred to as the Gateway). For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry*. Each provisioned *NextHop* address should belong to a valid subnet.

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A valid subnet for this IP entity can be provisioned as a *logicalIf* Entry under an *IpPort.*

Mib: Ip

Common Verbs: Help, List, Display, Add, DELete

GROUP Vr Ip Static Route Nh Provisioned (Prov)

Properties: Provisioned

Description: This group contains a provisionable set of attributes for the *Static RouteEntry NextHop* component.

Mib: Ip

ATTRIBUTE Vr Ip Static Route Nh metric (metric)

Access: Read and write

Description: This attribute specifies the primary routing metric for this *NextHop*.

Mib: Ip

Values: Signed (-1..65535)

Default: 1

GROUP Vr Ip Static Route Nh OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Ip

ATTRIBUTE Vr Ip Static Route Nh adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip Static Route Nh **operationalState (osiOper)**

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Static Route Nh **usageState (osiUsage)**

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ip

Values:
idle
active (activ)
busy

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Default	idle

GROUP Vr Ip Static Route Nh **Operational (Oper)**

Properties	Operational
Description	
Mib	Ip

ATTRIBUTE Vr Ip Static Route Nh **heartbeatState (hbS)**

Access	Read only
Description	This attribute indicates the state of the heartbeat mechanism with this *NextHop*'s next hop Router. The value will be ***disabled*** if the *heartbeatDeadInterval* is disabled for all *Static Route*s that share this *NextHop*. The value may be ***undetermined*** briefly upon initialization, before the heartbeat mechanism has completed an assessment. The value will be ***down*** if the *NextHop* Router has not responded to ICMP heartbeat requests nor ARP heartbeat requests. The value will be ***up*** if the *NextHop* Router has responded to ICMP heartbeat requests.
Mib	Ip
Values	undetermined disabled down up
Default	No default

COMPONENT Vr Ip Static **DiscardRouteEntry (Discard)**

Instance	destAddress (addr) [IP address] destMask [IP address]
Scope	Application
Description	*Vr/<string> Ip Static DiscardRouteEntry/<Ip Address>,<Ip Address> Router/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address> Router/<string> Vrf/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>* This table identifies invalid martian networks. Forwarding of packets to the network address indicated by this entry will be discarded.
Mib	Ip
Common Verbs	Help List Display Add DELete

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COMPONENT Vr Ip NetSentry (Ns)

Groups	GROUP Vr Ip Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string Ip NetSentry* *NetSentry* defines a set of filters which are compiled by the *NetSentry* process to be applied to all IP packets. IP packets can be filtered based on IP address and netmask combinations.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Ns ApplyEntry (Apply)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ns Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *NetSentry* component.
Mib	Ip

ATTRIBUTE Vr Ip Ns firstFilter

Access	Read and write
Description	The *firstFilter* is the first filter point which affects all IP packets before they have been examined in any way for their origin and destination. The most common use of a *firstFilter* point is to collect statistis for all packets arriving at the route on any interface, before any subsequent filter processing changes their direction or disposition.
Mib	Ip
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ip Ns localInFilter

Access	Read and write
Description	The *localInFilter* is the second filter point which uses by network administrator to perform a common action on all IP packets that physically arrive over a specific logical interface, regardless of the packet's stated source or destination. Typical uses for a *localInFilter* include verifying that known Ethernet media source addresses match known IP addresses, or confirming that the IP packet source addresses of received IP packet fall within a narrow range.

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Mib	Ip
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ip Ns localOutFilter

Access	Read and write
Description	The *localOutFilter* is the third filter point which applies to any IP packet that will be transmitted from the router to the medium associated with the interface, regardless of its source, destination, or what type of decision was made to cause the datagram to be transmitted on this interface. *localOutFilter* generally used to ensure that certain paterns of traffic do not enter the network or reach a second IP router on that network. For example, *localOutFilter* can be used as the exclusion of all IP packets above a certain security classification, or collecting statistics on the amount of IP fragments performed on an outgoing interface.
Mib	Ip
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ip Ns lastFilter

Access	Read and write
Description	*lastFilter* is the fourth and last filter point to be excecuted after all other routing and filtering decisions have been made on the IP packet, and transmission of the information is imminent. *lastFilter* is generally used to collect statistics on traffic after all previous control and routing decisions have been made.
Mib	Ip
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Ip Ns ApplyEntry (Apply)

Instance	Decimal (1..65535)
Groups	GROUP Vr Ip Ns Apply Provisioned (NetSentryEntry)
Scope	Application
Description	*Vr/<string> Ip NetSentry ApplyEntry/<Decimal>* This component contains a list of *NetSentry* filters that can be applied to IP

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packets and information pertaining to each application of such *NetSentry* filters.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ns Apply Provisioned (NetSentryEntry)

Properties	Provisioned
Description	The instance of provisioned information relating to a filter application to IP packet.
Mib	Ip

ATTRIBUTE Vr Ip Ns Apply filter

Access	Read and write
Description	The name of the *filter* to be applied to packet matching the conditions in this entry.
Mib	Ip
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ip Ns Apply ipAddress1

Access	Read and write
Description	The first IP address used to compare.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ns Apply ipMask1

Access	Read and write
Description	The first netmask associated with *ipAddress1* used to compare.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ns Apply ipAddress2

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Access	Read and write
Description	This second IP address used to compare.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ns Apply ipMask2

Access	Read and write
Description	This second netmask associated with *ipAddress2* used to compare.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ns Apply direction

Access	Read and write
Description	Indicates the direction a packet must be moving between the first and second apply list entries in order for the entries to match. First “to” second, first “from” second, or first “tofrom” second (either direction).
Mib	Ip
Values	to from tofrom
Default	tofrom

COMPONENT Vr Ip Arp

Groups	GROUP Vr Ip Arp Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Arp* *Rtr/<string> Arp* *Rtr/<string> Vrf/<string> Arp* The component specifies the Address Resolution Protocol.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Arp HostEntry (Host)
Dyn. Subcomp.	COMPONENT Vr Ip Arp DynHostEntry (DynHost)
Common Verbs	Help List Display

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VERB Clear Vr Ip Arp

Impact	Passive
Description	*Clear [-logicalIf(Ip Address)] [-includeInverse] Vr/<string> Ip Arp* *Clear [-logicalIf(Ip Address)] [-includeInverse] Rtr/<string> Arp* The *Clear* verb is intended for manually flushing dynamically learned ARP entries. Without any options, *Clear* will flush all non-inverse dynamic ARP entries. The *Clear* verb does not affect static ARP host entries, that is, entries which correspond to *HostEntry* subcomponents of this component. These entries can be removed by deleting the corresponding provisioned *HostEntry* component. The *-logicalIf* or *-interface* option is used to flush dynamic ARP entries which were learned on a particular *IpPort LogicalInterface* or *Interface*. The option must specify the IP address of an existing *IpPort LogicalInterface* (which may be under any *ProtocolPort) or Interface*. The *-includeInverse* option is used to force the deletion of inverse ARP entries. Inverse ARP entries which are learned through inverse ARP (*FrDte*) and inverse ATM ARP (*AtmMpe*) are important and should not be cleared by the users accidentally. If the option is not present, inverse ARP entries are not cleared.

GROUP Vr Ip Arp **Provisioned (Prov)**

Properties	Provisioned
Description	The ARP refresh feature allows the router to periodically verify ARP table entries. Whenever the router updates an ARP entry, or creates a new entry, a timeout value is assigned to the entry. When the timeout for an entry expires, the router will send a unicast ARP request to the currently-known physical address. If an ARP response comes back, the entry will be assigned a new timeout. If, however, the host has gone away or been assigned a new physical address, the host will not respond to the unicast ARP, and the entry will be removed from the ARP table. The new physical address will be discovered through the normal ARP mechanism when the next communication is attempted to the host.
Mib	Ip

ATTRIBUTE Vr Ip Arp **autoRefresh**

Access	Read and write
Description	This attribute is used to enable or disable the ARP refresh feature.
Mib	Ip
Values	enabled disabled
Default	disabled

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ATTRIBUTE Vr Ip Arp autoRefreshTimeout

Access	Read and write
Description	This attribute defines the timeout value, in minutes, which is assigned to updated ARP entries, or newly created ARP entries. The range for the timeout is 1 minute to 1440 minutes (24 hours).
Mib	Ip
Values	Decimal (1..1440)
Units	minutes
Default	5

ATTRIBUTE Vr Ip Arp retryTimes

Access	Read and write
Description	This attribute defines the number of times that an ARP request will be sent to a remote host if there is no reply received. This value is assigned when ARP entries are updated or created. The range of the value can be from 0 to 127.
Mib	Ip
Values	Decimal (0..127)
Units	times
Default	127

COMPONENT Vr Ip Arp DynHostEntry (DynHost)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	GROUP Vr Ip Arp DynHost Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Router/<string> Arp DynHostEntry/<Ip Address>* *Router/<string> Vrf/<string> DynHostEntry/<Ip Address>* This component is a table that contains all Arp host entries (both static and dynamic). Each IP ARP entry in the table is uniquely defined by its IP address and connection class (cos) value. For *Vr*, when associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLIcEncap,*** and ***atmMpeVcEncap***, the connection class value of the arp entry is ***0, 1, 2,*** or ***3*** . For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

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For *Router* or *Vrf*, when the media associated with the interface is *atmMpe* or *IpoDlci*, the connection class value of the arp entry is ***0, 1, 2,*** or ***3***. For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

An IP packet that has been assigned a particular connection class value will be forwarded using the arp entry which corresponds to the next hop gateway IP address and matching connection class value where the next hop gateway IP address is determined via a forwarding table look up on the packet's destination IP address. When there are arp entries that match the next hop gateway IP address, but not the packet's connection class, then the packet will be forwarded using the arp entry that has the next lowest connection class value; failing this, the packet will be forwarded using the arp entry that has the next highest connection class value.

Mib: Ip

Common Verbs:
Help
List
Display

VERB Clear Vr Ip Arp DynHost

Impact: Passive

Description:

Clear [-inverse] Vr/<string> Ip Arp DynHostEntry/<Ip Address>
Clear [-inverse] Router/<string> Arp DynHostEntry/<Ip Address>
Clear [-inverse] Router/<string> Vrf/<string> Arp DynHostEntry/<Ip Address>

The *Clear* verb is used to delete the single dynamically learned ARP entry that is represented by this component.

The *Clear* command does not affect static ARP host entries, that is, entries whose *type* attribute has the value ***static***. These entries can be removed by deleting the corresponding provisioned *HostEntry* component under *Arp*.

The *-inverse* option deletes the ARP entry even if it was an inverse ARP entry. Inverse ARP entries are learned through inverse ARP (*FrDte* or *IpoDlci*) and inverse ATM ARP (*AtmMpe*), and should not be removed by the users accidentally. If the option is not present, an inverse ARP entry is not cleared.

GROUP Vr Ip Arp DynHost **Operational (Oper)**

Properties: Operational

Description: This group contains the operational attributes of the *DynHostEntry* component.

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Mib	Ip

ATTRIBUTE Vr Ip Arp DynHost physAddress

Access	Read only
Description	This attribute indicates the physical address of the host in canonical form.
Mib	Ip
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ip Arp DynHost maxTxUnit (mtu)

Access	Read only
Description	This attribute indicates the maximum MTU size that can be accepted by the host.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Vr Ip Arp DynHost encapsulationType (encap)

Access	Read only
Description	This attribute indicates the encapsulation type of the host.
Mib	Ip
Values	ieee8023 ethernet notApplicable
Default	No default

ATTRIBUTE Vr Ip Arp DynHost permanentVirtualCircuitNumber (pvcNo)

Access	Read only
Description	This attribute indicates the permanent virtual circuit number to the remote host.
Mib	Ip
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE Vr Ip Arp DynHost ifIndex

Access	Read only
Description	This attribute indicates the *ifIndex* of the protocol port that is associated with this entry.

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Mib	Ip
Values	Decimal (1..65535)
Default	1

ATTRIBUTE Vr Ip Arp DynHost type

Access	Read only
Description	This attribute indicates how this entry was learned.
Mib	Ip
Values	pending invalid dynamic static
Default	No default

ATTRIBUTE Vr Ip Arp DynHost ncPhysAddress

Access	Read only
Description	This attribute indicates the physical address of the host in non-canonical form. This attribute is not displayed for hosts on non-LAN media.
Mib	Ip
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ip Arp DynHost tunnelDestinationAddress (tda)

Access	Read only
Description	This attribute indicates the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	Ip
Values	IP address
Default	0.0.0.0

COMPONENT Vr Ip Arp HostEntry (Host)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]

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Groups	GROUP Vr Ip Arp Host Provisioned (Prov) GROUP Vr Ip Arp Host Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Arp HostEntry/<Ip Address>,<cos>* *Rtr/<string> Arp HostEntry/<Ip Address>,<cos>* *Rtr/<string> Vrf/<string> Arp HostEntry/<Ip Address>,<cos>* This component defines a static host entry in the ARP table. For *Vr*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***. For other media types, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis). For *Router* and *Vrf*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the media associated with the interface is *AtmMpe* or *IpoDlci*. For other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Arp Host Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *HostEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Arp Host physAddress

Access	Read and write
Description	This attribute identifies the physical address of the host being defined. The value for this attribute should only be specified for media types supporting physical addresses (e.g. ethernet, fddi, tokenRing etc.)
Mib	Ip
Values	String (0..8, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Vr Ip Arp Host maxTxUnit (mtu)

Access	Read and write

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Description	Specify the maximum transmit unit (MTU) size that can be accepted by the host. If this value is not specified, the value for the media interface is used. The specified MTU must be less than or equal to the interface's MTU size.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Vr Ip Arp Host permanentVirtualCircuitNumber (pvcNo)

Access	Read and write
Description	This attribute specifies the number of the PVC for the static host entry. It is the instance number of the X.25 media, Frame Relay media, and of the *AtmConnection* component on the ATM MPE interface..
Mib	Ip
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Ip Arp Host tunnelDestinationAddress (tda)

Access	Read and write
Description	This attribute specifies the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Arp Host encap

Access	Read and write
Description	This attribute specifies the encapsulation type for the host. The value for this attribute should only be specified for the hosts on the ethernet media. If a value of ***auto*** is specified, the application based on the media will determine the proper applicable encapsulation type.
Mib	Ip
Values	ieee8023 ethernet auto
Default	auto

GROUP Vr Ip Arp Host Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes of the *HostEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Arp Host operMaxTxUnit (operMtu)

Access	Read only
Description	This attribute indicates the operational value of the maximum transmission unit.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	No default

ATTRIBUTE Vr Ip Arp Host operEncap

Access	Read only
Description	This attribute indicates the operational encapsulation type. if the value of the attribute *encap* is set to ***auto***, then the application will determine the encapsulation type based on the media being used and assigns the appropriate value.
Mib	Ip
Values	ieee8023 ethernet notApplicable
Default	No default

COMPONENT Vr Ip Icmp

Groups	GROUP Vr Ip Icmp Statistics (Stats)
Scope	Application
Description	Vr/<string> Ip Icmp Rtr/<string> Icmp Rtr/<string> Vrf/<string> Icmp The Icmp component controls all ICMP related attributes available to this router.
Mib	Ip
Common Verbs	Help List Display

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VERB Ping Vr Ip Icmp

Impact: Passive

Description:

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-cos(0..3)][-dscp(0..63)][-tos(0..FF)][-stop] Vr/<string> Ip Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)]
[-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)]
[-traceRoute] [-continuous] [-dontFragment] [-noOp]
[-recordRoute(1..9)] [-timeStamp(1..4)]
[-looseSrcRoute(Ip Address...)][-strictSrcRoute(Ip Address...)]
[-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Vrf/<string> Icmp

The *Ping* verb is intended for testing network connections at the IP level. The verb invokes ICMP to issue an echo request to the host specified by the *ipAddr* option and waits for its echo response.

If the *Ping* is successful, it outputs the following information:
- number of bytes received
- IP address of the responding host
- ICMP sequence number of the received packet
- elaspsed time from sending of the *Ping* to receiving of the response

The following options are supported:

-srcAddr is used to define the source IP address of the IP ICMP echo request packet. When not specified or specified as 0.0.0.0, the outgoing IP *Interface* or *LogicalIf* address is used as the source address.

-netmask when specified is used to define a range of IP host addresses to which echo requests are sent to (ping sweep). The netmask given must be contiguous. The *-retry* option is ignored if used together with this option. By default, the value is set to 255.255.255.255.

-*size* is used to define the size of the IP packet to be echoed including the IP and ICMP header. The default is 64 bytes. The maximum size is 4096.

-*retry* is used to define the number of times an echo request is resent if no echo reply is received. Default is 0.

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-traceRoute is used to find the route the node would use to reach a particular destination IP address at the moment when the *Ping* command is executed with this option. The *-netmask*, *-size, -retry* and *-continuous* option are ignored if used together with this option. By default, the *traceRoute* option is not used.

-continuous causes ICMP to issue echo requests once per second to the host or hosts specified by the *-ipAddr* and the *-netmask* option. For every echo response ICMP receives, one line of output is printed. No output is produced if there is no response. The *-stop* option is used to stop ICMP from sending the echo requests. By default, the *-continuous* option is not used.

-dontFragment causes ICMP to set the Don't Fragment flag of the IP packet that carries the echo request. This is useful in determining path MTU. By default, the *dontFragment* option is not used.

-noOp causes a No Operation option to be inserted into the IP header of the packet that carries the echo request. By default, the *noOp* option is not used.

-recordRoute causes the route of the IP packet that carries the echo request to be recorded in the IP header. Up to 9 routes can be recorded. If the number of routes to record is not specified, 5 routes are recorded by default.

-timeStamp sets the Time Stamp option in the IP header of the packet that carries the echo request. The format used for the time stamps consists of both an IP Adress and a time field. The default number of time stamps is 3. A maximum of 4 time stamps can be recorded.

-looseSrcRoute is used to specify a loose set of routes for the packet carrying the echo request to go through along the path to the destination. Up to 9 routes can be specified.

-strictSrcRoute is used to specify a strict set of routes for the packet carrying the echo request to go through to get to the destination. Up to 9 routes can be specified.

-cos causes the echo request packet to be forwarded with the given Class Of Service. Default is 0. This option is not supported on a Router component, a VpnRouteForwarder component, nor on a VirtualRouter component that has a DifferentiatedServicesDomain subcomponent.

-dscp causes the six most significant bits of Type Of Service (TOS) byte of the echo request packet to be set to the given value. These six bits are know as the Differentiated Services Code Point (DSCP). Default is 0. This option cannot be used together with the *-tos* option.

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-tos causes the Type Of Service (TOS) byte of the echo request packet to be set to the given value. Default is 0. This option cannot be used together with the *-dscp* option.

-stop is used to stop ICMP from sending echo requests due to a previously issued *Ping* command with the *-continuous* and/or *-netmask* option. Under any other situation, the *Ping* command with the *-stop* option has no effect.

Note: Only one *Ping* command per *VirtualRouter* or *Router* or *Router Vrf* is allowed to be in progress at any one time. Any in progress *Ping* command must be stopped before a new *Ping* command can be issued.

GROUP Vr Ip Icmp Statistics (Stats)

Properties	Operational
Description	This group holds statistics for ICMP.
Mib	Ip

ATTRIBUTE Vr Ip Icmp inMsgs

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway. This number includes *inErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inErrors

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway but determined as having ICMP specific errors such as bad ICMP checksum or bad length. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inDestUnreachs

Access	Read only

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Description	This attribute counts the ICMP destination unreachable messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Icmp inRedirects

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Access	Read only
Description	This attribute counts the ICMP redirect messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ip Icmp inTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outMsgs

Access	Read only
Description	This attribute counts the ICMP messages that this gateway attempted to send. This number includes *outErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Ip Icmp outErrors

Access	Read only
Description	This attribute counts the ICMP messages that this gateway did not send due to problems discovered within ICMP such as a lack of buffers. *outErrors* does not include errors discovered outside the ICMP layer such as the inability of IP to route the resultant datagram. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.

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Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply message sent by this gateway. The counter wraps to zero when it exceeds its maximum value.

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Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages sent by this gateway.

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The counter wraps to zero when it exceeds its maximum value.

Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip RelayBC

Groups	GROUP Vr Ip RelayBC Provisioned (Prov) GROUP Vr Ip RelayBC Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip RelayBC* *Rtr/<string> RelayBC* *Rtr/<string> Vrf/<string> RelayBC* The *InwRelayBroadcast* component controls the dissemination of IP broadcast packets received as Link-Layer broadcast.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip RelayBC PortEntry (Port)
Common Verbs	Help List Display

GROUP Vr Ip RelayBC Provisioned (Prov)

Properties	Provisioned
Description	This group contains global configuration attributes for the Relay Broadcast component.
Mib	Ip

ATTRIBUTE Vr Ip RelayBC relayStatus

Access	Read and write
Description	Specifies whether or not IP will forward IP broadcast packets that were received as Link-Layer broadcasts.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip RelayBC relayNdStatus

Access	Read and write

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Description	Specifies whether or not IP will forward broadcast packets whose protocol is Sun ND.
Mib	Ip
Values	enabled disabled
Default	disabled

GROUP Vr Ip RelayBC Operational (Oper)

Properties	Operational
Description	This group contains RelayBroadcast component statistics.
Mib	Ip

ATTRIBUTE Vr Ip RelayBC relayNdCount

Access	Read only
Description	Indicates the number of Sun ND packets received by this router which were forwarded. *relayNdCount* wraps to zero if reached its maximum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip RelayBC PortEntry (Port)

Instance	Decimal (0..4294967295)
Groups	GROUP Vr Ip RelayBC Port Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip RelayBC PortEntry/<Decimal>* *Rtr/<string> RelayBC PortEntry/<Decimal>* This component is a table of destination UDP port numbers. In order for a packet to be forwarded by Relay Broadcast, the packet's destination UDP port number must be listed in this table.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip RelayBC Port Operational (Oper)

Properties	Operational

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Description	This group contains statistics related to *InwPortEntry*.
Mib	Ip

ATTRIBUTE Vr Ip RelayBC Port relayBcUdpCount

Access	Read only
Description	Indicates the number of forwarded packets with this destination UDP port number. *relayBcUdpCount* wraps to zero if reached its maximum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip Udp

Groups	GROUP Vr Ip Udp Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip Udp* *Rtr/<string> Udp* *Rtr/<string> Vrf/<string> Udp* *Udp* component controls all UDP related attributes supported by this router.
Mib	Ip
Dyn. Subcomp.	COMPONENT Vr Ip Udp ListenEntry
Common Verbs	Help List Display

GROUP Vr Ip Udp Statistics (Stats)

Properties	Operational
Description	This group holds statictics for UDP.
Mib	Ip

ATTRIBUTE Vr Ip Udp inDatagrams

Access	Read only
Description	The number of UDP datagrams delivered to UDP users. *inDatagrams* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Vr Ip Udp noPorts

Access	Read only
Description	The number of UDP datagrams received for which there was no application at the destination port. *noPorts* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Udp inErrors

Access	Read only
Description	The number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. *inErrors* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Udp outDatagrams

Access	Read only
Description	The number of UDP datagrams sent from this gateway. *outDatagrams* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip Udp ListenEntry

Instance	localAddress [IP address] localPort [Decimal (0..65535)]
Scope	Application
Description	The table contains UDP listener information.
Mib	Ip
Common Verbs	Help List Display LOCK Unlock

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COMPONENT Vr Ip Tcp

Groups	GROUP Vr Ip Tcp Statistics (Stats)
Scope	Application
Description	The *Tcp* component contains all attributes related to TCP.
Mib	Ip
Dyn. Subcomp.	COMPONENT Vr Ip Tcp TcpEntry (TcpEntry)
Common Verbs	Help List Display

GROUP Vr Ip Tcp Statistics (Stats)

Properties	Operational
Description	This group contains statistics for TCP.
Mib	Ip

ATTRIBUTE Vr Ip Tcp rToAlgorithm

Access	Read only
Description	Indicate which algorithm was used to calculate the timeout value used for retransmitting unackowledged octet.
Mib	Ip
Values	other constant rsre vanJacobson
Default	No default

ATTRIBUTE Vr Ip Tcp rToMin

Access	Read only
Description	Indicate the minimum value, measured in milliseconds, allowed for retransmission timeout.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE Vr Ip Tcp rToMax

Access	Read only

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Description	Indicates the maximun value, measured in milliseconds, allowed for retransmission timeout.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Vr Ip Tcp maxConn

Access	Read only
Description	Limit on number of connections the TCP can support. The value is always -1 which indicates that the number of connections supported is dynamic (limited by memory in the system).
Mib	Ip
Values	Signed (-1)
Default	-1

ATTRIBUTE Vr Ip Tcp activeOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synSent*** state from the ***closed*** state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp passiveOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synRcvd*** state from the ***listen*** state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp attemptFails

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***synSent*** state or the ***synRcvd*** state, plus the number of times TCP connections have made a direct transition to the ***listen*** state from the ***synRcvd*** state.

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Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp estabResets

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***established*** state or the ***closedWait*** state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp currEstab

Access	Read only
Description	The number of TCP connections for which the current state is either ***established*** or ***closedWait***.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp inSegs

Access	Read only
Description	The number of segments received, including those received in error. This count includes segments received on currently established connections.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp outSegs

Access	Read only
Description	The number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp retransSegs

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Access	Read only
Description	The number of segments retransmitted that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp inErrs

Access	Read only
Description	Total number of segments received in error, for example bad TCP checksum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp outRsts

Access	Read only
Description	Number of TCP segments sent containing the RST flag.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip Tcp TcpEntry (TcpEntry)

Instance	localAddress [IP address] localPort [Decimal (0..65535)] remoteAddress [IP address] remotePort [Decimal (0..65535)]
Groups	GROUP Vr Ip Tcp TcpEntry Operational (Oper)
Scope	Application
Description	The component defines an entry in the TCP connection table. Each entry corresponds to TCP end-point identified by 4-tuples, *LocalAddress*, *LocalPort*, *RemoteAddress*, and *RemotePort*.
Mib	Ip
Common Verbs	Help List Display

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GROUP Vr Ip Tcp TcpEntry **Operational (Oper)**

Properties	Operational
Description	This group contains columnar entries for each end-point on the TCP.
Mib	Ip

ATTRIBUTE Vr Ip Tcp TcpEntry **state**

Access	Read and write
Description	This attribute reflects the current state of this Tcp connection.
Mib	Ip
Values	closed listen synSent synReceived established closeWait finWait1 closing lastAck finWait2 timeWait delete
Default	No default

COMPONENT Vr Ip **BootpRelayAgent (Bootp)**

Groups	GROUP Vr Ip Bootp AdministrativeControl (AdminControl) GROUP Vr Ip Bootp Provisioned (Prov) GROUP Vr Ip Bootp OsiState (State) GROUP Vr Ip Bootp OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent* *Rtr/<string> BootpRelayAgent* *Rtr/<string> Vrf<string> BootpRelayAgent* The *BootpRelayAgent* component contains all the necessary attributes and components to provision a BOOTP relay agent. The BOOTP relay agent functionality conforms to that described in RFCs 951 and 1542. The purpose of the BOOTP relay agent is to forward BOOTP request packets from a client to a server, and also to deliver server BOOTP replies back to the client. When a BOOTP request is received on a port, the request will be sent to a provisioned list of IP addresses for that port. In

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addition, the request will be broadcast out all other BOOTP ports which allow it.

Mib	Ip
Dyn. Subcomp.	COMPONENT Vr Ip Bootp BootpPortEntry (PpE)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Bootp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Bootp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Ip Bootp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *BootpRelayAgent* component.
Mib	Ip

ATTRIBUTE Vr Ip Bootp hopDiscardThreshold (hops)

Access	Read and write
Description	BOOTP packets contain a ‘hops’ field which is used to limit the number of relay agents that can process the packet (each relay agent increments the

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	'hops' field by one). This attribute is used by the relay agent to determine when to discard a BOOTP packet. If the 'hops' field exceeds the *hopDiscardThreshold* the BOOTP packet will be discarded.
Mib	Ip
Values	Decimal (2..16)
Default	4

GROUP Vr Ip Bootp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Bootp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Bootp operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Bootp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Bootp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Bootp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

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Mib	Ip
Values	up down testing
Default	up

COMPONENT Vr Ip Bootp BootpPortEntry (PpE)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip Bootp PpE Operational (Oper) GROUP Vr Ip Bootp PpE Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent BootpPortEntry/<string>* *Rtr/<string> BootpRelayAgent BootpPortEntry/<string>* *Rtr/<string> Vrf/<string> BootpRelayAgent BootpPortEntry/<string>* The *BootpPortEntry* component contains information about the provisioned *BootpPort*. This component is indexed by a string which represents a *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface* component name.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Bootp PpE Operational (Oper)

Properties	Operational
Description	This group contains *BootpPortEntry* component operational data.
Mib	Ip

ATTRIBUTE Vr Ip Bootp PpE status

Access	Read only
Description	This attribute indicates the status of the provisioned *BootpPortEntry* component. A value of ***disabled*** is used when the parent components is in a disabled state. A value of ***up*** is used when the *BootpPortEntry* is in an operational state. A state of ***down*** is used if the media associated with the *BootpPortEntry* is not ready or disabled.
Mib	Ip
Values	up down disabled

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Default	No default

GROUP Vr Ip Bootp PpE Statistics (Stats)

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	Ip

ATTRIBUTE Vr Ip Bootp PpE inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bootp PpE inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bootp PpE outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bootp PpE outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ip Bootp PpE inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bootp PpE inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip Cache

Instance	Decimal (0..15)
Groups	GROUP Vr Ip Cache OsiState (State) GROUP Vr Ip Cache Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Cache/n* *Rtr/<string> Cache/n* *Rtr/<string> Vrf/<string> Cache/n* This component represents the IP cache table on LP *n*.
Mib	Ip
Common Verbs	Help List Display

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VERB Clear Vr Ip Cache

Impact	Service
Description	*Clear Vr/<string> Ip Cache/n* *Clear Router/<string> Cache/n* *Clear Router/<string> Vrf/<string> Cache/n* This verb clears all entries in the cache table on LP *n*. This command deletes all the *Entry* subcomponents of *Cache/n*.

GROUP Vr Ip Cache **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Cache **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Cache **operationalState (osiOper)**

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Cache usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Cache Operational (Oper)

Properties	Operational
Description	This group houses all the operational attributes of an *Ip* cache table.
Mib	Ip

ATTRIBUTE Vr Ip Cache entriesFree (ef)

Access	Read only
Description	This attribute is indicative of the number of free *Ip* cache table entries. A consistently high value for this attribute indicates that there is a resource surplus of the memory requirements for cache table. This surplus could be utilized elsewhere if needed by adjusting the appropriate

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cacheTableMaxEntries attribute. For *Vr*, *cacheTableMaxEntries* is under the *Ip* component; for *Rtr* and *Vrf*, it is under the respective components.

Mib	Ip
Values	Decimal (0..8000)
Default	No default

ATTRIBUTE Vr Ip Cache totalLookups (tl)

Access	Read only
Description	This attribute indicates the total number of local cache lookups. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Cache lookupMisses (lm)

Access	Read only
Description	This attribute indicates the total number of local cache lookup misses. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Cache cacheTableMaxEntries (ctme)

Access	Read only
Description	This attribute indicates the current maximum number of entries that can exist in the IP local cache table on each LP.
Mib	Ip
Values	Decimal (0..8000)
Default	No default

COMPONENT Vr Ip Tunnel

Groups	GROUP Vr Ip Tunnel OsiState (State) GROUP Vr Ip Tunnel Operational (Oper) GROUP Vr Ip Tunnel Provisioned (Prov)
Scope	Application

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Description	*Vr/<string> Ip Tunnel* The *Tunnel* component is used to add, delete and modify tunnel end points.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip Tunnel StaticEndPoint (Sep) COMPONENT Vr Ip Tunnel MultipointStaticEndPoint (Msep)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Tunnel OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Tunnel operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Tunnel usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Tunnel Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Tunnel* component.
Mib	Ip

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ATTRIBUTE Vr Ip Tunnel optimizationStatus (opts)

Access	Read only
Description	This attribute indicates the tunnel optimization status of this *Tunnel* instance. ***optimized***: The IP tunnels represented by the *Msep* subcomponents of this *Tunnel* instance have been optimized. ***ineligible***: The conditions necessary for tunnel optimization are not met. None of the IP tunnels represented by the *Msep* subcomponents of this *Tunnel* instance have been optimized. ***eligible***: All of the conditions necessary for tunnel optimization are met, but the *optimization* attribute has been set to ***disabled***. None of the IP tunnels represented by the *Msep* subcomponents of this *Tunnel* instance have been optimized. ***optimizationOnHold***: All of the conditions necessary for tunnel optimization are met, but since the tunnel was in the ineligible state with the *optimization* attribute set to ***enabled***, it does not go into the ***optimized*** state. Instead, the tunnel goes into the ***optimizationOnHold*** state. To proceed with optimization, disable and re-enable optimization.
Mib	Ip
Values	optimized ineligible eligible optimizationOnHold
Default	No default

GROUP Vr Ip Tunnel Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Tunnel* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel optimization (opt)

Access	Read and write
Description	This attribute specifies whether tunnel optimization is enabled for the *Msep* subcomponents of this *Tunnel* instance. Tunnel optimization is not performed for any of the *Msep* subcomponents if either of the following is true: - The *VirtualRouter* has *ProtocolPort* components that are linked to components representing physical media on more than one access card. This includes the case when one of the cards is a standby card, or when the physical media is linked to a SONET or SDH port which is protected by

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inter-card APS. This also includes if *AtmMultiprotocolEncapsulation SpvcTerminationPoint* is used and the *AtmConnection* components resides on more than one access card.

- The *VirtualMedia Interface* component corresponding to any of the *Msep* subcomponent of this *Tunnel* instance has its *mode* attribute set to a value other than ***alwaysUpSummaryInterface***.

This attribute must be set to ***disabled*** if the *VirtualRouter* has a *ProtocolPort* which is linked to an *AtmMpe* component whose *encapType* attribute is set to ***llcBridgeEncap***.

Mib	Ip
Values	disabled enabled
Default	disabled

COMPONENT Vr Ip Tunnel StaticEndPoint (Sep)

Instance	Decimal (0..63)
Groups	GROUP Vr Ip Tunnel Sep IfEntryProv (IfEntry) GROUP Vr Ip Tunnel Sep MediaProv (Mp) GROUP Vr Ip Tunnel Sep Provisioned (Prov) GROUP Vr Ip Tunnel Sep Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Tunnel StaticEndPoint/n* An IP tunnel allows two geographically separated networks to be connected over a shared IP network (for example the Internet), either because the networks at the end points are using private IP address or they are not running IP as the network protocol. This component represents a static IP Tunnel End Point. It is static in the sense that both the tunnel source and destination IP addresses are static configured. For proper operation of the tunnel, the exact source and destination IP addresses (in reverse order) must be used to provision the Tunnel End Point on the far end router. Two types of IP tunnel encapsulation are supported: IP in IP as specified in RFC 2003 and Generic Routing Encapsulation as specified in RFC 1701. Note: IP in IP tunnel encapsulation is not compliant with RFC 2003

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when using an ATM IP FP as a backbone FP.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Tunnel Sep IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Sep ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

ATTRIBUTE Vr Ip Tunnel Sep ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Ip
Values	Decimal (1..65535)
Default	No default

GROUP Vr Ip Tunnel Sep MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.

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Mib	Ip

ATTRIBUTE Vr Ip Tunnel Sep linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	Ip
Values	Link (Service, linkToMedia)
Default	No default

GROUP Vr Ip Tunnel Sep Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *StaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Sep encapType

Access	Read and write
Criticality	Component
Description	There are two types of encapsulation techniques for IP tunnel, IP in IP (RFC 2003) and GRE over IP (RFC 1701). This attributes specifies the encapsulation type of the IP tunnel. ***ipInIp***: As defined in RFC 2003, it can be used to encapsulated IP and IP payload only. If IP is the only type of payload to be encapsulated by the tunnel, this type of encapsulation is recommended as it requires less processing and uses less bandwidth. Note: IP in IP tunnel encapsulation is not compliant with RFC 2003 when using an ATM IP FP as a backbone FP. ***greIp***: As defined in RFC 1701, it can be used to encapsulate IP or IPX payload. To encapsulate IPX payload, this encapsulation type must be used.
Mib	Ip
Values	ipInIp greIp
Default	ipInIp

ATTRIBUTE Vr Ip Tunnel Sep sourceAddress (src)

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Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of the local end of the tunnel. The source address must be an address in the shared domain, and it must equal to an interface address on its own Virtual Router (under *Vr/<string> Pp/<string> IpPort LogicalIf/<IpAddress>*). However, it must not be the interface address of the linked protocol port's *IpPort* component. The *sourceAddress* of *StaticEndPoint* or *MultipointStaticEndPoint* components within the same *sharedDomainVirtualRouter* must be unique.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Tunnel Sep destinationAddress (dst)

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of the far end of the tunnel. It must not match any of the IP interface addresses on this Virtual Router.
Mib	Ip
Values	IP address
Default	0.0.0.0

GROUP Vr Ip Tunnel Sep Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *StaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Sep discoveredPathMtu (dmtu)

Access	Read only
Description	This attribute indicates the latest learned Path MTU of the tunnel. An MTU is the maximum transmission unit of an arbitrary internet path. When a large amount of IP datagrams are to be transmitted, it is usually preferable that the datagrams be of the largest size that does not require fragmentation anywhere along the path from the source to the destination. This datagram size is referred to as the Path MTU (PMTU). It is equal to the minimum of the MTUs of each hop in the path.
Mib	Ip

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Values	Decimal (0; 100..18944)
Default	0

COMPONENT Vr Ip Tunnel MultipointStaticEndPoint (Msep)

Instance	Decimal (0..1)
Groups	GROUP Vr Ip Tunnel Msep IfEntryProv (IfEntry) GROUP Vr Ip Tunnel Msep MediaProv (Mp) GROUP Vr Ip Tunnel Msep Provisioned (Prov) GROUP Vr Ip Tunnel Msep Operational (Oper) GROUP Vr Ip Tunnel Msep DestinationDiscovery (DstDisovery)
Scope	Application
Description	*Vr/<string> Ip Tunnel MultipointStaticEndPoint/n* An IP tunnel allows more than one geographically separated networks to be connected over a shared IP network (for example the Internet) because the networks at the end points are using private IP address. This component represents a static IP Tunnel End Point of a point-to-multipoint IP Tunneling configuration. It is static in the sense that both the tunnel source address and the list of destination IP addresses are statically configured. Only one type of IP tunnel encapsulation is supported: IP in IP as specified in RFC 2003. Note: IP in IP tunnel encapsulation is not compliant with RFC 2003 when using an ATM IP FP as a backbone FP.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Tunnel Msep IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

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Mib	Ip
Values	up down testing
Default	up

ATTRIBUTE Vr Ip Tunnel Msep ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Ip
Values	Decimal (1..65535)
Default	No default

GROUP Vr Ip Tunnel Msep MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	Ip
Values	Link (Service, linkToMedia)
Default	No default

GROUP Vr Ip Tunnel Msep Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *MultipointStaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep pathMtu (mtu)

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Access	Read and write
Description	This attribute specifies the Path Maximum Transmission Unit (PMTU) of the IP Tunnel. If this attribute is set to discovered, the lowest PMTU value for all tunnel endpoints will be discovered and used to forward IP datagrams. Otherwise, if this attribute is set to an actual value, the value must be less or equal to the PMTU of all tunnel endpoints. IP fragmentation will occur for IP datagrams larger than PMTU.
Mib	Ip
Values	Decimal (100..18944) discovered
Default	9180

ATTRIBUTE Vr Ip Tunnel Msep encapType

Access	Read and write
Description	This component only supports one type of encapsulation technique for IP tunnel: IP in IP (RFC 2003). ***ipInIp***: As defined in RFC 2003, it can be used to encapsulated IP and IP payload only. Note: IP in IP tunnel encapsulation is not compliant with RFC 2003 when using an ATM IP FP as a backbone FP.
Mib	Ip
Values	ipInIp
Default	ipInIp

ATTRIBUTE Vr Ip Tunnel Msep sharedDomainVirtualRouter (sdvr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the virtual router at the source endpoint of the IP tunnel. The value must specify a *VirtualRouter* component whose *vpnMode* attribute is set to ***carrier***.
Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Tunnel Msep sourceAddress (src)

Access	Read and write
Criticality	Component

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Description	This attribute specifies the IP address of the local end of the IP tunnel in the shared domain. There must be a logical interface with this IP address under the virtual router instance specified in the *sharedDomainVirtualRouter* attribute. This interface IP address cannot be an IP address defined under this IP tunnel protocol port. The *sourceAddress* of *StaticEndPoint* or *MultipointStaticEndPoint* components within the same *sharedDomainVirtualRouter* must be unique.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Tunnel Msep autoDiscovery (disc)

Access	Read and write
Description	This attribute specifies whether the IP VPN auto discovery feature is enabled or disabled on this MSEP instance. If the value is ***enabled*** the MSEP instance exchanges the tunnel source and destination addresses with the BGP-4 instance configured on the same customer VR.
Mib	Ip
Values	disabled enabled
Default	disabled

ATTRIBUTE Vr Ip Tunnel Msep destinationAddresses (dst)

Access	Read and write
Description	This attribute specifies the list of IP addresses mapping to each of the far end IP tunnel endpoints in the private domain. It must not match any of the IP interface addresses on the Virtual Router pointed to by the *sharedDomainVirtualRouter* attribute.
Mib	Ip
List of	IP address
Default	No default

GROUP Vr Ip Tunnel Msep Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *StaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep discoveredPathMtu (dmtu)

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Access	Read only
Description	This attribute indicates the latest learned Path MTU of the tunnel. An MTU is the maximum transmission unit of an arbitrary internet path. When a large amount of IP datagrams are to be transmitted, it is usually preferable that the datagrams be of the largest size that does not require fragmentation anywhere along the path from the source to the destination. This datagram size is referred to as the Path MTU (PMTU). It is equal to the minimum of the MTUs of each hop in the path.
Mib	Ip
Values	Decimal (0; 100..18944)
Default	0

GROUP Vr Ip Tunnel Msep DestinationDiscovery (DstDisovery)

Properties	Operational
Description	This group contains the operational status attributes of the *MultipointStaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep discoveredDestinationAddresses (ddst)

Access	Read only
Description	This attribute shows the list of IP addresses mapping to each of the remote IP tunnel endpoints in the private domain. The endpoints are learned by BGP-4 when this MSEP instance is configured to run auto discovery.
Mib	Ip
List of	IP address
Default	No default

COMPONENT Vr Ip NextHopResolutionProtocol (Nhrp)

Groups	GROUP Vr Ip Nhrp AdministrativeControl (AdminControl) GROUP Vr Ip Nhrp Provisioned (Prov) GROUP Vr Ip Nhrp OsiState (State) GROUP Vr Ip Nhrp OperationalStatus (OperStatus) GROUP Vr Ip Nhrp Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip NextHopResolutionProtocol* This component represents a co-located NHRP Client and Server as specified in RFC2332. NHRP provides a method for a station connected to a Non-Broadcast Multiple Access (NBMA) subnetwork to determine the inter-networking layer address and NBMA subnetwork address of the “next

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hop" towards a destination station. NHRP reduces or eliminates the extra hops required by the existing logically independent IP subnet (LIS) model.

Mib	IpNhrp
Subcomponents	COMPONENT Vr Ip Nhrp NextHopServer (Nhs) COMPONENT Vr Ip Nhrp NextHopClient (Nhc)
Dyn. Subcomp.	COMPONENT Vr Ip Nhrp ResCacheEntry (Rce)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Nhrp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpNhrp
Values	up down testing
Default	up

GROUP Vr Ip Nhrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Nhrp* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp maxResCacheEntries

Access	Read and write

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Description	This attribute specifies the maximum number of *ResCacheEntry* components which may exist under the *Nhrp* component at any one time. Reducing the value of this attribute will not clear existing entries.
Mib	IpNhrp
Values	Decimal (32..1024)
Default	512

ATTRIBUTE Vr Ip Nhrp fwdTransitRecord (ftr)

Access	Read and write
Description	This attribute specifies whether to attach a forward transit record extension to NHRP packets (Resolution and Purge requests) that originate from this node. This extension along with NHRP debug tracing set to “verbose” can be used in tracing the path the NHRP packet takes from source to destination.
Mib	IpNhrp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Nhrp revTransitRecord (rtr)

Access	Read and write
Description	This attribute specifies whether to attach a reverse transit record extension to Resolution Request packets that originate from this node. This extension along with NHRP debug tracing set to “verbose” can be used in tracing the path the NHRP packet takes from destination to source.
Mib	IpNhrp
Values	enabled disabled
Default	disabled

GROUP Vr Ip Nhrp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp adminState (osiAdmin)

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpNhrp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Nhrp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IpNhrp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Nhrp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: IpNhrp

Values:
idle
active (activ)
busy

Default: idle

GROUP Vr Ip Nhrp OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: IpNhrp

ATTRIBUTE Vr Ip Nhrp snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: IpNhrp

Values:
up
down
testing

Default: up

GROUP Vr Ip Nhrp Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *Nhrp* component.

Mib: IpNhrp

ATTRIBUTE Vr Ip Nhrp currResCacheEntries

Access: Read only

Description: This attribute indicates the current number of entries in the NHRP resolution cache table.

Mib: IpNhrp

Values: Decimal (0..4292967295)

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Default	No default

ATTRIBUTE Vr Ip Nhrp peakResCacheEntries

Access	Read only
Description	This attribute indicates the peak value of *currResCacheEntries* since the *Nhrp snmpOperStatus* attribute last became ***up***.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Ip Nhrp NextHopServer (Nhs)

Groups	GROUP Vr Ip Nhrp Nhs Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip Nhrp NextHopServer* This component represents the NHRP server. The server performs the NHRP service within the NBMA cloud.
Mib	IpNhrp
Opt. Subcomp.	COMPONENT Vr Ip Nhrp Nhs EgressPolicy (Ep)
Common Verbs	Help List Display

GROUP Vr Ip Nhrp Nhs Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of the *Nhs* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhs rxResolveReq

Access	Read only
Description	This attribute counts the NHRP Resolution Requests received by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyAck

Access	Read only

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Description	This attribute counts the positively acknowledged NHRP Resolution Replies transmitted by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyNakProhibited

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies transmitted by this server with the code ‘Administratively Prohibited’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyNakInsufResources

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies transmitted by this server with the code ‘Insufficient Resources’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyNakNoBinding

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies transmitted by this server with the code ‘No Inter-networking Layer Address to NBMA Address Binding Exists’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyNakNotUnique

Access	Read only

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Description	This attribute counts the NAK NHRP Resolution Replies transmitted by this server with the code 'Binding Exists But Is Not Unique'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs **rxRegisterReq**

Access	Read only
Description	This attribute counts the NHRP Registration Requests received by this server. Registration is not supported, therefore all NHRP Registration Requests are silently dropped. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs **rxPurgeReq**

Access	Read only
Description	This attribute counts the NHRP Purge Requests received by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs **txPurgeReq**

Access	Read only
Description	This attribute counts the NHRP Purge Requests transmitted by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs **rxPurgeReply**

Access	Read only
Description	This attribute counts the NHRP Purge Replies received by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp

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Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txPurgeReply

Access	Read only
Description	This attribute counts the NHRP Purge Replies transmitted by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrUnrecognizedExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Unrecognized Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrLoopDetected

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘NHRP Loop Detected’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrProtoAddrUnreachable

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Protocol Address Unreachable’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrProtoError

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Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Protocol Error’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrSduSizeExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘NHRP SDU Size Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrInvalidExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Invalid Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrInvalidResReplyReceived

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Invalid Resolution Reply Received’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrAuthenticationFailure

Access	Read only

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Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Authentication Failure’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrHopCountExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Hop Count Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrUnrecognizedExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Unrecognized Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrLoopDetected

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘NHRP Loop Detected’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrProtoAddrUnreachable

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Protocol Address Unreachable’. This counter wraps to zero when the maximum value is exceeded.

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Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrProtoError

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Protocol Error’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrSduSizeExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘NHRP SDU Size Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrInvalidExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Invalid Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrAuthenticationFailure

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Authentication Failure’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)

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Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrHopCountExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code 'Hop Count Exceeded'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdResolveReq

Access	Read only
Description	This attribute counts the NHRP Resolution Requests forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdResolveReply

Access	Read only
Description	This attribute counts the NHRP Resolution Replies forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdRegisterReq

Access	Read only
Description	This attribute counts the NHRP Registration Requests forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdRegisterReply

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Access	Read only
Description	This attribute counts the NHRP Registration Replies forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs **fwdPurgeReq**

Access	Read only
Description	This attribute counts the NHRP Purge Requests forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs **fwdPurgeReply**

Access	Read only
Description	This attribute counts the NHRP Purge Replies forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs **fwdErrorIndication**

Access	Read only
Description	This attribute counts the NHRP Error Indication packets forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Ip Nhrp Nhs **EgressPolicy (Ep)**

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Nhrp Nhs Ep Provisioned (Prov)

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Scope	Application
Description	*Vr/<string> Ip Nhrp Nhs EgressPolicy/n* This component represents an egress policy on this server. The server has the following default egress policies which may be overridden by any provisioned egress policies: 1. NAK resolution request for any remotely attached destination regardless of source, 2. ACK resolution request for any locally attached destination regardless of source.
Mib	IpNhrp
Subcomponents	COMPONENT Vr Ip Nhrp Nhs Ep NetworkAddress (NetAddr)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Nhrp Nhs Ep Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *EgressPolicy* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhs Ep action

Access	Read and write
Description	This attribute specifies how the server should handle the NHRP Resolution Request if it matches this policy. The possible actions are: ***ack*** - Send a positive acknowledgement (ACK Reply) for the request. ***nak*** - Send a negative acknowledgement (NAK Reply) for the request.
Mib	IpNhrp
Values	ack nak
Default	nak

ATTRIBUTE Vr Ip Nhrp Nhs Ep protocol

Access	Read and write
Description	This attribute species the reachability type (that is, protocol) of the destination in the NHRP Resolution Request. The possible protocols: ***default*** - This value is a ‘wildcard’ and matches any protocol. A policy with a ‘wildcard’ protocol is less preferred than a policy with a protocol which matches exactly. ***staticLocal*** - The destination is on a locally attached network.
Mib	IpNhrp

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Values	default staticLocal
Default	default

COMPONENT Vr Ip Nhrp Nhs Ep **NetworkAddress (NetAddr)**

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Nhrp Nhs Ep NetAddr Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Nhrp Nhs Ep/n NetworkAddress/n* This component represents the source and destination address pairs for an NHRP egress policy.
Mib	IpNhrp
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Nhrp Nhs Ep NetAddr **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *NetworkAddress* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhs Ep NetAddr **sourceAddress (srcAddr)**

Access	Read and write
Description	This attribute specifies the internetwork address of the source. This is used to match a source internetwork address in an NHRP Resolution Request.
Mib	IpNhrp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Nhrp Nhs Ep NetAddr **sourceMask (srcMask)**

Access	Read and write
Description	This attribute specifies the netmask for the source internetwork address.
Mib	IpNhrp
Values	IP address
Default	0.0.0.0

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ATTRIBUTE Vr Ip Nhrp Nhs Ep NetAddr destinationAddress (dstAddr)

Access	Read and write
Description	This attribute specifies the internetwork address of the destination. This is used to match a destination internetwork address in an NHRP Resolution Request.
Mib	IpNhrp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Nhrp Nhs Ep NetAddr destinationMask (dstMask)

Access	Read and write
Description	This attribute specifies the netmask for the destination internetwork address.
Mib	IpNhrp
Values	IP address
Default	0.0.0.0

COMPONENT Vr Ip Nhrp NextHopClient (Nhc)

Groups	GROUP Vr Ip Nhrp Nhc Provisioned (Prov) GROUP Vr Ip Nhrp Nhc Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip Nhrp NextHopClient* This component represents the NHRP client. The client initiates NHRP requests of various types in order to obtain access to the NHRP service.
Mib	IpNhrp
Common Verbs	Help List Display

GROUP Vr Ip Nhrp Nhc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Nhc* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhc flowDetectPacketCount (fdpc)

Access	Read and write
Description	This attribute, along with *flowDetectTimePeriod*, specifies the IP traffic flow detection threshold; If the number of IP packets sent to a particular

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destination within the time interval specified by *flowDetectTimePeriod* exceeds the value specified by *flowDetectPacketCount*, then an NHRP Resolution Request will be triggered. If successful, a shortcut will be set up.

Mib	IpNhrp
Values	Decimal (1..4292967295)
Default	600

ATTRIBUTE Vr Ip Nhrp Nhc flowDetectTimePeriod (fdtp)

Access	Read and write
Description	This attribute, along with *flowDetectPacketCount*, specifies the IP traffic flow detection threshold; If the number of IP packets sent to a particular destination within the time interval specified by *flowDetectTimePeriod* exceeds the value specified by *flowDetectPacketCount*, then an NHRP Resolution Request will be triggered. If successful, a shortcut will be set up.
Mib	IpNhrp
Values	Decimal (10; 20; 30; 40; 50; 60)
Units	seconds
Default	60

ATTRIBUTE Vr Ip Nhrp Nhc idleDetectPacketCount (idpc)

Access	Read and write
Description	This attribute, along with *idleDetectTimePeriod*, specifies the idle shortcut threshold; If the number of frames transmitted over an outgoing shortcut, or received over an incoming shortcut, within the time interval specified by *idleDetectTimePeriod* falls below the value specified by *idleDetectPacketCount*, then the shortcut connection will be released.
Mib	IpNhrp
Values	Decimal (1..4292967295)
Default	900

ATTRIBUTE Vr Ip Nhrp Nhc idleDetectTimePeriod (idtp)

Access	Read and write
Description	This attribute, along with *idleDetectPacketCount*, specifies the idle shortcut threshold; If the number of frames transmitted over an outgoing shortcut, or received over an incoming shortcut, within the time interval specified by *idleDetectTimePeriod* falls below the value specified by *idleDetectPacketCount*, then the shortcut connection will be released.
Mib	IpNhrp

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Values	Decimal (1..30)
Units	minutes
Default	3

ATTRIBUTE Vr Ip Nhrp Nhc **atmFlowDetection (afd)**

Access	Read and write
Description	This attribute specifies whether flow detection should be performed for IP traffic received on ATM cards. This attribute does not apply to IP traffic received on LAN or non-ATM WAN cards.
Mib	IpNhrp
Values	enabled disabled
Default	disabled

GROUP Vr Ip Nhrp Nhc **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistics attributes of the *Nhc* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhc **txResolveReq**

Access	Read only
Description	This attribute counts the NHRP Resolution Requests transmitted by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc **rxResolveReplyAck**

Access	Read only
Description	This attribute counts the positively acknowledged NHRP Resolution Replies received by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc **rxResolveReplyNakProhibited**

Access	Read only

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Description	This attribute counts the NAK NHRP Resolution Replies received by this client that contained the code indicating 'Administratively Prohibited'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxResolveReplyNakInsufResources

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies received by this client that contained the code indicating 'Insufficient Resources'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxResolveReplyNakNoBinding

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies received by this client that contained the code indicating 'No Inter-networking Layer Address to NBMA Address Binding Exists'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxResolveReplyNakNotUnique

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies received by this client that contained the code indicating 'Binding Exists But Is Not Unique'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxPurgeReq

Access	Read only
Description	This attribute counts the NHRP Purge Requests received by this client. This counter wraps to zero when the maximum value is exceeded.

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Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc txPurgeReq

Access	Read only
Description	This attribute counts the NHRP Purge Requests transmitted by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxPurgeReply

Access	Read only
Description	This attribute counts the NHRP Purge Replies received by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc txPurgeReply

Access	Read only
Description	This attribute counts the NHRP Purge Replies transmitted by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc txErrIndication

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrUnrecognizedExtension

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Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Unrecognized Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrLoopDetected

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘NHRP Loop Detected’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrProtoAddrUnreachable

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Protocol Address Unreachable’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrProtoError

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Protocol Error’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrSduSizeExceeded

Access	Read only

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Description	This attribute counts the NHRP Error Indication packets received by this client with the error code 'NHRP SDU Size Exceeded'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrInvalidExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code 'Invalid Extension'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrAuthenticationFailure

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code 'Authentication Failure'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrHopCountExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code 'Hop Count Exceeded'. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Ip Nhrp ResCacheEntry (Rce)

Instance	destAddr (addr) [IP address] destMask (mask) [IP address]
Groups	GROUP Vr Ip Nhrp Rce Operational (Oper)
Scope	Application

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Description	*Vr/<string> Ip Nhrp ResCacheEntry/<ipAddress>,<mask>* This component represents an entry in the NHRP resolution cache table.
Mib	IpNhrp
Common Verbs	Help List Display

VERB Clear Vr Ip Nhrp Rce

Impact	Service
Description	*Clear Vr/x Ip Nhrp ResCacheEntry/<ipAddress>,<mask>* This command clears the resolution cache entry specified by *ipAddress* and *mask*.

GROUP Vr Ip Nhrp Rce **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *ResCacheEntry* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Rce **nbmaAddress**

Access	Read only
Description	This attribute indicates the NBMA subnetwork address of the next hop.
Mib	IpNhrp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Vr Ip Nhrp Rce **entryState**

Access	Read only
Description	This attribute indicates the state of this resolution cache entry. The possible states are: ***incomplete*** - The client sent the resolution request and is waiting for a reply. ***ackReply*** - The client sent the resolution request and received an ACK reply. ***nakReply*** - The client sent the resolution request and received a NAK reply. This entry remains in the cache for 20 minutes thereby preventing subsequent requests during that time period. ***noReply*** - The client sent the resolution request but did not receive a reply. This entry remains in the cache for 20 minutes thereby preventing subsequent requests during that time period. ***localReply*** - The client sent the resolution request and received an ACK reply from a locally-attached responder. This entry remains in the cache

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	for 20 minutes thereby preventing subsequent requests during that time period.
Mib	IpNhrp
Values	incomplete ackReply nakReply noReply localReply
Default	No default

ATTRIBUTE Vr Ip Nhrp Rce holdingTime

Access	Read only
Description	This attribute indicates the number of seconds that this entry will remain in the resolution cache table. If the entry has not been refreshed before this time it will be removed from the cache.
Mib	IpNhrp
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Nhrp Rce shortcut

Access	Read only
Description	This attribute indicates the component name of the shortcut connection associated with this resolution cache entry. If the component name is empty then no shortcut currently exists.
Mib	IpNhrp
Values	The name of the component
Default	No default

COMPONENT Vr Ip CosPolicyGroup (Pg)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip Pg Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip CosPolicyGroup/<string>* This component and its subcomponents specify the IP Class of Service (CoS) capabilities of an *IpPort*. Up to four different forwarding and packet marking behaviors can be configured. For a greater range of forwarding and packet marking behaviors, the Differentiated Services capabilities of the *Vr DifferentiatedServicesDomain* and *Vr Ip DiffServProfile* components

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is used. See the descriptions of those components for more information.

A *CosPolicyGroup* component is used by all *IpPort* subcomponents of a *VirtualRouter* by setting the *cosPolicyAssignment* attribute of the *Ip* component. It is used by one or more *IpPort* subcomponents directly by setting the *cosPolicyAssignment* attribute of the *IpPort*. The direct assignment to the *IpPort* completely overrides the assignment to the *Ip*.

Processing of IP packets with *CosPolicyGroup* components is based on a Class Of Service (CoS) value assigned to each IP packet as it processed by the *VirtualRouter*. CoS values vary over the range from 0 to 3 and have local significance only.

There are six logical stages in CoS processing on the *VirtualRouter.* These six stages are presented below, along with the behavior of locally generated packets, and the behavior of any *IpPort* that does not use a *CosPolicyGroup*, and exceptions for MS3 cards.

1. INGRESS CLASSIFICATION AND CoS ASSIGNMENT

The Class Of Service (CoS) value assigned to an IP packet is initialized to be equal to the connection class value associated with the ingress Layer 2 connection where the packet was received.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte*, the connection class is specified by the *ipCoS* attribute of the *StaticDlci* or *DynamicDlciDef* subcomponent. For *IpDlciGroup*, the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent. For all other media, the connection class is specified by the *ipCoS* attribute of the *IpPort.*

After classification is performed as described above, if one or more *TosMap* components exist under a *Policy* subcomponent of the *CosPolicyGroup* used by the *IpPort* where the packet was received, then the Class Of Service (CoS) assigned to the packet is updated according to these components if there is a match. A match occurs if selected bits of the Differentiated Services (DS) field, also known at the Type of Service (ToS) field, are equal to the same selected bits of one of the values specified by the *tos* attribute of a *TosMap* subcomponent of the *CosPolicyGroup* used by the *IpPort* where the packet was received. If a match occurs, then the CoS value assigned to the packet is set equal to the value of the *assignedCos* attribute of the parent *Policy* of the *TosMap* where the match occurred.

If one or more *IpAddrLayer4Flow* subcomponents exist under a *Policy* subcomponent of the *CosPolicyGroup* used by the *IpPort* where the packet was received, then the Class Of Service (CoS) assigned to the packet is updated according to these components if there is a match. This overrides any prior CoS assignment.

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2. DROP PRECEDENCE ASSIGNMENT

The packet is assigned a logical drop precedence value according to the *IngressCosTreatment* subcomponents of the *CosPolicyGroup* used by the *IpPort* where the packet was received. The drop precedence is obtained from *discardPriority* attribute of the *IngressCosTreatment* component whose instance value matches the Class Of Service (CoS) value currently assigned to the packet. If the selected *IngressCosTreatment discardPriority* attribute specifies ***low***, ***medium***, or ***high***, then a drop precedence is assigned accordingly. If the selected *IngressCosTreatment* specifies ***unchanged***, then the drop precedence assigned to the packet is not modified.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue, as explained in Step 6.

Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

3. SCHEDULING CLASS ASSIGNMENT

The packet is assigned a scheduling class value for eight, four, three, and two queues in the range from 0 to 7, 0 to 3, 0 to 2, and 0 to 1, respectively. These values are derived from the *emissionPriority* attribute of the *EgressCosTreatment* subcomponents of the *CosPolicyGroup* used by the *IpPort* where the packet is transmitted. The *emissionPriority* attribute of the *EgressCosTreatment* subcomponent whose instance value matches the Class Of Service (CoS) value assigned to the packet is used.

The *emissionPriority* attribute of the *EgressCosTreatment* component is mapped to scheduling classes according to the following table:

Emission	Scheduling Class			
Priority	8 Queues	4Queues	3Queues	2 Queues
1	5	3	2	1
2	4	2	1	0
3	2	1	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0

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Scheduling classes are assigned to a packet to control its scheduling behavior relative to other packets at the egress interface where the packets are transmitted, as explained in Step 6.

Generally, a numerically higher value of scheduling class (lower value of emission priority) indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value of scheduling class (higher value of emission priority) indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism and number of queues at the egress interface.

4. EGRESS DSCP MARKING

The DSCP field of the packet is marked according to the *EgressCosTreatment* subcomponents of the *CosPolicyGroup* used by the *IpPort* where the packet is transmitted. The DSCP value is obtained from *tos* attribute of the *EgressCosTreatment* component whose instance value matches the Class Of Service (CoS) value currently assigned to the packet. The new value of the DSCP field does not influence the forwarding behavior of the packet as it continues to be processed by the *VirtualRouter*, but it may have significance at the next hop.

5. MULTI-CONNECTION CONGESTION CONTROL

The CoS assigned to the packet is used to select one of up to four Layer 2 connections at the *IpPort* where the packet is transmitted. Per-packet selection of egress connections is supported only if these conditions are all true:

i) the egress media is *FrDte*, *AtmMpe*, *IpDlciGroup*, and
ii) more than one Layer 2 connection is configured to the next hop IP router, and
iii) each connection is provisioned with a different connection class.

Normally the packet is transmitted on the connection whose connection class is equal to the CoS assigned to the packet. If that connection does not exist, then the connection having the next lower connection class is used. If that connection does not exist also, then the connection having the next higher connection class is used.

For *AtmMpe* the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte* the connection class is specified by the *ipCoS* attribute of the *StaticDlci* and *DynamicDlciDef* subcomponents. For *IpDlciGroup* the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent.

If each Layer 2 connection is configured to provide different policing and scheduling characteristics, then the forwarding behaviors of IP packets are

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differentiated as they transit through the Layer 2 network. In general, the scheduling characteristics of the connections should be configured to be better for numerically greater connection class values. For example, if four *AtmConnection* components are associated with *AtmIf* components configured for ATM service classes ***UBR***, ***nrtVBR***, ***rtVBR***, and ***CBR***, then the *ipCos* attributes of the *AtmConnection* components should be either ***0***, ***1***, ***2*** and ***3***, respectively, or ***0***, ***1***, ***3*** and ***2*** respectively.

6. SINGLE-CONNECTION CONGESTION CONTROL

The drop precedence and scheduling classes assigned to the packet are used by the egress interface where the packet is transmitted, but only if the egress interface supports these parameters on a per-connection basis.

Multiple drop precedences are supported on GQM cards at *AtmMpe* interfaces. On FQM interfaces they are supported at Gigabit Ethernet interfaces. On PQC cards with AQM they are supported at *AtmMpe*, *FrDte*, *IpDlciGroup*, and Ethernet interfaces. On PQC cards with APC the drop precedence of a packet is controlled by the outgoing ATM CLP or Frame Relay DE bit which is determined by by the drop precedence of the PHB and the Layer 2 configuration. On CQC cards multiple drop precedences are supported at *AtmMpe* interfaces. On SBIC cards they are supported at PPP and *FrDte* interfaces.

Eight queues per connection are supported on FQM cards at Gigabit ethernet interfaces. Four queues per connection are supported on PQC cards at PPP interfaces, at *FrDte* interfaces provisioned with *DirectConnection*, and at *IpDlciGroup* and *IpoDlci* interfaces where FRF.12 is disabled on the DLCI. Two queues per connection are supported on SBIC cards at PPP and *FrDte* interfaces.

Only one queue per connection is supported on ATM interfaces. This implies that multi-connection congestion control must be used to provide sheduling differentiation at ATM interfaces.

LOCALLY GENERATED PACKETS

Ingress classification is not performed on packets generated locally at the *VirtualRouter*. For a locally generated packet that used for network control the assigned Class Of Service (CoS) value and the assigned drop precedence, is initialized to ***3*** and ***low*** respectively. For any other locally generated packet, these values are initialized to ***0*** and ***medium*** respectively.

For a locally generated ICMP echo request packet, the assigned CoS is overridden by the *-cos* option of the *Ping* command. For a locally generated ICMP echo reply packet, the assigned CoS is set equal to the assigned CoS of the received request packet.

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The DSCP field of locally generated packets that used for network control is always initialized to 48. The DSCP field of other packets is always initialized to 0. For a locally generated ICMP echo request packet, the initial value of the DSCP field is overridden by the *-tos* or *-dscp* option of the *Ping* command. For a locally generated ICMP echo reply packet, the DSCP field is set to the value contained in the IP header of the received request packet.

Locally generated IP multicast and IP broadcast packets are not subject to Multi-Connection Congestion Control as described above. Each of these packets is copied and transmitted individually on each of the available connections.

DEFAULT BEHAVIOR

The IP CoS behavior of any *IpPort* that does not use a *CosPolicyGroup* (by setting the *cosPolicyAssignment* attribute of the *Ip* or *IpPort* as explained above) is identical to an *IpPort* that uses the *CosPolicyGroup* described here: There are no *Policy* subcomponents. There are four *IngressCosTreatment* subcomponents with instance values ***0***, ***1***, ***2***, ***3*** where the *discardPriority* attribute of each instance is set to ***unchanged***. There are four *EgressCosTreatment* subcomponents with instance values ***0***, ***1***, ***2***, ***3*** where the *emissionPriority*, *setTosByte*, *tos*, and *tosMask* attributes of each instance are set to ***4***, ***no***, ***0***, and hexadecimal ***FC***, respectively.

EXCEPTIONS FOR GQM-BASED and FQM_BASED CARDS

The use of the *CosPolicyGroup* component at interfaces on a *VirtualRouter* that does not have a *DifferentiatedServicesDomain* subcomponent also applies as described above to Gigabit Ethernet on FQM-based cards and *AtmMpe* interfaces on GQM-based cards, with the following six exceptions:
1) The *TosMap* and *IpAddrLayer4Flow* components are always ignored at an ingress interface on one of these cards.
2) An IP packet received on a Gigabit Ethernet interface is always assigned ***high*** drop precedence.
3) An IP packet received on a ATM interface on one of these cards is always assigned ***unchanged*** drop precedence.
4) An IP packet received at an ingress interface on one of these cards is always assigned scheduling class 0.
5) An IP packet transmitted at egress Gigabit Ethernet interface is always assigned scheduling class ***0***.
6) An IP packet received at an ingress interface on one of these cards is

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is not eligible for egress DSCP marking at any interface.

Mib	IpCos
Opt. Subcomp.	COMPONENT Vr Ip Pg Policy COMPONENT Vr Ip Pg IngressCosTreatment (Ict) COMPONENT Vr Ip Pg EgressCosTreatment (Ect)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Pg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *CosPolicyGroup* component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg linkToPolicyUsers (users)

Access	Read and write
Description	This attribute specifies components that are linked to *CosPolicyGroup*. Only *Ip* and *IpPort* subcomponents of the same *VirtualRouter* can be linked. A *CosPolicyGroup* component is used by all *IpPort* subcomponents of a *VirtualRouter* by setting the *cosPolicyAssignment* attribute of the *Ip* component. It is used by one or more *IpPort* subcomponents directly by setting the *cosPolicyAssignment* attribute of the *IpPort*. The direct assignment to the *IpPort* completely overrides the assignment to the *Ip*.
Mib	IpCos
List of	Link (Service, cosPolicyAssignment)
List Size	256
Default	No default

COMPONENT Vr Ip Pg Policy

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip Pg Policy Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Pg/<string> Policy/<string>*

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The *Policy* component defines IP packet classification rules that are applied when the *CosPolicyGroup* is used by an *IpPort*. The classification rules are defined by two sets of parameters:

1. The criteria to select IP packets. These criteria are defined by the *TosMap* and *IpAddrLayer4Flow* subcomponents.

2. The IP Class of Service (CoS) assigned to a packet when the policy is applied. The CoS is specified by the *assignedCos* attribute.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

Mib	IpCos
Opt. Subcomp.	COMPONENT Vr Ip Pg Policy TosMap COMPONENT Vr Ip Pg Policy IpAddrLayer4Flow
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Pg Policy Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *Policy* component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy assignedCos (cos)

Access	Read and write
Description	This attribute specifies the Class of Service (CoS) assigned to an IP packet if the *Policy* applies. The assigned CoS controls the forwarding behavior and egress DSCP marking of the packet. See the description of the *CosPolicyGroup* component for more information.
Mib	IpCos
Values	Decimal (0..3)
Default	0

COMPONENT Vr Ip Pg Policy TosMap

Groups	GROUP Vr Ip Pg Policy TosMap Provisioned (Prov) GROUP Vr Ip Pg Policy TosMap Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Pg/<string> Policy/<string> TosMap*

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This component is used to specify Behavior Aggregate (BA) criteria for assigning Class of Service (CoS) values to IP packets.

An IP packet matches the criteria specified by this component if the Differentiated Services (DS) field in the packet header (also known as the ToS field) and any element in the list of values specified by the *tos* attribute of this component satisfies the following equation:

(DS field & *tosMask*) = (element & *tosMask*)

This formula states that the two values must be identical after each one is individually bit-wise ANDed with the value of *tosMask* attribute of the *EgressCosTreatment* component. In other words, the two values must be identical but only those bits that are set to 1 in the *tosMask* are inspected.

For example, to assign Class of Service (CoS) value 3 to IP packets that have the DSCP field marked for Expedited Forwarding (EF) when the *tosMask* is set to ***FC***, a *TosMap* subcomponent is added to the *Policy* component whose *assignedCos* attribute is set to ***3***, and the *tos* attribute of the *TosMap* is set to include hexadecimal value ***B8***.

See the description of the *CosPolicyGroup* component for more information.

Mib: IpCos

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Pg Policy TosMap **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains the provisioned attributes for the *TosMap* component.

Mib: IpCos

ATTRIBUTE Vr Ip Pg Policy TosMap **tos**

Access: Read and write

Description: This attribute specifies the list of byte values to be compared against the Differentiated Services (DS) field in the packet header (also known as the ToS field) for selecting IP packets. See the description of the *TosMap* component for more information.

This attribute must contain at least one value.

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Mib	IpCos
List of	Hex (H.0..H.ff)
List Size	256
Default	No default

GROUP Vr Ip Pg Policy TosMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *TosMap* and *IpAddrLayer4* components.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy TosMap cos

Access	Read only
Description	This attribute indicates the Class Of Service assigned to a packet when the Policy applies.The value of this attribute is equal to the *assignedCos* attribute of the *Policy* component.
Mib	IpCos
Values	Decimal (0..3)
Default	No default

COMPONENT Vr Ip Pg Policy IpAddrLayer4Flow

Instance	Decimal (0..1023)
Groups	GROUP Vr Ip Pg Policy IpAddrLayer4Flow Provisioned (Prov) GROUP Vr Ip Pg Policy IpAddrLayer4Flow ProtoProvisioned GROUP Vr Ip Pg Policy IpAddrLayer4Flow Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Pg/<string> Policy/<string> IpAddrLayer4Flow/n* The *IpAddrLayer4Flow* component is used to specify Multifield (MF) criteria for assigning Class of Service (CoS) values to IP packets. The IP packet is checked to see if it matches the criteria specified by each *IpAddrLayer4Flow* component, if any, under the *CosPolicyGroup* component. The CoS assigned to the packet is the value of the *assignedCos* attribute on the parent *Policy* component of the *IpAddrLayer4Flow* whose criteria best match the packet. For example, to assign Class of Service (CoS) value 1 to FTP packets destined to subnet 123.123.123.0, an *IpAddrLayer4Flow* subcomponent is added to the *Policy* component where the *assignedCos* attribute is set to ***1***. The *prefix, prefixLength, protocol,* and *portNumberRange* attributes of the *IpAddrLayer4Flow* component are set to ***123.123.123.0***, ***24***, ***tcp***, and

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20, ***21***, respectively. This criteria also applies to each FTP packet that originates from subnet 123.123.123.0, but only if the source address and port number of the packet do not match any *IpAddrLayer4Flow* subcomponents of the *CosPolicyGroup.*

Multifield classification overrides Behavior Aggregate (BA) classification. This means that BA classification, which is controlled by *TosMap* components, is performed only if the packet does not match any *IpAddrLayer4Flow* component.

The packet matching algorithm for MF classification is explained in more detail as follows.

A match can be found only if the IP header protocol field is one of ICMP, TCP, or UDP. The *prefix*, *prefixLength*, and *portNumberRange* attributes are checked only if the protocol field in the header is TCP or UDP.

The destination IP address and destination port number information from the packet is first compared against the *prefix* attribute in conjunction with the *prefixLength* and *portNumberRange* attributes. If the *prefixLength* is ***0*** and the *prefix* is ***0.0.0.0***, then any value in the packet's IP destination address fields is a match. If *portNumberRange* is ***0***, then any value in the packet's destination port number fields is a match.

If more than one *IpAddrLayer4Flow* component matches a packet (for instance one component specifies a range of IP addresses and a second specifies a single IP address in the range), then the component with the more precise match is used (the one which specifies the single address in this case). Precedence is always given to the IP address over the port number. For example, if one *IpAddrLayer4Flow* component specifies an range of IP addresses that includes the IP address from the packet and any port number, while a second *IpAddrLayer4Flow* component specifies an exact port number but a wider range of addresses, the first *IpAddrLayer4Flow* component is used.

If no match is found using the packet's destination IP address and destination port number information, then a second search is performed using the packet's source IP address and source port number information. This means that an *IpAddrLayer4Flow* component where the *protocol* is ***udp*** or ***tcp***, the *prefixLength* is ***0*** and the *portNumberRange* is ***0***, always matches some destination address and port number. This prevents the source address and port number check from being performed.

An ICMP packet matches any *IpAddrLayer4Flow* component whose *protocol* attribute is set to ***icmp***.

No attempt is made to match any packets where the options or fragment bits are set.

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See the description of the *CosPolicyGroup* component for more information.

Mib IpCos

Common Verbs
Help
List
Display
Add
DELete

GROUP Vr Ip Pg Policy IpAddrLayer4Flow Provisioned (Prov)

Properties Provisioned

Description This group contains the prefix and the prefix length procisioned attributes of the IpAddrLayer4Flow component.

Mib IpCos

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow prefix

Access Read and write

Description This attribute specifies the IP address prefix for selecting IP packets.Matching an IP address to the prefix is does in conjuction with the *prefixLength* attribute.If the values is ***0.0.0.0*** then the *prefixLength* attribute must be ***0***.
See the description of the *IpAddrLayer4Flow* component for more information.

Mib IpCos

Values IP address

Default 0.0.0.0

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow prefixLength

Access Read and write

Description This attribute specifies the number of most significant bits of an IP address to be matched with the prefix for selecting IP packets.
The *prefixLength* value ***0*** indicates any IP address.
See the description of the *IpAddrLayer4Flow* component for more information.

Mib IpCos

Values Decimal (0..32)

Default 0

GROUP Vr Ip Pg Policy IpAddrLayer4Flow ProtoProvisioned

Properties Provisioned

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Description	This group contains the protocol and portNumberRange provisioned attributes of the IpAddrLayer4FLow component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow **protocol (proto)**

Access	Read and write
Description	This attribute specifies the layer 2 (transport) protocol for selecting IP packets. If the value is icmp, then the prefixLength attribute must be 0, and the portNumberRange attribute must not be set. See the description of the IpAddrLayer4Flow component for more information.
Mib	IpCos
Values	icmp tcp udp
Default	tcp

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow **portNumberRange**

Access	Read and write
Description	This attribute specifies the TCP or UDP port number for selecting IP packets. A single value specifies a single port number.Two values specifies a range of port numbers.The order of the two values is irrelevant. See the description of the IpAddrLayer4Flow component for more information.
Mib	IpCos
List of	Decimal (0..65535)
List Size	2
Default	No default

GROUP Vr Ip Pg Policy IpAddrLayer4Flow **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *TosMap* and *IpAddrLayer4* components.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow **COS**

Access	Read only
Description	This attribute indicates the Class Of Service assigned to a packet when the Policy applies.The value of this attribute is equal to the *assignedCos* attribute of the *Policy* component.

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Mib	IpCos
Values	Decimal (0..3)
Default	No default

COMPONENT Vr Ip Pg IngressCosTreatment (Ict)

Instance	Decimal (0..3)
Groups	GROUP Vr Ip Pg Ict Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Pg/<string> IngressCosTreatment/n* A set of *IngressCosTreatment* components specifies a mapping between Class of Service (CoS) values and drop precedence values for controlling forwarding behaviors. This mapping is applied to packets received at any *IpPort* that uses the *CosPolicyGroup*. See the description of the *CosPolicyGroup* for more information. Four instances of this component, with instance values *0*, *1*, *2*, and *3*, are created automatically when the *CosPolicyGroup* component is added.
Mib	IpCos
Common Verbs	Help List Display Add

GROUP Vr Ip Pg Ict Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *IngressCosTreatment* component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Ict discardPriority (dp)

Access	Read and write
Description	This attribute specifies the drop precedence assigned to an IP packet when the Class of Service (CoS) assigned to the packet is equal to the instance value of the *IngressCosTreatment* component. Attribute values ***low***, ***medium***, and ***high*** indicate the packet is assigned drop precedence accordingly. A value of ***unchanged*** indicates the drop precedence assigned to the packet is not modified. It remains at the value provided by the ingress connection. A drop precedence is assigned to a packet to control its loss sensitivity

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relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

A warning is issued if the *discardPriority* attribute of one or more, but not all, of the *IngressCosTreatment* subcomponents the *CosPolicyGroup* is set to ***unchanged***.

Another warning is issued if the *discardPriority* attribute of two *IngressCosTreatment* subcomponents with the same instance value under any two *CosPolicyGroup* subcomponents of the *Vr Ip* are not equal. This applies only to those *IngressCosTreatment* subcomponents where the *discardPriority* attribute is not set to ***unchanged***. If this rule is violated, then the Class of Service (CoS) to drop precedence mapping will not be consistent at all *IpPorts* on the *Vr*.

See the description of the *CosPolicyGroup* for more information.

Mib	IpCos
Values	unchanged low medium high
Default	unchanged

COMPONENT Vr Ip Pg EgressCosTreatment (Ect)

Instance	Decimal (0..3)
Groups	GROUP Vr Ip Pg Ect Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Pg/<string> EgressCosTreatment/n*

A set of *EgressCosTreatment* components specifies two mappings. One is a mapping between Class of Service (CoS) values and logical scheduling class values for controlling forwarding behaviors. The other is a mapping between Class of Service (CoS) values and Differentiated Services Code Point (DSCP) values for egress marking. These mappings are applied to packets transmitted at any *IpPort* that uses the parent *CosPolicyGroup*. See the description of the *CosPolicyGroup* for more information.

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Four instances of this component, with instance values *0*, *1*, *2*, and *3*, are created automatically when the *CosPolicyGroup* component is added.

Mib — IpCos

Common Verbs — Help, List, Display, Add

GROUP Vr Ip Pg Ect Provisioned (Prov)

Properties — Provisioned

Description — This group contains the provisioned attributes of the *EgressCosTreatment* component.

Mib — IpCos

ATTRIBUTE Vr Ip Pg Ect setTosByte

Access — Read and write

Description — This attribute specifies whether the DSCP field of the packet should be marked at egress. If this attribute is set to ***yes*** and then the DSCP field is marked according to the values of the *tos* and *tosMask* attributes of the *EgressCosTreatment* component whose instance value is equal to the Class of Service (CoS) assigned to the packet.

A warning is issued if not all *EgressCosTreatment* subcomponents of the *CosPolicyGroup* have this attribute set to the same value.

Mib — IpCos

Values — no, yes

Default — no

ATTRIBUTE Vr Ip Pg Ect tos

Access — Read and write

Description — This attribute specifies the value used to mark the DSCP field of an IP packet at egress. This marking occurs only if the Class of Service (CoS) assigned to the packet is equal to the instance value of the *EgressCosTreatment* component and the *setTosByte* attribute is set to ***yes***.

Selected bits of the Differentiated Services (DS) field in IP packet header (also known as the ToS field) are updated according to the values of the *tos* and *tosMask* attributes using the following formula:

New value = (Original value & ~*tosMask*) | (*tos* & *tosMask*)

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This formula states that the bits of the DS field which are modified are only those which are set to 1 in the *tosMask* attribute value. Of those bits, the bits that are set to 1 are only those which are set to 1 in the *tos* attribute value; the others being modified are set to 0.

For example, to mark the DSCP field for Expedited Forwarding (EF):

original value: hex A0 (binary 10100000) CS5
tos attribute: hex B8 (binary 10111000)
tosMask attribute: hex FC (binary 11111100)
new value: hex B8 (binary 10111000) EF

Mib — IpCos

Values — Hex (H.0..H.ff)

Default — H.0

ATTRIBUTE Vr Ip Pg Ect **tosMask**

Access — Read and write

Description — This attribute specifies the bit mask used to mark the DSCP field of an IP packet. This marking occurs only if the Class of Service (CoS) assigned to the packet is equal to the instance value of the *EgressCosTreatment* component and the *setTosByte* attribute is set to ***yes***. This attribute also specifies which bits are examined when *TosMap* components are used for IP packet classification.

By default, this attribute is set to the value of hex ***FC*** to correspond to the six bits of the Differentiated Services Code Point (DSCP) field.

The *tosMask* attribute in all *EgressCosTreatment* components under the same *CosPolicyGroup* must be set to the same value.

A warning is issued if *tosMask* is set to any value other than ***0xFC.*** On PQC cards, any other value is ignored; in other words, any setting is treated as ***0xFC*** to match the six bits of DSCP field in the IP header. On SBIC cards, including the ILS forwarder, ToS field mapping and marking of IP packets will not exactly match the six bits of the DSCP field.

See the description of the *tos* attribute of the *EgressCosTreatment* component for more information.

Mib — IpCos

Values — Hex (H.1..H.ff)

Default — H.fc

ATTRIBUTE Vr Ip Pg Ect **emissionPriority (ep)**

Access — Read and write

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Description

This attribute specifies the logical scheduling classes to be assigned to an IP packet when the Class of Service (CoS) assigned to the packet is equal to the instance value of the *IngressCosTreatment* component.

The *emissionPriority* attribute is mapped to scheduling classes according to the following table:

Emission *Priority*	Logical Scheduling Class 8 Queues	4Queues 3	2 Queues
1	5	3	1
2	4	2	0
3	2	1	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0

Scheduling classes are assigned to a packet to control its scheduling behavior relative to other packets at the egress interface where the packets are transmitted.

Generally, a numerically higher value of scheduling class (lower value of emission priority) indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value of scheduling class (higher value of emission priority) indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism and number of queues at the egress interface.

A warning is issued if the *emissionPriority* attribute of two *EgressCosTreatment* subcomponents with the same instance value under any two *CosPolicyGroup* subcomponents of the *Vr Ip* are not equal. If this rule is violated, then the Class of Service (CoS) to *emissionPriority* mapping will not be consistent at all *IpPorts* on the *Vr*.

See the description of the *CosPolicyGroup* for more information.

Mib

IpCos

Values

Decimal (1..8)

Default

No default

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COMPONENT Vr Ip BorderGatewayProtocol (Bgp)

Groups	GROUP Vr Ip Bgp Provisioned (Prov) GROUP Vr Ip Bgp Operational (Oper) GROUP Vr Ip Bgp OsiState (State) GROUP Vr Ip Bgp AdministrativeControl (AdminControl) GROUP Vr Ip Bgp OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip BorderGatewayProtocol* *Rtr/<string> BorderGatewayProtocol* *Rtr/<string> Vrf/<string> BorderGatewayProtocol* This component is used to run the Border Gateway Protocol for IP.
Mib	Bgp
Opt. Subcomp.	COMPONENT Vr Ip Bgp ImportPolicy (Import) COMPONENT Vr Ip Bgp ExportPolicy (Export) COMPONENT Vr Ip Bgp As COMPONENT Vr Ip Bgp AggregatePolicy (Aggregate)
Dyn. Subcomp.	COMPONENT Vr Ip Bgp IndbEntry (Indb) COMPONENT Vr Ip Bgp LocaldbEntry (Localdb) COMPONENT Vr Ip Bgp OutdbEntry (Outdb) COMPONENT Vr Ip Bgp LocalVpn COMPONENT Vr Ip Bgp MBgpRibEntry (MBgpRib) COMPONENT Vr Ip Bgp MplsVpnRibEntry (MvRib) COMPONENT Vr Ip Bgp Ipv4LabelRibEntry (LRib)
Dyn. Subcomp.	COMPONENT Vr Ip Bgp Peer
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Bgp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Bgp* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp bgpIdentifier

Access	Read and write
Criticality	Component

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Description	This attribute specifies the *Bgp* Identifier of this *Bgp* component instance. It is picked from the IP address space, and should follow the same rule as choosing an unique IP address for *IpPort* or *Interface*.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp localAs

Access	Read and write
Criticality	Component
Description	This attribute specifies the autonomous system identifier for this *Bgp* component instance.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp defaultLocalPreference (locPrf)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default degree of preference for routes. It can be overridden by the *localPreference* provisioned in *ImportPolicy*. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	144

ATTRIBUTE Vr Ip Bgp defaultMultiExitDisc (med)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default metric to discriminate between multiple exit points to the same adjacent autonomous system. It can be overridden by the s*endMultiExitDiscToEbgp* provisioned in *ExportPolicy*. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	4294967294

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ATTRIBUTE Vr Ip Bgp routeThrottleLimit (rtl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of routes in the IP forwarding table this *Bgp* component instance will process at one time to decide if a route in the IP forwarding table should be exported to a peer. This limit is used because the throttling requirements are different under different network configurations.
Mib	Bgp
Values	Decimal (1..1000)
Default	250

ATTRIBUTE Vr Ip Bgp routeThrottleInter (rti)

Access	Read and write
Criticality	Component
Description	This attribute specifies the interval between the processing of the routes in the IP forwarding table to decide if a route in the IP forwarding table should be exported to a peer. This interval is used because the throttling requirements is different under different network configurations.
Mib	Bgp
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Vr Ip Bgp routeReflector (rr)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance is a Route Reflector. If the value of this attribute is ***true***, *Bgp* redistributes routes it learns from an IBGP speaker to other IBGP speakers in the AS. The rule of redistribution depends on the peer type: 1) When a route is learned from a non-client peer, it is redistributed to all the client peers within the cluster. 2) When a route is learned from a client peer, it is redistributed to all the non-client peers and also to the client peers. If the value of this attribute is ***false***, *Bgp* does not redistribute routes it learns from one IBGP speaker to other IBGP speakers in the AS.
Mib	Bgp
Values	true false

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Default	false

ATTRIBUTE Vr Ip Bgp routeReflectorCluster (rrCluster)

Access	Read and write
Criticality	Component
Description	This attribute identifies the cluster consisting of the Route Reflector and its peer clients. When *routeReflector* of *Bgp* is ***true***, value of 0.0.0.0 or 255.255.255.255 is invalid; the default value of this attribute is same as *bgpIdentifier*. For redundancy, a cluster may have more than one Route Reflector; in this case, the value of this attribute of all the Route Reflectors in the same cluster should be same. The value of this attribute is ignored when *routeReflector* of *Bgp* is ***false***
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp redistributeIgpToIbgp (rigp)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance allows exporting of IGP routes to internal Bgp peers. IGP routes include the routes learned from OSPF, RIP, local routes and static routes. If the value of this attribute is ***true***, and if *ExportPolicy* is specified to distribute, then *Bgp* allows IGP route to be distributed to internal Bgp peers. If the value of this attribute is ***false***, *Bgp* does not allow IGP routes to be distributed to internal *Bgp* peer, even if *ExportPolicy* is specified to distribute. This attribute is set to true if and only this Bgp is part of the Carrier Manage Service, otherwise, a routing loop may result.
Mib	Bgp
Values	true false
Default	false

ATTRIBUTE Vr Ip Bgp defaultIbgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for IBGP routes. It can be overridden by the *IbgpRtePreference* provisioned in *ImportPolicy*. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (1..253)

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Default	122

ATTRIBUTE Vr Ip Bgp defaultEbgpRtePreference (ebgpPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for EBGP routes. It can be overridden by the *ebgpRtePreference* provisioned in *ImportPolicy*. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (1..253)
Default	70

ATTRIBUTE Vr Ip Bgp vpnPeeringTopology (topology)

Access	Read and write
Description	Under the *Vr* component, this attribute specifies the peering mode that determines if a dynamic IBGP peer is to be instantiated between this *BGP* instance and a discovered IP Tunnel endpoint on the remote customer VR. This mode controls the distribution of IP routing information among VPN sites through dynamic BGP sessions after auto-discovery has taken place. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute. Under the *Rtr* or *Rtr Vrf* component, this attribute is not used.
Mib	Bgp
Values	none hub spoke
Default	No default

ATTRIBUTE Vr Ip Bgp alarmGeneration (alarms)

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Bgp* instance. A value of ***all*** specifies that all BGP alarms are made visible.

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A value of ***normal*** specifies that all BGP alarms are made visible, except for the following:
- *Bgp Peer* listening failure alarms,
- *Bgp Peer* connect failure alarms, and
- *Bgp* notification alarms.

Any listening failure or connect failure alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

A value of ***none*** specifies that no BGP alarms are made visible. Any listening failure, connect failure, or “no auto discovery” alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

Note that, because the listening failure, connect failure, and “no auto discovery” alarms are triggered by state changes in the *Peer* component, they are not automatically regenerated when previously disabled alarm generation is enabled. For example, consider the following:
- If the *Bgp alarmGeneration* attribute is set to ***all*** and a *Peer* enters a listening failure state, a listening failure alarm is set against that *Peer* subcomponent.
- If the *Bgp alarmGeneration* attribute is then set to ***normal*** or ***none***, the above listening failure alarm is cleared.
- If the *Bgp alarmGeneration* attribute is then set back to ***all***, no alarm is generated because the *Peer* subcomponent has not changed state.
- If the *Peer* then exits the listening failure state, a listening failure alarm clear is generated for the *Peer*, even though there is no alarm set for that component.

When the scope of alarm generation has been increased for a *Bgp* instance, previously existing alarms which had been suppressed can be regenerated by locking and unlocking the *Bgp Peer* subcomponents.

For a *VirtualRouter* with *vpnMode* attribute be set to ***carrier***, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *VirtualRouter* with the *vpnMode* attribute set to ***customer***, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Similarly, for a *Router* component, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *Router Vrf* component, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Mib	Bgp
Values	none normal all
Default	all

ATTRIBUTE Vr Ip Bgp keyTransitionDelay (keyDelay)

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Access	Read and write
Description	This attribute specifies a default delay period associated with a change of *md5Key* value event for the *Bgp* component. The *md5Key* is set under the *Bgp Peer Descriptor* component. This is the time that can elapse before the local router transitions to using the new key for transmission for all the Bgp Peer sessions' under this *Bgp* component. This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception. This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service. This can be overridden by the *keyTransitionDelay* provisioned under the *Bgp Peer Descriptor* component.
Mib	Bgp
Values	Decimal (1..20160)
Units	minutes
Default	10

ATTRIBUTE Vr Ip Bgp bgpImportRouteLimit (birl)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	Bgp
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Vr Ip Bgp bgpImportRouteDiscardLimit (bird)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	Bgp
Values	Decimal (0..4000000000)

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Default	0

GROUP Vr Ip Bgp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Bgp* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp tableVersion

Access	Read only
Description	This attribute indicates the version of the BGP routing table. It is incremented every time the BGP routing table changes. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp inMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages received without error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp inErrors

Access	Read only
Description	This attribute counts the total number of BGP messages received from all peers that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp inErrorMsgs

Access	Read only
Description	This attribute counts the total number of BGP NOTIFICATION messages from all the peers. This counter will wrap to zero once the value exceeds the maximum value.

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Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp outMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages sent to peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp outDiscards

Access	Read only
Description	This attribute counts the number of BGP messages that were locally generated but were not sent out due to resource limitations within a *Bgp* instance. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp outErrorMsgs

Access	Read only
Description	This attribute counts the BGP NOTIFICATION messages sent to the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp indbSize

Access	Read only
Description	This attribute indicates the number of *Bgp* indb entries under this *Bgp* component instance.
Mib	Bgp
Values	Decimal (0..4294967295)

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Default	0

GROUP Vr Ip Bgp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bgp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Bgp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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	with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bgp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Bgp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bgp
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Bgp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Bgp
Values	up down testing
Default	up

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GROUP Vr Ip Bgp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bgp
Values	up down testing
Default	up

COMPONENT Vr Ip Bgp Peer

Instance	IP address
Groups	GROUP Vr Ip Bgp Peer OsiState (State) GROUP Vr Ip Bgp Peer Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp Peer/<Ip Address>* *Rtr/<string> Bgp Peer/<Ip Address>* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address>* This component identifies the properties of a BGP peer. The index value of this entry identifies the IP address of that peer. This component is required for BGP to set up a peer session with a

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remote peer. Peers with discovered IP address are dynamic peers, where the provisioned ones are static peers.

Mib	Bgp
Opt. Subcomp.	COMPONENT Vr Ip Bgp Peer Descriptor (Desc)
Dyn. Subcomp.	COMPONENT Vr Ip Bgp Peer Vpn
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Bgp Peer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Peer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bgp

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Bgp Peer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bgp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Bgp Peer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bgp
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Bgp Peer Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Peer* component.
Mib	Bgp

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ATTRIBUTE Vr Ip Bgp Peer **connectionState**

Access	Read only
Description	This attribute indicates the current state of this BGP peer connection. The meaning of each state is as follows: ***idle*** - it is the initial state of the BGP peer connection. Error events will also cause BGP peer connection to transit to the idle state. ***connect*** - BGP has initiated a TCP connection request to this peer, and waiting for reply from that peer. ***active*** - BGP is not initiating a TCP connection request to this peer, because TCP connection failed and is waiting for connection retry time-out. ***openSent*** - a TCP connection to this peer has been established, but the OPEN message has not been successfully exchanged. ***openConfirm*** - OPEN message has been successfully exchanged with this peer, but the first KEEPALIVE message has not been received from that peer. ***established -*** the first KEEPALIVE message has been received from this peer, which means this BGP peer connection has been established. See RFC 1771 for a detailed description of BGP state transitions.
Mib	Bgp
Values	idle connect active openSent openConfirm established
Default	idle

ATTRIBUTE Vr Ip Bgp Peer **bgpIdentifier (bgpId)**

Access	Read only
Description	This attribute indicates the BGP Identifier of this *Bgp Peer* component. It is learned from the peer through the OPEN message.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Peer **versionNegotiated (vn)**

Access	Read only
Description	This attribute indicates the BGP version number negotiated with this peer through the OPEN message. Currently, only BGP version 4 is supported. BGP will reject the peer connection if our peer proposes a BGP version other than 4.
Mib	Bgp

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Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer holdTimeNegotiated (htn)

Access	Read only
Description	This attribute indicates the maximum time in seconds, that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. This is the negotiated value with peer through the OPEN message. The hold time must be either zero or at least three seconds. If the negotiated hold time is zero, then periodic KEEPALIVE messages are not expected from the peer.
Mib	Bgp
Values	Decimal (0; 3..65535)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Bgp Peer keepAliveNegotiated (kan)

Access	Read only
Description	This attribute indicates the interval in seconds, between BGP KEEPALIVE message retransmissions. This keepalive interval will have the same ratio to the hold time negotiated with the peer as that of the locally configured keepalive and hold time. This attribute will be zero if the *holdTimeNegotiated* attribute is zero, which means periodic KEEPALIVE messages will not be sent.
Mib	Bgp
Values	Decimal (0..21845)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Bgp Peer localAddressUsed (lau)

Access	Read only
Description	This attribute indicates the local IP address used for this BGP peer connection. If the *localAddressConfigured* attribute is non-zero, its value will be used. Otherwise, the local address will be assigned by TCP based on the remote IP address of this peer connection and the IP forwarding table.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Peer localPort

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Access	Read only
Description	This attribute indicates the local TCP port for the connection between the BGP peers.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer remotePort

Access	Read only
Description	This attribute indicates the remote TCP port for the connection between the BGP peers.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer lastError

Access	Read only
Description	This attribute indicates the last error code and subcode seen by this *Bgp* component instance on this peer connection. The first byte of this two byte OCTET STRING contains the error code, and the second byte contains the subcode. A value of zero means that no error has occurred. Check RFC 1771 for mappings of error codes and error subcodes.
Mib	Bgp
Values	String (2, Hex)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer connectionEstablishedTime (ceTime)

Access	Read only
Description	This attribute indicates how long since this *Peer* component's last transition to or from the ***established*** state. It is set to zero when the *Peer* component is activated.
Mib	Bgp
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Ip Bgp Peer connectionEstablishedTransitions (ceTrans)

Access	Read only

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Description	This attribute counts the total number of times the BGP connection state transitioned into the ***established*** state.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inUpdateElapsedTime (iuet)

Access	Read only
Description	This attribute indicates the elapsed time in seconds since the last BGP UPDATE message was received from the peer. Each time *inUpdates* attribute is incremented, the value of this attribute is set to zero.
Mib	Bgp
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Bgp Peer inMsgs

Access	Read only
Description	This attribute counts the number of BGP messages received without error from the BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages received on this peer connection. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inErrors

Access	Read only
Description	This attribute counts the number of messages received from this BGP peer that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.

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Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages received from this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer outMsgs

Access	Read only
Description	This attribute counts the number of locally generated BGP messages sent to this BGP peer. It does not include discarded messages. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer outUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages sent to this peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer outDiscards

Access	Read only
Description	This attribute counts the number of locally generated BGP messages not sent to this BGP peer due to resource limitations within a BGP entity. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Ip Bgp Peer **outErrorMsgs**

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages sent to this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer **inRoutes**

Access	Read only
Description	This attribute indicates the number of routes received from this BGP peer.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer **peerType**

Access	Read only
Description	This attribute indicates the way this peer is created. Peer is **static,** if created through provisioning or **dynamic,** if created through IP VPN auto discovery. For *Router* and *Vrf*, all peers are statically created. So, this value will always be ***static***.
Mib	Bgp
Values	static dynamic
Default	No default

ATTRIBUTE Vr Ip Bgp Peer **authenticationType**

Access	Read only
Description	This attribute indicates the authentication type of this BGP peer. If the *md5Key* attribute under the *Bgp Peer Desc* component is set to a null string, this peer's authentication type is ***none***; otherwise, if the *md5Key* attribute is set to a valid non-null string, this peer's authentication type is ***md5***.

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If this BGP peer's *peerType* is ***dynamic***, its authentication type is always ***none***.

Mib — Bgp

Values — none
md5

Default — No default

ATTRIBUTE Vr Ip Bgp Peer noAuthenticationPkts

Access — Read only

Description — This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which do not contain the MD5 authentication information, but MD5 authentication is provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a valid non-null string, but the remote BGP peer does not use MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.

Mib — Bgp

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Vr Ip Bgp Peer badAuthenticationPkts

Access — Read only

Description — This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which fail the MD5 authentication. This type of authentication failure occurs when the *md5Key* attribute set under the local *Bgp Peer Desc* component does not match the MD5 key used by the remote BGP peer, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.

Mib — Bgp

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Vr Ip Bgp Peer unexpectedAuthenticationPkts

Access — Read only

Description — This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which contain the MD5 authentication information, but MD5 authentication is not provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a null

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string, but the remote BGP peer uses MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.

Mib: Bgp

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Vr Ip Bgp Peer addressFamilyNegotiated (afn)

Access: Read only

Description: The attribute indicates the list of multi-protocol extensions negotiated on this peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI).

To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamilyNegotated* list of the peer instance.

ipv4Unicast represents AFI = 1 and SAFI = 1
ipv4Vpn represents AFI = 1 and SAFI = 140 (not for RFC 2547)
mbgpVpn represents AFI = 1 and SAFI = 141 (not for RFC 2547)
ipv4MplsVpn represents AFI = 1 and SAFI = 128
ipv4Label represents AFI = 1 and SAFI = 4

Mib: Bgp

List of:
ipv4Unicast
ipv4Vpn
mbgpVpn
ipv4MplsVpn
ipv4Label

Default: No default

ATTRIBUTE Vr Ip Bgp Peer capabilityNegotiated (cn)

Access: Read only

Description: The attribute indicates the list of capabilities negotiated on this peer session.

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Mib	Bgp
List of	mpExtensions routeRefresh cooperativeRouteFiltering
Default	No default

COMPONENT Vr Ip Bgp Peer Descriptor (Desc)

Groups	GROUP Vr Ip Bgp Peer Desc Provisioned (Prov)
Scope	Network
Description	*Vr/<string> Ip Bgp Peer/<Ip Address> Desc* *Rtr/<string> Bgp Peer/<Ip Address> Desc* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address> Desc* This component contains provisioned attributes for BGP peers. Provisioned attributes are only used when the peer is a statically provisioned peer.
Mib	Bgp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Bgp Peer Desc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisional attributes for this BGP *Peer* component
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Peer Desc peerAs

Access	Read and write
Description	This attribute specifies the autonomous system identifier of this BGP *Peer* component. It is used to verify the autonomous system identifier learned from the peer through the OPEN message. The peer connection is rejected and a NOTIFICATION message is sent to the peer if these two numbers don't match.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Peer Desc localAddressConfigured (lac)

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Access	Read and write
Description	This attribute specifies the local IP address configured for this *Bgp Peer* connection. If this attribute is 0.0.0.0, TCP chooses a local IP interface based on the remote IP address of this peer connection and the IP forwarding table. The value chosen is stored in the *localAddressUsed* attribute under the same *Peer* component.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Peer Desc keepAliveConfigured (kac)

Access	Read and write
Description	This attribute specifies the configured interval between BGP KEEPALIVE message retransmissions. It is used to establish the ratio between keepalive interval and hold time. If this attribute is zero, then the *holdTimeConfigured* attribute must be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	Bgp
Values	Decimal (0..21845)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Bgp Peer Desc holdTimeConfigured (htc)

Access	Read and write
Description	This attribute specifies the maximum time that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. The hold time must be either zero or at least three seconds. If this attribute is zero, then the *keepAliveConfigured* attribute should also be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	Bgp
Values	Decimal (0; 3..65535)
Units	seconds
Default	90

ATTRIBUTE Vr Ip Bgp Peer Desc connectRetryTime (connectRetry)

Access	Read and write
Description	This attribute specifies the time interval for the ConnectRetry timer. It is the minimum amount of time that must elapse between successive TCP connection retries for establishing BGP peer connection.

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Mib	Bgp
Values	Decimal (1..65535)
Units	seconds
Default	120

ATTRIBUTE Vr Ip Bgp Peer Desc minAsOrigTime (minAsOrig)

Access	Read and write
Description	This attribute specifies the time interval for the MinAsOriginationInterval timer. It is the minimum amount of time that must elapse between updates that advertise a change to a route within the local autonomous system to neighboring autonomous systems.
Mib	Bgp
Values	Decimal (1..65535)
Units	seconds
Default	15

ATTRIBUTE Vr Ip Bgp Peer Desc minRouteAdvTime (minRouteAdv)

Access	Read and write
Description	This attribute specifies the time interval for the MinRouteAdvertisementInterval timer. Feasible routes received from peers in other autonomous systems may only be re-advertised to peers in other autonomous systems at a rate no greater than MinRouteAdvertisementInterval.
Mib	Bgp
Values	Decimal (1..65535)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Bgp Peer Desc defaultInAggMed (diaMed)

Access	Read and write
Description	This attribute specifies this *Bgp Peer* component instance's metric for generating a dynamic default route whenever this external BGP peer got established. It is used to prioritize between the dynamic default routes generated by BGP speakers. If this attribute is not set, BGP does not generate a dynamic default route. When this attribute is set, BGP automatically generates a dynamic default route when the connection established.
Mib	Bgp
Values	Decimal (0..4294967295)

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Default	4294967295

ATTRIBUTE Vr Ip Bgp Peer Desc **isRouteReflectorClient (isRrClient)**

Access	Read and write
Description	This attribute specifies whether the peer is a client peer or non-client peer of this *Bgp* instance. The attribute is ignored unless the value of the '*routeReflector'* attribute of the '*Bgp'* component is set to ***true***.
Mib	Bgp
Values	true false
Default	false

ATTRIBUTE Vr Ip Bgp Peer Desc **removePrivateAs (remPrivate)**

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is enabled, then BGP will remove private AS numbers from the AS_PATH. This attribute is meaningful only for external peers.
Mib	Bgp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Bgp Peer Desc **nextHopSelf (nhs)**

Access	Read and write
Description	This attribute controls the setting of the NEXT_HOP path attribute in routes advertised to the peer. If this attribute is enabled, BGP will advertise itself as the NEXT_HOP. This is useful when routes are propagated from an EBGP peer to an IBGP peer: the IBGP peer does not need to have a route to the EBGP peer.
Mib	Bgp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Bgp Peer Desc **md5Key**

Access	Write only
Description	This attribute specifies this *Bgp Peer* component instance's MD5 key value that is used by the MD5 authentication on this BGP Peer session's underlying TCP connection.

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A null string indicates that the MD5 authentication is not to be used on the TCP connection to this Bgp Peer session.

Mib: Bgp

Values: String (0..255, ASCII)

Default: No default

ATTRIBUTE Vr Ip Bgp Peer Desc keyTransitionDelay (keyDelay)

Access: Read and write

Description: This attribute specifies a delay period associated with a change of *md5Key* value event of the *Peer* component.

This is the time that can elapse before the local router transitions to using the new key for transmission for this Bgp Peer session.This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception.

This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service.

If ***sameAsBgp*** is specified, the value of *keyTransitionDelay* set under the parent *Bgp* component is used. Otherwise the value of this attribute will be used**.** The default is to use ***sameAsBgp***.

Mib: Bgp

Values: Decimal (1..20160)
sameAsBgp

Units: minutes

Default: sameAsBgp

ATTRIBUTE Vr Ip Bgp Peer Desc multiHopEbgp (mhEbgp)

Access: Read and write

Description: This attribute specifies whether MultiHop EBGP (External BGP) route distribution is supported on this EBGP peer. MultiHop EBGP allows routes to be distributed between EBGP peers that are not directly connected and can span multiple hops

Mib: Bgp

Values: enabled
disabled

Default: disabled

ATTRIBUTE Vr Ip Bgp Peer Desc asPathCheck

Access: Read and write

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Description	This attribute specifies the treatment of the AS_PATH loop detection mechanism in routes received from the peer. If this attribute is set to ***disabled***, AS_PATH loop is not detected. If this attribute is set to ***enabled***, AS_PATH loop is detected.
Mib	Bgp
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Ip Bgp Peer Desc **attachSiteOfOrigin (attachSoo)**

Access	Read and write
Description	This attribute specifies the site of origin identifier to attach for this BGP Peer connection. If this attribute is set, a site of origin extended community path attribute is attached to the routes received from this peer unless the site of origin extended community path attribute is already included in the routes.
Mib	Bgp
Values	String (0..21, RFC2547RdRtSyntax)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Desc **checkSiteOfOrigin (checkSoo)**

Access	Read and write
Description	This attribute specifies the site of origin identifiers to check for this BGP Peer connection. If this attribute is set, a check is done when routes are received from this peer or advertised to this peer. If the site of origin extended community path attribute presents in received routes and matches any Site Of Origin in this attribute, the routes are not accepted. If the site of origin extended community path attribute presents in the advertised routes and matches any SOO in this attribute, the routes are not advertised to this peer. If this attribute is not set, no check and filtering is done.
Mib	Bgp
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Desc **bgpPeerRouteLimit (bprl)**

Access	Read and write
Criticality	Component

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Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	Bgp
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Vr Ip Bgp Peer Desc **bgpPeerRouteDiscard (bprd)**

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	Bgp
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Vr Ip Bgp Peer Desc **asOverride (asOr)**

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is ***enabled,*** then BGP will override all the AS numbers in the AS_PATH list, that match the AS number of the peer that we are sending to, with the local AS number. This attribute is meaningful only for external peers. This attribute is available for the *Bgp Peer Desc* component under the *Vr Ip*, *Vrf* and *Rtr* components. However, if it is set to ***enabled*** under the *Rtr Bgp Peer Desc* component, it has no impact. The behaviour is ***disabled*** regardless of the provisioned value in this case.
Mib	Bgp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Bgp Peer Desc **addressFamily**

Access	Read and write
Description	The attribute specifies the supported network layer protocols being carried in any BGP-4 UPDATE messages over this Peer session. It consists of

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both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI).

To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be added to this attribute on all VCGs' peer instances.

To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamily* list of all the VCGs' Peer instances.

To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamily* list of all the VCGs' peer instances.

To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamily* list of the peer instance.

ipv4Unicast represents AFI = 1 and SAFI = 1
ipv4Vpn represents AFI = 1 and SAFI = 140 (not for RFC 2547)
mbgpVpn represents AFI = 1 and SAFI = 141 (not for RFC 2547)
ipv4MplsVpn represents AFI = 1 and SAFI = 128
ipv4Label represents AFI=1 and SAFI=4

Mib	Bgp
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	(ipv4Unicast)

COMPONENT Vr Ip Bgp Peer Vpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> This component contains all VPN information that is learned by this BGP peer instance.
Mib	Bgp
Dyn. Subcomp.	COMPONENT Vr Ip Bgp Peer Vpn Ipv4
Common Verbs	Help List Display

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COMPONENT Vr Ip Bgp Peer Vpn Ipv4

Instance	IP address
Groups	GROUP Vr Ip Bgp Peer Vpn Ipv4 Operational (Oper)
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP peer for the specified VPN.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp Peer Vpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments through which the IP VPN information arrives. The AS Path lists the ASs in reverse traversal order from the point of origin. This attribute is not applicable and is not displayed for locally -learned IP VPN information.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 vpnPeeringTopology

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Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.
Mib	Bgp
Values	none hub spoke
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 **asOriginatorId**

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of this IP VPN information in the local AS. When the Route Reflector in the backbone distributes a discovered VPN information to other IBGP speakers, the value of this attribute in the discovered VPN information is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 **redundant**

Access	Read only
Description	This attribute indicates that the IP VPN information entry learned from more than one BGP peers in the carrier backbone. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	Bgp

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Values	no yes
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 rrClusterList

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the sequence of cluster-ids that this discovered IP VPN information has traversed. When the Route Reflector in the backbone reflects a discovered VPN information to other non-client IBGP peers, the cluster ID of the Route Reflector is added to the cluster list of the received VPN information. A blank list indicates this attribute is not present in the received VPN information or if this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	Bgp
List of	IP address
List Size	256
Default	No default

COMPONENT Vr Ip Bgp ImportPolicy (Import)

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Bgp Import Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n* *Rtr/<string> Bgp Import/n* *Rtr/<string> Vrf/<string> Bgp Import/n* Each instance of this component describes a BGP import policy. A BGP import policy is used to decide if certain routing information learned from its peer is to be ignored or used. If no import policy is provisioned, BGP will accept all routes received from its IBGP peers, but will not use any routing information received from its EBGP peers. If multiple import policies are provisioned, the one with the most specific match will apply. The keys are matched in the following order from the least specified to the most specified: *Network*, *peerAs*, *peerIpAddress*, *originAs*, *originProtocol*,

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matchAsPath,
matchCommunity.

Example1:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, originAs = ***20***, usageFlag = ***use***
vr/0 ip bgp import/2, originProtocol = ***igp***, usageFlag = ***ignore***
If a BGP NLRI contains a route originally learned from an igp with origin AS 20, it will be used.
Example2:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, matchAsPath = ***"1 2 3"***, usageFlag = ***ignore***
vr/0 ip bgp import/2, originProtocol = ***any***, usageFlag = use
If a BGP NLRI contains a route originally learned from an igp with the AsPath "1 2 3 4", it will be ignored.

For Router and Vrf, the example is similar with 'Vr/0 Ip' replaced with 'Router/0' and 'Router/0 Vrf/1' respectively.

Mib	Bgp
Opt. Subcomp.	COMPONENT Vr Ip Bgp Import Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Bgp Import Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes for the *Import* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Import peerAs

Access	Read and write
Description	This key attribute specifies the autonomous system number of the peer from which the routes are learned. A value of 0 for this attribute means that peer AS number will match any AS number.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Import peerIpAddress

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Access	Read and write
Description	This key attribute specifies the IP address of the peer from which the routes are learned. A value of 0.0.0.0 for this attribute means that peer IP address will match any IP address.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Import **originAs**

Access	Read and write
Description	This key attribute specifies the autonomous system number where the routes were originated. A value of 0 for this attribute means origin AS number will match any AS number.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Import **originProtocol**

Access	Read and write
Description	This key attribute specifies the protocols that originated the routes. A value of ***incomplete*** for this attribute means this information is not available.
Mib	Bgp
Values	any igp egp incomplete
Default	any

ATTRIBUTE Vr Ip Bgp Import **usageFlag (usage)**

Access	Read and write
Description	This attribute specifies whether BGP will use or ignore information in received update if it meets criteria specified by the key attributes of this component.
Mib	Bgp
Values	use ignore
Default	use

ATTRIBUTE Vr Ip Bgp Import **localPreference (locPrf)**

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Access	Read and write
Description	This attribute specifies this *Bgp* component instance's degree of preference for those routes that match the criteria of this import policy. A higher value indicates a more preferred route. A value of 0 for this attribute means that the default local preference value provisioned under the *Bgp* component should be used.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Import asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the received update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters has the special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. 'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. '[n1... n2]' - Matches any AS number that appeared in the set n1... n2. 'n1 - n2' - Matches any AS number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a AS set, range or number. The following logical operators are evaluated in descending order: 'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x. 'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y. 'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y. For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be

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match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Import communityExpression (comExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute. The following characters have a special meaning: '[n1... n2]' - Matches any Community number that appeared in the set n1...n2. 'n1 - n2' - Matches any Community number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in descending order: 'NOT' - Given a regular expression x, NOT x matches the Community attribute that is not matched by x. 'AND'- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y. 'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y. For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression: ***1,*** ***5,*** ***4 3,*** ***2 3 - 4*,***

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1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Import expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity*. This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two import policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	Bgp
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip Bgp Import appendCommunity (appCom)

Access	Read and write
Description	This attribute indicates which community number this import policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is appended to the Community attribute.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Import ibgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of IBGP routes matching this import policy. A lower value means the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultIbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	Bgp
Values	Decimal (1..253) sameAsBgp

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Default	sameAsBgp

ATTRIBUTE Vr Ip Bgp Import ebgpRtePreference (ebgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of EBGP routes matching this import policy. A lower value specifies the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultEbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	Bgp
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Vr Ip Bgp Import addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this import policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (Not for RFC 2547) ***all***
Mib	Bgp
Values	all ipv4Unicast mbgpVpn ipv4Label
Default	all

ATTRIBUTE Vr Ip Bgp Import description (desc)

Access	Read and write
Description	This attribute specifies the policy. For example, ‘to import BGP routes from AS 1’.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Bgp Import Network (Net)

Instance	Decimal (0..65535)

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Groups	GROUP Vr Ip Bgp Import Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n Network/n* *Rtr/<string> Bgp Import/n Network/n* *Rtr/<string> Vrf/<string> Bgp Import/n Network/n* This is an optional subcomponent of *Import* component and identifies destination networks that this BGP import policy applies to. This component is used as a key for the import policy. If no network list is provisioned, the import policy applies to all networks.
Mib	Bgp
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Bgp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Import Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Import Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	Bgp
Values	Decimal (1..32)
Units	bits
Default	No default

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COMPONENT Vr Ip Bgp ExportPolicy (Export)

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Bgp Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n* *Rtr/<string> Bgp Export/n* *Rtr/<string> Vrf/<string> Bgp Export/n* Each instance of this component describes a BGP export policy. A BGP export policy is used to decide if certain routing information should be blocked or advertised to its peers. If no export policy is provisioned, BGP will advertise all external BGP learned routes to its internal peers, but not advertise any routing information to its external peers. If multiple export policies are provisioned, the one with the most specific match will apply. The keys are matched in the following order from the least specified to the most specified: *peerAs*, *peerIpAddress*, *protocol,* *ripInterface* (if applicable), *egpAs, bgpAs, ripNeighbour*, or *ospfTag* (whichever is applicable), *Network,* *matchAsPath,* *matchCommunity.* Example1: (for Router and Vrf, the examples are similar by replacing ‘vr/0 ip’ with ‘Router/a’ and ‘Router/a Vrf/b’ respectively) There are 2 export policies defined: vr/0 ip bgp export/1, protocol = ***all***, advertiseStatus = ***send*** vr/0 ip bgp export/2, protocol = ***rip***, advertiseStatus = ***block*** BGP will generate BGP updates for all routes except the routes learned from RIP. Example2: There are 2 export policies defined: vr/0 ip bgp export/1, protocol = all, matchCommunity = ***303***, advertiseStatus = ***send*** vr/0 ip bgp export/2, protocol = ***all***, advertiseStatus = ***block***

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BGP will generate BGP updates for all routes that belongs to Community 303.

Mib — Bgp

Opt. Subcomp. — COMPONENT Vr Ip Bgp Export Network (Net)

Common Verbs — Help, List, Display, Add, DELete

GROUP Vr Ip Bgp Export Provisioned (Prov)

Properties — Provisioned

Description — This group contains all the provisioned attributes for the *Export* component.

Mib — Bgp

ATTRIBUTE Vr Ip Bgp Export peerAs

Access — Read and write

Description — This key attribute specifies the autonomous system number of the peer where the routes are advertised to. A value of 0 for this attribute means this export policy applies to all peer ASes.

Mib — Bgp

Values — Decimal (0..65535)

Default — 0

ATTRIBUTE Vr Ip Bgp Export peerIpAddress

Access — Read and write

Description — This key attribute specifies the IP address of the peer where the routes are advertised to. A value of 0.0.0.0 for this attribute means this export policy applies to all peers. This key attribute is used in export policies for AFI/SAFI = 1/128 only if the *addressFamily* attribute is set to ***ipv4MplsVpn***.

Mib — Bgp

Values — IP address

Default — 0.0.0.0

ATTRIBUTE Vr Ip Bgp Export protocol

Access — Read and write

Description — This key attribute specifies which protocol the export policy applies to. If it is set to ***all***, that means this export policy will apply all routes in the IP routing table.

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	Example: vr/1 ip ospf export/1 with advertise Status = block protocol = bgpExternal bgpAsId = 3 peerAs = 5 This policy specifies that all routes learned from EBGP Peers that are originated from AS 3 should not be advertised to AS 5.
Mib	Bgp
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal bgpAggregate mbgp bgpMplsInternal
Default	all

ATTRIBUTE Vr Ip Bgp Export **egpAsId (egpAs)**

Access	Read and write
Description	This key attribute specifies the EGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to ***egp***.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Export **bgpAsId (bgpAs)**

Access	Read and write
Description	This key attribute specifies the BGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to either ***bgpInternal*** or ***bgpExternal***.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Export **ospfTag**

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Access	Read and write
Description	This key attribute specifies the OSPF tag when the *protocol* attribute is set to either ***ospfInternal*** or ***ospfExternal***. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag not specified.
Mib	Bgp
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Vr Ip Bgp Export ripInterface (ripIf)

Access	Read and write
Description	This key attribute specifies the local RIP interface where the routes are learned from. The *ripInterface* attribute when non-zero should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or the IP address of an *Interface* component. Otherwise, this policy will be ignored. The value of the *protocol* attribute must be set to ***rip*** if a value for the *ripInterface* attribute is non-zero.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This key attribute specifies the RIP neighbor where the routes were learned from. The value of the *protocol* attribute must be set to ***rip*** if the *ripNeighbor* attribute is non-zero.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether data will be exported if it meets criteria specified by the other key attributes of this component.
Mib	Bgp
Values	send block
Default	send

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ATTRIBUTE Vr Ip Bgp Export **multiExitDisc (med)**

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's metric to discriminate between multiple exit points to an adjacent autonomous system if the route meets the criteria specified by the key attributes of this component. A lower value indicates a more preferred route. A value of 0 for this attribute means the default MED value provisioned under the *Bgp* component should be used.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Export **sendMultiExitDiscToEbgp (sendMed)**

Access	Read and write
Description	This attribute specifies whether the Multi Exit Discriminator (MED) attribute should be included in an update message sent to an EBGP peer.
Mib	Bgp
Values	false true
Default	false

ATTRIBUTE Vr Ip Bgp Export **asPathExpression (asExpr)**

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the export update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters have a special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. 'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. '[n1... n2]' - Matches any AS number that appeared in the set n1... n2. 'n1 - n2' - Matches any AS number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a

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set, range or AS number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Export communityExpression (comExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute. The following characters have a special meaning: '[n1... n2]' - Matches any Community number that appeared in the set n1...n2. 'n1 - n2' - Matches any Community number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in descending order: 'NOT' - Given a regular expression x, NOT x matches the

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Community attribute that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y.
For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Export expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity*. This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two export policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	Bgp
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip Bgp Export sendCommunity (sendCom)

Access	Read and write
Description	This attribute indicates which community number this export policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is added to the Community attribute.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ip Bgp Export localPreference (locPrf)

Access	Read and write
Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes sent to internal peers. A value of 0 means that the value specified in the import policy (if any) or the default local preference value should be used.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Export virtualPrivateNetworkIdentifier (vpnId)

Access	Read and write
Description	This attribute specifies the Virtual Private Network (VPN) identifier of the routes this export policy should apply to. This attribute is only used if *addressFamily* has included ***mbgpVpn***. The value “00-00-00-00-00-00-00” identifies an unspecified VPN ID, meaning the VPN ID will not be used as a matching criteria in this export policy.
Mib	Bgp
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Vr Ip Bgp Export addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this export policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). An export policy is applied for AFI/SAFI = 1/128 only when this attribute is set to ***ipv4MplsVpn***. In this case only *peerIpAddress*, *routeTarget*, and *advertiseStatus* attributes and *Network* component and its related attributes are used for export policies. It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***all***
Mib	Bgp
Values	all ipv4Unicast mbgpVpn ipv4MplsVpn

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Default	all

ATTRIBUTE Vr Ip Bgp Export **description (desc)**

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export BGP routes to MCI’.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Export **insertDummyAs (insertAs)**

Access	Read and write
Description	This attribute specifies the AS number(s) to be inserted into the AS Path Attribute. The value is a sequence of AS number separated by period(.). For example, if the value is ***20.20.30***, the AS numbers 20, 20 and 30 would be inserted at the end of the AS Path Attribute just before the local AS number.
Mib	Bgp
Values	Integer Sequence
Default	No default

ATTRIBUTE Vr Ip Bgp Export **routeTarget (rt)**

Access	Read and write
Description	This attribute specifies the Route Target of the routes this export policy should apply to.
Mib	Bgp
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

COMPONENT Vr Ip Bgp Export **Network (Net)**

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip Bgp Export Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n Network/n* *Rtr/<string> Bgp Export/n Network/n* *Rtr/<string> Vrf/<string> Export/n Network/n* This is an optional subcomponent of the *Export* component and identifies a destination network that this BGP export policy will apply to. This

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component is used as a key for the export policy. If no network list is provisioned, the export policy applies to all networks. This component and its associated attributes are applied in an export policy for AFI/SAFI = 1/128 only if *addressFamily* attribute is set to ***ipv4MplsVpn***.

Mib: Bgp

Common Verbs: Help, List, Display, Add, DELete

GROUP Vr Ip Bgp Export Net **Provisioned (Prov)**

Properties: Provisioned

Description: This group contains the set of provisionable attributes for the *Network* component.

Mib: Bgp

ATTRIBUTE Vr Ip Bgp Export Net **prefix**

Access: Read and write

Description: This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.

Mib: Bgp

Values: IP address

Default: No default

ATTRIBUTE Vr Ip Bgp Export Net **length**

Access: Read and write

Description: This attribute specifies the length of the network prefix.

Mib: Bgp

Values: Decimal (1..32)

Units: bits

Default: No default

COMPONENT Vr Ip Bgp **As**

Instance: Decimal (0..65535)

Groups: GROUP Vr Ip Bgp As Provisioned (Prov)

Scope: Application

Description: *Vr/<string> Ip Bgp As/n*
Rtr/<string> Bgp As/n

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Rtr/<string> Vrf/<string> Bgp As/n
This component associates attributes to an autonomous system.

Mib: Bgp

Common Verbs: Help, List, Display, Add, DELete

GROUP Vr Ip Bgp As Provisioned (Prov)

Properties: Provisioned

Description: This group contains the attributes associated to each autonomous system for this *Bgp* component instance.

Mib: Bgp

ATTRIBUTE Vr Ip Bgp As weight

Access: Read and write

Description: This attribute specifies the weight for an autonomous system. It allows users to prefer some ASes over others. It is used in route selection. Lowest weight is preferred. Setting the weight of an AS to 255 will make any route that traverses through that AS unpreferred.

Mib: Bgp

Values: Decimal (0..255)

Default: 128

COMPONENT Vr Ip Bgp AggregatePolicy (Aggregate)

Instance: prefix [IP address]
length [Decimal (0..32)]

Scope: Application

Description: *Vr/<string> Ip Bgp AggregatePolicy/<Ip Address>,<Decimal>*
Rtr/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>
Rtr/<string> Vrf/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>
This component is used to perform aggregation of BGP routes for exporting. Aggregation is the process of combining the characteristics of several different routes in such a way that a single route can be advertised. Aggregation reduces the amount of information that a BGP speaker must store and exchange with other BGP speakers. Refer to RFC1771 for the set of rules regarding which routes can be aggregated. A ***network*** subcomponent is automatically added with the same network range as the aggregation policy key and its action is set to ***aggregate***. So by default all subnets under the aggregation key range will be aggregated. Examples (For *Router* and *Vrf*, the examples are similar by replacing 'vr/0

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ip' with 'Router/a' and 'Router/a Vrf/b' respectively):
Example #1: aggregate all the networks covered by A.0.0.0/8
add vr/0 ip bgp aggregate/A.0.0.0,8
(Note: the following subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate will be automatically added)

Example #2: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.B.0.0, length 16, action aggregate
(Note: this set command will overwrite the default network subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate)
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate

Example #3: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks; also advertise A.B.C.0/24
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 networkl/0 prefix A.B.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/2
set vr/0 ip bgp aggregate/A.0.0.0,8 network/2 prefix A.B.C.0, length 24, action advertise

Example #4: aggregate all networks under A.0.0.0/8, meanwhile advertise A.B.0.0/16
add vr/0 ip bgp aggregate/A.0.0.0,8
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.B.0.0, length 16, action advertise

Mib	Bgp
Opt. Subcomp.	COMPONENT Vr Ip Bgp Aggregate Network (Net)
Common Verbs	Help List Display Add DELete

COMPONENT Vr Ip Bgp Aggregate Network (Net)

Instance	Decimal (0..65535)

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Groups	GROUP Vr Ip Bgp Aggregate Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Vrf/<string> Bgp Aggregate/<IP address>,<n> Network/n* This is an optional subcomponent of *Aggregate* component and identifies a set of more specific routes that this BGP will aggregate or advertise together with the aggregated route.
Mib	Bgp
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Bgp Aggregate Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Aggregate Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Aggregate Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	Bgp
Values	Decimal (0..32)
Units	bits
Default	0

ATTRIBUTE Vr Ip Bgp Aggregate Net protocol

Access	Read and write

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Description	This attribute specifies the IP protocols to which this route should belong.
Mib	Bgp
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal
Default	all

ATTRIBUTE Vr Ip Bgp Aggregate Net **egpAsId (egpAs)**

Access	Read and write
Description	This attribute specifies an EGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***egp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through egp and this attribute matches the EGP autonomous system number where the network is learned from. The default value 0 indicates that the EGP autonomous system number is not specified.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Aggregate Net **bgpAsId (bgpAs)**

Access	Read and write
Description	This attribute specifies the BGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***bgp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through BGP and this attribute matches the BGP autonomous system number where the network is learned from. The default value 0 indicates that the BGP autonomous system number is not specified.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Aggregate Net **ospfTag**

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Access	Read and write
Description	This attribute specifies the OSPF tag. When this attribute is set to a value other than the default value FFFFFFFF in hex, the *protocol* attribute must be set to either ***ospf*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if its OSPF tag matches this value. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag is not specified.
Mib	Bgp
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Vr Ip Bgp Aggregate Net **ripInterface (ripIf)**

Access	Read and write
Description	This attribute specifies a local RIP interface which should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or one of the IP addresses provisioned as an *Interface* component. When this value is non-zero, the value of the *protocol* attribute must be either set to ***rip*** or to ***all.*** And this more specific route will be advertised together with the aggregated route only if it is learned through RIP and this RIP interface. The default value 0.0.0.0 indicates that the RIP interface is not specified.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Aggregate Net **action**

Access	Read and write
Description	This attribute specifies whether this network should be aggregated or advertised out.
Mib	Bgp
Values	aggregate advertise
Default	aggregate

COMPONENT Vr Ip Bgp **IndbEntry (Indb)**

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]

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Groups	GROUP Vr Ip Bgp Indb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string>Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string> Vrf/<string> Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes a BGP route received from one of its peers.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp Indb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *IndbEntry* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Indb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Vr Ip Bgp Indb inLocaldb

Access	Read only
Description	This attribute indicates whether or not this route was chosen as the best BGP4 route.
Mib	Bgp
Values	false true
Default	No default

ATTRIBUTE Vr Ip Bgp Indb nextHop

Access	Read only

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Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Indb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb calcLocalPref

Access	Read only
Description	This attribute indicates our degree of preference for this route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected

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Default	No default

ATTRIBUTE Vr Ip Bgp Indb **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Indb **asPath**

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb **unknownAttributes (unknown)**

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.

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Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Indb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	Bgp
List of	IP address
List Size	256
Default	No default

COMPONENT Vr Ip Bgp LocaldbEntry (Localdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Vr Ip Bgp Localdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string> Vrf/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP local database. This database contains the routing information that the BGP speaker has

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selected by applying its local import policies and decision process to the routing information stored in *IndbEntry*.

Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp Localdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *LocaldbEntry* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Localdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Vr Ip Bgp Localdb **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb **asPath**

Access	Read only

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Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.

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Mib	Bgp
List of	IP address
List Size	256
Default	No default

COMPONENT Vr Ip Bgp OutdbEntry (Outdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Vr Ip Bgp Outdb Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address> Rtr/<string> Vrf/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP output database that BGP advertises to its peers. The database contents are selected by applying its local export policies to the routing information stored in the IP forwarding table.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp Outdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *OutdbEntry* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Outdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

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ATTRIBUTE Vr Ip Bgp Outdb **nextHop**

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb **localPreference**

Access	Read only
Description	This attribute indicates this *Bgp* instance's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb **aggregatorAs**

Access	Read only

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Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb **asPath**

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb **unknownAttributes (unknown)**

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)

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Default	No default

ATTRIBUTE Vr Ip Bgp Outdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of a route in the local AS. When the Route Reflector distributes a learned IBGP route to other IBGP speakers, the value of this attribute in the learned route is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. When the Route Reflector redistributes a learned IBGP to other IBGP speakers, the cluster id of this Route Reflector is appended to the cluster list of the learned IBGP route. If this *Bgp* instance is not a Route Reflector, this attribute is blank.
Mib	Bgp
List of	IP address
List Size	256
Default	No default

COMPONENT Vr Ip Bgp LocalVpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> This component contains all VPN information from the specified VPN that is learned from customer VR on the local node.
Mib	Bgp
Dyn. Subcomp.	COMPONENT Vr Ip Bgp LocalVpn Ipv4
Common Verbs	Help List Display

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COMPONENT Vr Ip Bgp LocalVpn Ipv4

Instance	IP address
Groups	GROUP Vr Ip Bgp LocalVpn Ipv4 Operational (Oper)
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP locally for the specified VPN.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp LocalVpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp LocalVpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp LocalVpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no

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dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.

Mib: Bgp

Values:
none
hub
spoke

Default: No default

COMPONENT Vr Ip Bgp MBgpRibEntry (MBgpRib)

Instance:
vpnId [String (7, Dashed Hex)]
prefix [IP address]
length [Decimal (0..32)]
peer [IP address]

Groups: GROUP Vr Ip Bgp MBgpRib Operational (Oper)

Scope: Application

Description:
Vr/<string> Ip Bgp MBgpRibEntry/ <vpnid>,<prefix>,<length>,<peer_ip_address>
This component represents a single MBGP routing database entry received from one of the BGP peers of this virtual router.

The instance values of this component have the following meanings:
- *vpnId:* the virtual private network identifier associated with the MBGP route.
- *prefix*: the destination IP address prefix of the MBGP route.
- *length:* the length of the IP address prefix of the MBGP route.
- *peer_ip_address:* the IP address prefix of the BGP peer that the MBGP route has been learned from. A value of 0.0.0.0 indicates that the MBGP route is learned from a locally attaching customer VR.

This component only appears under a *VirtualRouter* component whose *vpnMode* attribute is set to ***carrier***.

Mib: Bgp

Common Verbs:
Help
List
Display

GROUP Vr Ip Bgp MBgpRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MBgpRibEntry* component.

Mib: Bgp

ATTRIBUTE Vr Ip Bgp MBgpRib origin

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Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib status

Access	Read only
Description	This attribute indicates whether the MBGP route has been distributed into the routing table of the customer VR corresponding to the VPN identifier value.
Mib	Bgp
Values	localVpnRoute inCvrRdb importBlocked importLimitExceeded unreachableNh
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib nextHop

Access	Read only
Description	This attribute indicates the IP address of the router that should be used as the next hop to reach the destination address prefix given by the instance value of this component.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib localPreference

Access	Read only
Description	This attribute indicates the local IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib multiExitDiscriminator (med)

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Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib **asPath**

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.

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Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Bgp MplsVpnRibEntry (MvRib)

Instance	routeDistinguisher [String (3..21, RFC2547RdRtSyntax)] prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Vr Ip Bgp MvRib Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> *Rtr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> The *MplsVpnRibEntry* component represents a single entry in the MPLS VPN routing information database.This component is used to maintain the MPLS VPN routes learned both locally and from the BGP peers. The instance values of this component have the following meaning: - *routeDistinguisher:* a string associated with the MPLS VPN route. The string is in the form of (1) AS:nn or (2) IPAddr:mm. where AS represents an autonomous system number, nn represents an index value, IPAddr represents an IP address,

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mm represents an index value

- *prefix*: the destination IP address prefix of the MPLS VPN route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute.

- *length:* the length of the IP address prefix of the MPLS VPN route. This is the IP address prefix length as specified in the Network Layer Reachability Information field.

- peerIpAddr: the IP address prefix of the BGP peer that the MPLS VPN route has been learned from.

This component is only applicable to the *Router* component or a virtual router whose *vpnMode* attribute is set to ***carrier***.

Mib: Bgp

Common Verbs: Help, List, Display, LOCK, Unlock

GROUP Vr Ip Bgp MvRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *BgpMplsRibEntry* component.

Mib: Bgp

ATTRIBUTE Vr Ip Bgp MvRib serviceLabel (sl)

Access: Read only

Description: This attribute indicates the service label (the inner label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node and distributed together with the routing information toward the remote end PE. The service label is then used by the remote PE node to encapsulate traffic of the same VPN to the local PE node. When the local PE node processes a received packet which has the service label at the top of the stack, the PE pops the stack, and sends the packet to the Customer Edge (CE) node from which the route leads. (See also transportLabel attribute description.)

Mib: Bgp

Values: Decimal (0..1048575)

Default: No default

ATTRIBUTE Vr Ip Bgp MvRib transportLabel (tl)

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Access	Read only
Description	This attribute indicates the transport label (the outer label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node. The transport label identifies the MPLS tunnel (Labeled Switched Path) used to transport the service label encapsulated VPN traffic, between two PE nodes, through the backbone. The transport label is applied on top of the service label at the source PE node, and used to direct the VPN traffic (travelling through the network core) to the destination PE. At the destination PE node the transport label is stripped, leaving the service label encapsulated packet to be processed and forwarded to a CE node based on the service label. A value of ***awaitingLabel*** indicates the MPLS tunnel is currently not available and waiting to be established. A value of ***notApplicable*** indicates this is a local route and hence doesn't have a transport label.
Mib	Bgp
Values	Decimal (0..1048575) awaitingLabel notApplicable
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib reachable (reach)

Access	Read only
Description	This attribute indicates whether a route is currently reachable through an LSP tunnel.
Mib	Bgp
Values	true false
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib bgpNextHop (bgpNh)

Access	Read only
Description	This attribute indicates the bgp next hop IP address that should be used to reach the destination address prefix.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib origin

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.

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Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib localPreference (locPrf)

Access	Read only
Description	This attribute indicates the LOCAL_PREFERENCE path attribute of the route. The LOCAL_PREFERENCE path attribute is used by a BGP speaker to inform other BGP speakers in its own autonomous system of the originating speaker's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib asPath

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attributes lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.

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Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib **aggregatorAddr**

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib **communityPath**

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib **siteOfOrigin (soo)**

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

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ATTRIBUTE Vr Ip Bgp MvRib outgoingInterface (outIf)

Access	Read only
Description	This attribute indicates the local interface IP address for the *Rtr If LdpIf* on which the active outgoing LSP connection for the *bgpNextHop* is programmed. This attribute is filterable for the route entries learned from the *Rtr Vrf* on the same Provider Edge(PE) node.That is,local entries whose peer addresses are equal to ***0.0.0.0*** are filtered.
Mib	Bgp
Values	IP address
Default	No default

COMPONENT Vr Ip Bgp Ipv4LabelRibEntry (LRib)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	GROUP Vr Ip Bgp LRib Operational (Oper)
Scope	Application
Description	*Rtr/<string> Bgp ipv4LabelRibEntry/<prefix>,<length>,<peer>* The *ipv4LabelRibEntry* component represents a single entry in the routing information database which maintains the ipv4 labelled BGP routes learned both locally and remotely from the BGP peers. - *prefix*: the destination IP address prefix of the ipv4 labelled BGP route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *length*: the length of the IP address prefix of the ipv4 labelled BGP route. This is the IP address prefix length as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *peer*: the IP address of the BGP peer from which the ipv4 labelled BGP route was learned. This component is only applicable to the *Bgp* component whose *Bgp Peer Descriptor addressFamily* attribute is set to ***ipv4Label***.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp LRib Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes of the *ipv4LabelRibEntry* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp LRib nextHop (nh)

Access	Read only
Description	This attribute indicates the IP address of the next hop that should be used to reach the destination address.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp LRib inLabel (il)

Access	Read only
Description	This attribute indicates the label (if any) assigned by this Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Vr Ip Bgp LRib outLabel (ol)

Access	Read only
Description	This attribute indicates the label (if any) assigned by the next hop Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Vr Ip Bgp LRib origin

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

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ATTRIBUTE Vr Ip Bgp LRib **asPath**

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attribute lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp LRib **multiExitDiscriminator (med)**

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp LRib **atomicAggregate**

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp LRib **aggregatorAs**

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp LRib **aggregatorAddr**

Access	Read only

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Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp LRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp LRib siteOfOrigin (soo)

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

COMPONENT Vr Ip SecurityPolicyDatabase (Spd)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip Spd Provisioned (Prov) GROUP Vr Ip Spd Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip SecurityPolicyDatabase/<string>* The *SecurityPolicyDatabase* component represents a set of policies collectively known as the security policy database (SPD), which is used for applying and bypassing IPSec services.

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At most one *Spd* instance is allowed for a virtual router. Only the management virtual router can have a security policy database.

Mib	IpSec
Opt. Subcomp.	COMPONENT Vr Ip Spd Policy COMPONENT Vr Ip Spd Ike COMPONENT Vr Ip Spd SecurityAssociationProposal (Proposal)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Spd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *SecurityPolicyDatabase* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd alarmOnViolation

Access	Read: All Write: System_admin
Description	This attribute specifies whether an alarm is generated when a security violation is detected by this security policy database. Examples of security violations include policy mismatch and authentication failure.
Mib	IpSec
Values	enabled disabled
Default	enabled

GROUP Vr Ip Spd Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *SecurityPolicyDatabase* component. These counts cannot be associated with individual SAs, so they are aggregated under the *SecurityPolicyDatabase* component. Counts that can be associated with a particular SA are defined under the *Sa* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd outDiscards

Access	Read: All Write: Illegal

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Description	This attribute counts the packets discarded by an outbound security policy. This count includes packets that are discarded because they have no matching security policy; the default security policy action is always discard. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inSaLookupFailures

Access	Read: All Write: Illegal
Description	This attribute counts the inbound packets for which an SA could not be found. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the packets discarded because the Security Parameter Index (SPI) in the packet is unknown, or no SA is found with matching selectors. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inMismatch

Access	Read: All Write: Illegal
Description	This attribute counts the packets discarded due to a mismatch between the packet and what the security policy dictates. An example of a mismatch is when a packet is received on a security enabled management virtual router in the clear (no security services applied), but the security policy for that VR specifies that this packet should have an applied security service. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec

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Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd outBytes

Access	Read: All Write: Illegal
Description	This attribute counts the bytes processed, including discarded packets. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd outPackets

Access	Read: All Write: Illegal
Description	This attribute counts the packets processed, including discarded packets. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inBytes

Access	Read: All Write: Illegal
Description	This attribute counts the bytes processed, including discarded packets. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inPackets

Access	Read: All Write: Illegal
Description	This attribute counts the packets processed, including discarded packets. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

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COMPONENT Vr Ip Spd Policy

Instance	Decimal (1..65535)
Groups	GROUP Vr Ip Spd Policy Selectors GROUP Vr Ip Spd Policy Provisioned (Prov) GROUP Vr Ip Spd Policy Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Spd/<string> Policy/n* The *Policy* component defines an IPSec policy to be applied for a virtual router. An IPSec policy is defined by the following parameters: 1. The selector criteria specifying packets to which the security policy is to be applied. 2. The action taken when a packet matches the security policy selectors. Up to 4096 policies are allowed for each instance of the *SecurityPolicyDatabase* component. The instance value of the *Policy* component specifies the policy's precedence. Policy lookup occurs in the order of increasing precedence value. If no match is found, the packet is discarded. It is recommended that the instance values of consecutive *Policy* components be separated by more than 1 (say 10). This allows a new *Policy* component to be added whose precedence value is intermediate between two existing policies. Each *Policy* component instance has an associated direction: inbound or outbound. - An inbound *Policy* instance corresponds to an entry in the inbound security policy database (SPD), as referred to in RFC 2401. IPSec traffic received on the management virtual router, is matched against inbound policies. - An outbound *Policy* instance corresponds to an entry in the outbound SPD, as referred to in RFC 2401. Locally generated traffic is matched against outbound policies. The *Policy* component allows the operator to distinguish a flow based on: 1. destination IP address, 2. source IP address,

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3. layer 4 (transport) protocol, and
4. for TCP and UDP, the source and destination port numbers.

Mib IpSec

Mib COMPONENT Vr Ip Spd Policy SecurityAssociation (Sa)

Common Verbs
Help
List
Display
Add
DELete

VERB Clear Vr Ip Spd Policy

Impact Passive

Description Clear Vr/<string> Ip Spd/<string> Policy/<n>

The Clear verb manually deletes all the negotiated or dynamically created SecurityAssociation (SA) subcomponent instances of this Policy component. These SA instances are the ones created via Internet Key Exchange (IKE) messaging.

The Clear verb does not affect any static or provisioned SecurityAssociation subcomponents. These static SA instances can only be removed by deleting the corresponding provisioned SA component.

GROUP Vr Ip Spd Policy **Selectors**

Properties Provisioned

Description This group contains the selector attributes of the *Policy* component. These attributes specify the criteria that a packet must match for the policy to be applied.

Mib IpSec

ATTRIBUTE Vr Ip Spd Policy **protocol (proto)**

Access
Read: All
Write: System_admin

Description This attribute specifies the layer 4 (transport) protocol to which the policy applies.

Mib IpSec

Values
Decimal (2..3; 5; 7; 9..16; 18..49; 51..88; 90..255)
any
icmp
ip
tcp
egp
udp

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	esp ospf
Default	any

ATTRIBUTE Vr Ip Spd Policy srcPort (sPort)

Access	Read: All Write: System_admin
Description	This attribute specifies the source TCP or UDP port number for traffic flows to which the policy applies. A value of ***any*** specifies that any port number matches the policy. If the *protocol* attribute value is not ***tcp***, ***udp*** or ***any***, then this attribute must be set to ***any***.
Mib	IpSec
Values	Decimal (1..19; 22; 24..122; 124..160; 162..499; 501..519; 521..1811; 1813..5927; 5929..65535) any ftpdata ftp telnet ntp snmp ike rip radius fmip
Default	any

ATTRIBUTE Vr Ip Spd Policy dstPort (dPort)

Access	Read: All Write: System_admin
Description	This attribute specifies the destination TCP or UDP port number for traffic flows to which the policy applies. ***any*** specifies that any port number matches the policy. If the *protocol* attribute value is not ***tcp***, ***udp*** or ***any***, then this attribute must be set to ***any***.
Mib	IpSec
Values	Decimal (1..19; 22; 24..122; 124..160; 162..499; 501..519; 521..1811; 1813..5927; 5929..65535) any ftpdata

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ftp
telnet
ntp
snmp
ike
rip
radius
fmip

Default: any

ATTRIBUTE Vr Ip Spd Policy srcIpAddress (sAddr)

Access: Read: All
Write: System_admin

Description: This attribute specifies the source IP address for traffic flows to which the policy applies.

The address can be a host address, a range or a wildcard:
- To specify a host address, specify one value, which is the host address.
- To specify a range of IP addresses, specify two values, which are the lower and upper bounds of the range. The order does not matter.
- To specify a wildcard, leave the list empty.

Mib: IpSec

List of: IP address

List Size: 2

Default: No default

ATTRIBUTE Vr Ip Spd Policy dstIpAddress (dAddr)

Access: Read: All
Write: System_admin

Description: This attribute specifies the destination IP address for traffic flows to which the policy applies.

The address can be a host address, a range or a wildcard:
- To specify a host address, specify one value, which is the host address.
- To specify a range of IP addresses, specify two values, which are the lower and upper bounds of the range. The order does not matter.
- To specify a wildcard, leave the list empty.

Mib: IpSec

List of: IP address

List Size: 2

Default: No default

GROUP Vr Ip Spd Policy Provisioned (Prov)

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Properties	Provisioned
Description	This group contains the provisionable attributes of the *Policy* component related to its treatment.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Policy **direction**

Access	Read: All Write: System_admin
Description	This attribute specifies the direction of the policy: - ***inbound***: this policy is to be matched against locally destined traffic received on the management virtual router. ***- outbound***: this policy is to be matched against traffic that is generated by the management virtual router.
Mib	IpSec
Values	inbound (in) outbound (out)
Default	No default

ATTRIBUTE Vr Ip Spd Policy **action**

Access	Read: All Write: System_admin
Description	This attribute specifies the action to be taken when a packet is received that matches the selectors for this policy. The value can be one of the following: ***- discard***: the packet is to be discarded. ***- bypass***: no security is to be applied to the packet. Instead the packet is forwarded as usual. ***- apply***: the security service specified by the *Sa* subcomponent is applied to the packet. *Check Prov* will fail if the *action* is ***apply*** and there is no *Sa* subcomponent as well as the *ikePolicyLink* attribute is null.
Mib	IpSec
Values	discard bypass apply
Default	apply

ATTRIBUTE Vr Ip Spd Policy **description**

Access	Read: All Write: System_admin
Description	This attribute specifies a meaningful name or description for the *Policy* instance.

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Mib	IpSec
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE Vr Ip Spd Policy ikePolicy

Access	Read: All Write: System_admin
Description	This attribute specifies the instance of the *IkePolicy* component to which this *Policy* component is linked. The *IkePolicy* link provides access to a Phase 1 security association over which this *Policy* can negotiate a Phase 2 security association. When the *action* attribute is set to ***apply*** and this *Policy* component has no provisioned *SecurityAssociation* subcomponent, the *ikePolicy* attribute must specify a link to an instance of an *IkePolicy* component under the same *Spd* component as this *Policy* component.
Mib	IpSec
Values	Link (Service, ikeIpSecPolicyList)
Default	No default

ATTRIBUTE Vr Ip Spd Policy saProposal

Access	Read: All Write: System_admin
Description	This attribute specifies the *InwIpSecSaProposal* component which will be used by this *Policy* component to negotiate an IpSec security association. When the *action* attribute is set to ***apply*** and this *Policy* component has no provisioned *SecurityAssociation* subcomponent, the *saProposal* attribute must specify a link to a *SecurityAssociationProposal* component under the same *Spd* component as this *Policy* component.
Mib	IpSec
Values	Link (Service, ipSecPolicyList)
Default	No default

GROUP Vr Ip Spd Policy Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for this *Policy* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Policy lastSaFailureReason

Access	Read: All Write: Illegal

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Description	This attribute indicates the last failure reason associated with this *Policy* component's *Sa* subcomponent. The failure may have resulted in a failure to establish or may have caused an established *Sa* to be taken down. The possible values are: - ***noSaFailure*** - ***negotiationFailure*** - ***invalidParameters*** - ***noResponseFromPeer*** - ***configurationMismatch*** - ***failureNotApplicable***
Mib	IpSec
Values	noSaFailure negotiationFailure invalidParameters noResponseFromPeer configurationMismatch failureNotApplicable
Default	failureNotApplicable

COMPONENT Vr Ip Spd Policy SecurityAssociation (Sa)

Instance	secDestination [IP address] secProtocol [esp] spi [Decimal (256..4294967295)]
Groups	GROUP Vr Ip Spd Policy Sa Selectors GROUP Vr Ip Spd Policy Sa Operational (Oper) GROUP Vr Ip Spd Policy Sa Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip Spd/<string> Policy/<string> SecurityAssociation/ <secDestination, secProtocol, spi>*
Mib	IpSec
Subcomponents	COMPONENT Vr Ip Spd Policy Sa ManualEspSa (ManEspSa)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Spd Policy Sa Selectors

Properties	Operational

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Description	This group contains the selectors used for the *SecurityAssociation* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Policy Sa protocol (proto)

Access	Read: All Write: Illegal
Description	This attribute indicates the layer 4 (transport) protocol to which the policy applies.
Mib	IpSec
Values	Decimal (2..3; 5; 7; 9..16; 18..49; 51..88; 90..255) any icmp ip tcp egp udp esp ospf
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa srcPort (sPort)

Access	Read: All Write: Illegal
Description	This attribute indicates the source TCP or UDP port number selector for the security association.
Mib	IpSec
Values	Decimal (1..19; 22; 24..122; 124..160; 162..499; 501..519; 521..1811; 1813..5927; 5929..65535) any ftpdata ftp telnet ntp snmp ike rip radius fmip
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa dstPort (dPort)

Access	Read: All Write: Illegal

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Description	This attribute indicates the destination TCP or UDP port number selector for the security association.
Mib	IpSec
Values	Decimal (1..19; 22; 24..122; 124..160; 162..499; 501..519; 521..1811; 1813..5927; 5929..65535) any ftpdata ftp telnet ntp snmp ike rip radius fmip
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa srcIpAddress (sAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the source IP address selector for the security association.
Mib	IpSec
List of	IP address
List Size	2
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa dstIpAddress (dAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the destination IP address selector for the security association.
Mib	IpSec
List of	IP address
List Size	2
Default	No default

GROUP Vr Ip Spd Policy Sa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for this *Sa* component.
Mib	IpSec

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ATTRIBUTE Vr Ip Spd Policy Sa direction

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic direction for which this *Sa* component is used.
Mib	IpSec
Values	inbound outbound
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa upTime

Access	Read: All Write: Illegal
Description	This attribute indicates the time elapsed since this *Sa* component was created.
Mib	IpSec
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa state

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of this *SA*. - ***uninitialized*** - ***initialized*** ***- createSaSemt*** - ***established*** - ***deletedByPeer***
Mib	IpSec
Values	uninitialized initialized createSaSemt established deleted
Default	uninitialized

ATTRIBUTE Vr Ip Spd Policy Sa remainingTimeToLive (remTTL)

Access	Read: All Write: Illegal

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Description	This attribute indicates the time, in seconds, that a fully established dynamic *SA* will continue to exist without renegotiation. For provisioned *SA* components, this attribute will be set to a value of ***forever***. For dynamic *SA* components that are not fully established, the attribute value will be set to a value of ***notEstablished***.
Mib	IpSec
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa maxTimeToLive (maxTTL)

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated maximum time, in seconds, that a fully negotiated *SA* wil continue to exist without renegotiation. For provisioned *SA* components, this attribute will be set to a value of ***forever***. For dynamic *SA* components that are not fully established, the attribute value will be set to a value of ***notEstablished***.
Mib	IpSec
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa perfectForwardSecrecy (pfs)

Access	Read: All Write: Illegal
Description	This attribute indicates if PFS has been negotiated.
Mib	IpSec
Values	off on
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa antiReplay

Access	Read: All Write: Illegal

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Description	This attribute indicates whether or not anti-replay protection has been enabled for this *SA* component..
Mib	IpSec
Values	off on
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa encryptionAlgorithm (encAlg)

Access	Read: All Write: Illegal
Description	This attribute indicates the encryption algorithm in use by this *SA*.
Mib	IpSec
Values	none des 3des aes
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa authenticationAlgorithm (authAlg)

Access	Read: All Write: Illegal
Description	This attribute indicates the authentication algorithm in use by this *SA*.
Mib	IpSec
Values	none sha1 md5
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa diffieHellmanGroup (dhg)

Access	Read: All Write: Illegal
Description	This attribute indicates the Diffie Hellman Group number in use on this *SA*.
Mib	IpSec
Values	none gp1 gp2
Default	No default

GROUP Vr Ip Spd Policy Sa Statistics (Stats)

Properties	Operational

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Description	This group contains the statistics attributes of this *Sa*.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Policy Sa decryptErrors

Access	Read: All Write: Illegal
Description	This attribute counts the packets for which decryption errors were encountered for this *Sa* component. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa authErrors

Access	Read: All Write: Illegal
Description	This attribute counts the authentication errors encountered for this *Sa* component. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa byteCount

Access	Read: All Write: Illegal
Description	This attribute counts the bytes processed for this *Sa* component. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Units	bytes
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa policyErrors

Access	Read: All Write: Illegal
Description	This attribute counts the security packets received on this *Sa* component which do not match the defined Security Policy selectors. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec

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Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa otherErrors

Access	Read: All Write: Illegal
Description	This attribute counts the security packets received on this *Sa* component for which an error is encountered other than those described previously. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa packetCount

Access	Read: All Write: Illegal
Description	This attribute counts the packets processed for this *Sa* component. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa replayErrors (rerr)

Access	Read: All Write: Illegal
Description	This attribute counts duplicate sequence numbers, as defined in RFC 2046, for this *Sa* component. The count wraps to zero when it exceeds the maximum value.
Mib	IpSec
Values	Long Integer
Default	No default

COMPONENT Vr Ip Spd Policy Sa ManualEspSa (ManEspSa)

Groups	GROUP Vr Ip Spd Policy Sa ManEspSa Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Spd/<string> Policy/<string> Sa/<secDestination, secProtocol, spi> ManualEspSa* The *ManualEspSa* component specifies the security parameters for the ESP protocol, including keys, to use between two peers. No negotiation is performed between the peers.

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When using manual keying, both ends of the IPsec session must be configured to match each other. The SPI value on one end must be the same as the SPI value on the other end. The *key* attributes on both ends must also be the same.

Mib IpSec

Common Verbs
Help
List
Display

GROUP Vr Ip Spd Policy Sa ManEspSa **Provisioned (Prov)**

Properties Provisioned

Description This group contains the provisionable attributes for the *ManualEspSa* component.

Mib IpSec

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa **encAlgorithm (encAlg)**

Access
Read: All
Write: System_admin

Description This attribute specifies the encryption algorithm to be used for this Encryption Security Protocol (ESP) security association (SA).

The following encryption algorithms are supported:
- ***des***: data encryption standard (DES), which is the most widely used algorithm
- ***3des***: encryption using DES three times. This encryption algorithm is stronger than DES.
- ***aes***: Advanced Encryption Standard. This encryption algorithm is as strong as, and more efficient than, 3DES.

If no ESP encryption is desired, set this attribute to ***none***.

At least one of *encAlg* and *authAlg* attribute must be specified; they cannot both be set to ***none***.

Mib IpSec

Values
none
des
3des
aes

Default des

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa **authAlgorithm (authAlg)**

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Access	Read: All Write: System_admin
Description	This attribute specifies the authentication algorithm to be used for this ESP security association (SA). The following authentication algorithms are supported: - ***md5***: message digest - ***sha1***: secure hash algorithm SHA-1 is considered stronger than MD5. If no ESP authentication is desired, set this attribute to ***none***. At least one of *encAlg* and *authAlg* attribute must be specified; they cannot both be set to ***none***.
Mib	IpSec
Values	none sha1 md5
Default	none

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa **encKey**

Access	Read: Illegal Write: System_admin
Description	This attribute specifies the symmetric encryption key to be used in the ESP protocol. When the *encAlgorithm* attribute is set to ***des***, the length of the key must be 16 hex digits. When the *encAlgorithm* attribute is set to ***3des***, the length of the key must be 48 hex digits. When the *encAlgorithm* attribute is set to ***aes***, the length of the key must be 32 hex digits. The key itself is stored in an encrypted form. A warning is issued when using the DES or 3DES algorithms if the key is weak as defined in RFC 2409 Appendix A. There are no known weak keys for AES according to RFC3602.
Mib	IpSec
Values	String (0..24, Hex)
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa **authKey**

Access	Read: Illegal Write: System_admin

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Description	This attribute specifies the symmetric key to use for the keyed-hash function of the ESP protocol. When the *authAlgorithm* attribute is set to ***md5***, the length of the key must be 32 hex digits. When *authAlgorithm* attribute is set to ***sha1***, the length of the key must be 40 hex digits. The key itself is stored in an encrypted form.
Mib	IpSec
Values	String (0..24, Hex)
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa **antiReplay**

Access	Read: All Write: System_admin
Description	This attribute specifies whether or not the antiReplay feature is enabled for the *SecurityAssociation* component instance. This attribute has no impact on the *SecurityAssociation* component instances under the *Policy* components which have the *direction* attribute set to ***outbound***.
Mib	IpSec
Values	off on
Default	No default

COMPONENT Vr Ip Spd **Ike**

Groups	GROUP Vr Ip Spd Ike Statistics (Stats) GROUP Vr Ip Spd Ike Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Spd/<string> Ike* The *Ike* component represents the set of Internet Key Exchange Proposals and Policies that are used to create Phase I security associations (IKE SAs) with security peers.

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At least one instance of the *IkeProposal* component and one instance of the *IkePolicy* component must be provisioned.

Mib: IpSec

Subcomponents: COMPONENT Vr Ip Spd Ike IkeSaProposal (Proposal)
COMPONENT Vr Ip Spd Ike IkeSaPolicy (Policy)

Common Verbs: Help, List, Display, Add, DELete

GROUP Vr Ip Spd Ike Statistics (Stats)

Properties: Operational

Description: This group contains the statistics attributes associated with one or more IkeSa components.

If the Statistics group is displayed for an IkePolicy, the values represent the statistics for that *Policy* component's SA.

If the Statistics group is displayed for the Ike component, the values represent the sum of the statistics for all Policy component's SAs.

Mib: IpSec

ATTRIBUTE Vr Ip Spd Ike inPackets

Access: Read: All
Write: Illegal

Description: This attribute counts the number of IKE packets received.

The count wraps to zero when it reaches the value 2 to the power 64.

Mib: IpSec

Values: Long Integer

Default: No default

ATTRIBUTE Vr Ip Spd Ike inDiscards

Access: Read: All
Write: Illegal

Description: This attribute counts the number of incoming packets that have been discarded.

The count wraps to zero when it reaches the value 2 to the power 64.

Mib: IpSec

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Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike outPackets

Access	Read: All Write: Illegal
Description	This attribute counts the number of IKE packets that have been transmitted. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike outDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the number of outbound packets that have been discarded prior to transmission. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike mainModePktRcvd

Access	Read: All Write: Illegal
Description	This attribute counts the number of packets received related to establishing or maintaining IKE (Phase 1) security associations. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike quickModePktRcvd

Access	Read: All Write: Illegal
Description	This attribute counts the number of packets received related to establishing or maintaining IpSec (Phase 2) security associations.

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The count wraps to zero when it reaches the value 2 to the power 64.

Mib IpSec

Values Long Integer

Default No default

ATTRIBUTE Vr Ip Spd Ike infoExchPktRcvd

Access Read: All
Write: Illegal

Description This attribute counts the number of IKE information packets received.

The count wraps to zero when it reaches the value 2 to the power 64.

Mib IpSec

Values Long Integer

Default No default

ATTRIBUTE Vr Ip Spd Ike mainModePktSent

Access Read: All
Write: Illegal

Description This attribute counts the number of packets transmitted related to establishing or maintaining IKE (Phase 1) security associations.

The count wraps to zero when it reaches the value 2 to the power 64.

Mib IpSec

Values Long Integer

Default No default

ATTRIBUTE Vr Ip Spd Ike quickModePktSent

Access Read: All
Write: Illegal

Description This attribute counts the number of packets transmitted related to establishing or maintaining IpSec (Phase 2) security associations.

The count wraps to zero when it reaches the value 2 to the power 64.

Mib IpSec

Values Long Integer

Default No default

ATTRIBUTE Vr Ip Spd Ike infoExchPktSent

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Access	Read: All Write: Illegal
Description	This attribute counts the number of IKE information packets transmitted. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase1SaCreated

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 1 security associations created. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase1SaEstablished

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 1 security associations that have reached the established state. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase1SaDeleted

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 1 security associations that have been deleted. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

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ATTRIBUTE Vr Ip Spd Ike phase1SaDeletedForRetransFail

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 1 security associations deleted due to retransmission failures. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase1SaDeletedForAuthFail

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 1 security associations deleted due to authentication failures. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase1SaDeletedForIdleTimeout

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 1 security associations deleted due to idle timeout. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase1SaDeletedForSessionTimeout

Access	Read: All Write: Illegal
Description	This attribute countsthe number of Phase 1 security associations deleted due to session timeout.. The count wraps to zero when it reaches the value 2 to the power 64.

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Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase2SaCreated

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 2 security associations created. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase2SaEstablished

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 2 security associations that have reached the established state. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase2SaDeleted

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 2 security associations that have been deleted. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase2SaDeletedForRetransFail

Access	Read: All Write: Illegal

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Description	This attribute counts the number of Phase 2 security associations deleted due to retransmission failures. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase2SaDeletedForIdleTimeout

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 2 security associations deleted due to idle timeout. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase1SaMsgRetrans

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 1 security association message retry attempts. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Ike phase2SaMsgRetrans

Access	Read: All Write: Illegal
Description	This attribute counts the number of Phase 2 security association message retry attempts. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

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GROUP Vr Ip Spd Ike Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ike* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Ike srcIpAddress (sAddr)

Access	Read: All Write: System_admin
Description	This attribute specifies the source IP address for the IKE key management traffic flow.
Mib	IpSec
Values	IP address
Default	No default

COMPONENT Vr Ip Spd Ike IkeSaProposal (Proposal)

Instance	Decimal (1..8)
Groups	GROUP Vr Ip Spd Ike Proposal Provisioned (Prov)
Scope	Application
Description	*Vr/s Ip Spd/s Ike Proposal/n* The *IkeProposal* component represents the security parameters to be negotiated between two peers. This component must have one or more *IkeTransform* subcomponents.
Mib	IpSec
Subcomponents	COMPONENT Vr Ip Spd Ike Proposal Transform (Trans)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Spd Ike Proposal Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IkeSaProposal* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Ike Proposal timeToLive (ttl)

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Access	Read: All Write: System_admin
Description	This attribute specifies the proposed time-to-live value for an IKE Security association that is negotiated using this *Proposal*. The actual negotiated time-to-live value will be indicated in the IkeSa component's *maxTimeToLive* attribute.
Mib	IpSec
Values	Decimal (1800..172800)
Units	seconds
Default	86400

ATTRIBUTE Vr Ip Spd Ike Proposal softLifetime

Access	Read: All Write: System_admin
Description	An *IkeSA* is created with a fixed maximum time-to-live, as indicated by the *maxTimeToLive* attribute of the *IkeSecurityAssociation component*. The *IkeSa* must be renegotiated before the *IkeSa* component's *maxTimeToLive* value expires. This attribute specifies a percentage of the *IkeA maxTimeToLive* attribute value. The corresponding time value (which is *softLifetime*maxTimeToLive*/100 seconds) specifies when renegotiation of the IKE SA should commence.
Mib	IpSec
Values	Decimal (75..95)
Units	%
Default	75

ATTRIBUTE Vr Ip Spd Ike Proposal ikePolicyList

Access	Read: All Write: System_admin
Description	This attribute lists all the *IkePolicy* components that are linked to this component.
Mib	IpSec
List of	Link (Service, ikeProposalLink)
Default	No default

COMPONENT Vr Ip Spd Ike Proposal Transform (Trans)

Instance	Decimal (1..8)
Groups	GROUP Vr Ip Spd Ike Proposal Trans Provisioned (Prov)

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Scope	Application
Description	*Vr/s Ip Spd/n Ike Proposal/n IkeSaTransform/n* The *IkeSaTransform* component represents information contained in the transform payload that is used during negotiation of the IKE SA. The information consists of specific security attributes that need to be negotiated with the IKE peer.
Mib	IpSec
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Spd Ike Proposal Trans **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the IKE *Transform* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Ike Proposal Trans **mode**

Access	Read: All Write: System_admin
Description	This attribute defines the method used in Phase One of the IKE negotiation. The only possible value is: - ***main***: provides identity protection.
Mib	IpSec
Values	mainMode
Default	mainMode

ATTRIBUTE Vr Ip Spd Ike Proposal Trans **authMethod (auth)**

Access	Read: All Write: System_admin
Description	This attribute specifies the authentication method used in IKE's Phase One negotiation. The only possible value is: - ***preshared***: pre-shared symmetric keys.
Mib	IpSec

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Values	preshared
Default	preshared

ATTRIBUTE Vr Ip Spd Ike Proposal Trans **encAlgorithm (encAlg)**

Access	Read: All Write: System_admin
Description	This attribute specifies the encryption algorithm proposed to be offered. The following encryption algorithms are supported: - ***des***: Data Encryption Standard (DES); - ***3des***: encryption using DES three times.
Mib	IpSec
Values	none des 3des aes
Default	des

ATTRIBUTE Vr Ip Spd Ike Proposal Trans **authAlgorithm (authAlg)**

Access	Read: All Write: System_admin
Description	This attribute specifies the authentication algorithm to be used. This is sometimes referred to as a hash algorithm. The following authentication algorithms are supported: - ***md5***: Message Digest; - ***sha1***: Secure Hash Algorithm.
Mib	IpSec
Values	none sha1 md5
Default	sha1

ATTRIBUTE Vr Ip Spd Ike Proposal Trans **diffieHellmanGroup (dhg)**

Access	Read: All Write: System_admin
Description	This attribute specifies the group within which the Diffie-Hellman exchange is negotiated. There are two groups supported: - ***gp1***: uses modulus of a 768 bit prime number; - ***gp2***: uses modulus of a 1024 bit prime number.
Mib	IpSec

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Values	none gp1 gp2
Default	gp1

COMPONENT Vr Ip Spd Ike IkeSaPolicy (Policy)

Instance	Decimal (1..10)
Groups	GROUP Vr Ip Spd Ike Policy Selectors (Sel) GROUP Vr Ip Spd Ike Policy Provisioned (Prov) GROUP Vr Ip Spd Ike Policy Operational (Oper)
Scope	Application
Description	*Vr/s Ip Spd/n Ike IkeSaPolicy/n* The *IkeSaPolicy* component represents the Internet Key Exchange (IKE) requirements for a specific IKE security association.
Mib	IpSec
Dyn. Subcomp.	COMPONENT Vr Ip Spd Ike Policy IkeSecurityAssociation (Sa)
Common Verbs	Help List Display Add DELete

VERB Clear Vr Ip Spd Ike Policy

Impact	Passive
Description	*Clear Vr/<string> Ip Spd/<string> Policy/<n>* The *Clear* manually deletes a negotiated (dynamically created) *SecurityAssociation* subcomponent of this *Policy* component. The *Clear* verb does not affect a provisioned *SecurityAssociation* subcomponent which can only be removed by deleting the corresponding provisioned component.

GROUP Vr Ip Spd Ike Policy Selectors (Sel)

Properties	Provisioned
Description	This group contains the selector attributes of the *IkeSaPolicy* component. These attributes specify the criteria that a packet must match for the policy to be applied.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Ike Policy destinationIpAddress (destAddr)

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Access	Read: All Write: System_admin
Description	This attribute specifies the destination IP address for the IKE key management traffic flow.
Mib	IpSec
Values	IP address
Default	No default

GROUP Vr Ip Spd Ike Policy **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *IkeSaPolicy* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Ike Policy **description (desc)**

Access	Read: All Write: System_admin
Description	This attribute allows an operator to specify a name or description for the *IkeSaPolicy* instance.
Mib	IpSec
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE Vr Ip Spd Ike Policy **presharedKey (key)**

Access	Read: Illegal Write: System_admin
Description	This attribute specifies the symmetric encryption key to be used in the IKE protocol. This is stored encrypted and cannot be read. The *presharedKey* attribute must be 20 or more characters in length. This attribute must not contain ';' characters.
Mib	IpSec
Values	String (0..255, ASCII)
Default	""

ATTRIBUTE Vr Ip Spd Ike Policy **perfectForwardSecrecy (pfs)**

Access	Read: All Write: System_admin

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Description	This attribute specifies if PFS is on or off. A value of 0 specifies that no private session key is to be computed.
Mib	IpSec
Values	off on
Default	off

ATTRIBUTE Vr Ip Spd Ike Policy retryTimerValue (rtv)

Access	Read: All Write: System_admin
Description	This attribute specifies the initial time, in milliseconds, that IKE waits for a reply from the IKE peer before attempting to resend a message.
Mib	IpSec
Values	Decimal (1000..3000)
Units	msec
Default	1000

ATTRIBUTE Vr Ip Spd Ike Policy numRetryAttempts (retryAttempts)

Access	Read: All Write: System_admin
Description	This attribute specifies the number of retransmission attempts of any IKE message by IKE. If a message has no response then IKE will have failed to negotiate.
Mib	IpSec
Values	Decimal (0..2)
Default	2

ATTRIBUTE Vr Ip Spd Ike Policy ikeProposalLink (proposalLink)

Access	Read: All Write: System_admin
Description	This attribute specifies the *IkeProposal* component that this *Policy* component will use to attempt to create an IKE security association with the peer.
Mib	IpSec
Values	Link (Service, ikePolicyList)
Default	No default

ATTRIBUTE Vr Ip Spd Ike Policy ikeIpSecPolicyList

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Access	Read: All Write: System_admin
Description	This attribute lists the IpSec *Policy* components that use this *IkeSaPolicy*. This is a read only attribute that is populated when an IpSec *Policy* component's *ikePolicyLink* attribute specifies this *IkeSaPolicy* component.
Mib	IpSec
List of	Link (Service, ikePolicy)
List Size	20
Default	No default

GROUP Vr Ip Spd Ike Policy **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *IkePolicy* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Ike Policy **negotiationStatus**

Access	Read: All Write: Illegal
Description	This attribute indicates the status of IKE SA negotiation. The possible values are: ***inactive***: no negotiation is in progress. ***initializing***: initial negotiation is in progress. ***failedPhase1***: negotiation failed during Phase 1. ***failedPhase2***: negotiation failed during Phase 2. ***passed***: negotiation passed**.**
Mib	IpSec
Values	inactive initializing failedPhase1 failedPhase2 passed
Default	inactive

ATTRIBUTE Vr Ip Spd Ike Policy **lastSaSetupMessageSent (lastSaMsgSent)**

Access	Read: All Write: Illegal
Description	This attribute indicates the value of the last message sent during the IKE SA negotiation. The possible values are: - ***noMsgExchanged***

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- ***initiationRequest***
- ***intiationReply***
- ***initiatorKeyExchange***
- ***responderKeyExchange***
- ***initiatorIdentification***
- ***responderIdentification***

Mib IpSec

Values
noMsgExchanged
initiationRequest
intiationReply
initiatorKeyExchange
responderKeyExchange
initiatorIdentification
responderIdentification

Default noMsgExchanged

ATTRIBUTE Vr Ip Spd Ike Policy lastSaSetupMessageReceived (lastSaMsgRxd)

Access
Read: All
Write: Illegal

Description This attribute indicates the value of the last message received during the IKE SA negotiation.

The possible values are:
- ***noMsgExchanged***
- ***initiationRequest***
- ***intiationReply***
- ***initiatorKeyExchange***
- ***responderKeyExchange***
- ***initiatorIdentification***
- ***responderIdentification***

Mib IpSec

Values
noMsgExchanged
initiationRequest
intiationReply
initiatorKeyExchange
responderKeyExchange
initiatorIdentification
responderIdentification

Default noMsgExchanged

ATTRIBUTE Vr Ip Spd Ike Policy lastSaFailureReason

Access
Read: All
Write: Illegal

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Description	This attribute indicates the reason for the last SA failure which happened either during the last IKE SA negotiation or during normal operation of an established SA. The possible values are: - ***noSaFailure*** - ***negotiationFailure*** - ***invalidParameters*** - ***noResponseFromPeer*** - ***configurationMismatch*** - ***failureNotApplicable***
Mib	IpSec
Values	noSaFailure negotiationFailure invalidParameters noResponseFromPeer configurationMismatch failureNotApplicable
Default	failureNotApplicable

COMPONENT Vr Ip Spd Ike Policy IkeSecurityAssociation (Sa)

Groups	GROUP Vr Ip Spd Ike Policy Sa Operational (Oper)
Scope	Application
Description	*Vr/s Ip Spd/s Ike Policy/n IkeSecurityAssociation*
Mib	IpSec
Common Verbs	Help List Display

GROUP Vr Ip Spd Ike Policy Sa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *IkeSecurityAssociation* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Ike Policy Sa upTime

Access	Read: All Write: Illegal
Description	This attribute indicates the time that has elapsed since this *IkeSecurityAssociation* component was created.

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Mib	IpSec
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Spd Ike Policy Sa **remainingTimeToLive**

Access	Read: All Write: Illegal
Description	This attribute indicates the lifetime remaining for this *IkeSecurityAssociation* component.
Mib	IpSec
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Spd Ike Policy Sa **maxTimeToLive (maxTtl)**

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum lifetime for the SA.
Mib	IpSec
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Spd Ike Policy Sa **numActiveIpSecSa**

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active Phase 2 security associations which used this *IkeSa*.
Mib	IpSec
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vr Ip Spd Ike Policy Sa **encryptionAlgorithm (encAlg)**

Access	Read: All Write: Illegal
Description	This attribute indicates which encryption algorithm has been negotiated for this *IkeSa*. The possible values are:

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- ***des***: data encryption standard (DES),
- ***3des***: encryption using DES three times
- aes: advanced encryption algorithm

Mib: IpSec

Values:
none
des
3des
aes

Default: No default

ATTRIBUTE Vr Ip Spd Ike Policy Sa authenticationAlgorithm (authAlg)

Access: Read: All
Write: Illegal

Description: This attribute indicates which authentication algorithm has been negotiated. The possible values are:
- ***md5***: message digest
- ***sha1***: secure hash algorithm

Mib: IpSec

Values:
none
sha1
md5

Default: No default

ATTRIBUTE Vr Ip Spd Ike Policy Sa diffieHellmanGroup (dhg)

Access: Read: All
Write: Illegal

Description: This attribute indicates which Diffie-Hellman group has been negotiated. The possible values are:
- ***group1***
- ***group2***

Mib: IpSec

Values:
none
gp1
gp2

Default: No default

ATTRIBUTE Vr Ip Spd Ike Policy Sa authenticationMethod (authMethod)

Access: Read: All
Write: Illegal

Description: This attribute indicates which authentication method has been negotiated. The only possible value is:
- ***preshared***

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Mib	IpSec
Values	preshared
Default	No default

ATTRIBUTE Vr Ip Spd Ike Policy Sa state

Access	Read: All Write: Illegal
Description	This attribute indicates the state of this *IkeSa*. The possible values are: - ***uninitialized*** - ***initialized*** - ***established*** - ***deleted***
Mib	IpSec
Values	uninitialized initialized established deleted
Default	uninitialized

COMPONENT Vr Ip Spd SecurityAssociationProposal (Proposal)

Instance	Decimal (1..24)
Groups	GROUP Vr Ip Spd Proposal Provisioned (Prov)
Scope	Application
Description	*Vr/s Ip Spd/n SecurityAssociationProposal/n* The *SecurityAssociationProposal* component represents the security parameters to be negotiated between two IPSec peers. This component must have one or more *SecurityAssociationTransform* subcomponents.
Mib	IpSec
Subcomponents	COMPONENT Vr Ip Spd Proposal IpSecSaTransform (Transform)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Spd Proposal Provisioned (Prov)

Properties	Provisioned

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Description	This group contains the provisionable attributes for the IPSec *SecurityAssociationProposal* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Proposal timeToLive (ttl)

Access	Read: All Write: System_admin
Description	This attribute specifies the proposed IPSec SA maximum time-to-live period.
Mib	IpSec
Values	Decimal (1800..172800)
Units	seconds
Default	28800

ATTRIBUTE Vr Ip Spd Proposal softLifetime

Access	Read: All Write: System_admin
Description	During negotiation of a security association with a peer, a maximum time to live for the SA is agreed upon and this is indicated by the *maxTimeToLive* attribute of the *SecurityAssociation* component. The SA must be renegotiated before the *maxTimeToLive* value expires. This attribute specifies a percentage of the *SecurityAssociation maxTimeToLive* attribute value. The corresponding time value (i.e., *maxTimeToLive*softLifetime*/100 seconds) specifies when renegotiation of the SA should commence.
Mib	IpSec
Values	Decimal (75..95)
Units	%
Default	75

ATTRIBUTE Vr Ip Spd Proposal ipSecPolicyList (pol)

Access	Read: All Write: System_admin
Description	This attribute lists all the IpSec *Policy* components that are linked to this component. This attribute is populated when an IpSec *Policy* component's *saProposal* attribute is linked to this *Proposal*.

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Mib	IpSec
List of	Link (Service, saProposal)
List Size	4096
Default	No default

COMPONENT Vr Ip Spd Proposal **IpSecSaTransform (Transform)**

Instance	Decimal (1..8)
Groups	GROUP Vr Ip Spd Proposal Transform Provisioned (Prov)
Scope	Application
Description	*Vr/s Ip Spd/n Proposal/n IpSecSaTransform/n* The *IpSecSaTransform* component represents the encryption and authentication parameters that can be used to negotiate an IPsec SA.
Mib	IpSec
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Spd Proposal Transform **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Transform* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Proposal Transform **encAlgorithm (encAlg)**

Access	Read: All Write: System_admin
Description	This attribute specifies the encryption algorithm to be proposed.
Mib	IpSec
Values	none des 3des aes
Default	des

ATTRIBUTE Vr Ip Spd Proposal Transform **authAlgorithm (authAlg)**

Access	Read: All Write: System_admin

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Description	This attribute specifies the authentication algorithm to be proposed. The following authentication algorithms are supported: - ***md5***: Message Digest; - ***sha1***: Secure Hash Algorithm .
Mib	IpSec
Values	sha1 md5
Default	sha1

ATTRIBUTE Vr Ip Spd Proposal Transform antiReplay (replay)

Access	Read: All Write: System_admin
Description	This attribute specifies whether anti-replay protection is on or off.
Mib	IpSec
Values	off on
Default	off

ATTRIBUTE Vr Ip Spd Proposal Transform diffieHellmanGroup (dhg)

Access	Read: All Write: System_admin
Description	This attribute specifies if PFS is on and if so, which Diffie-Hellman group is used to compute the private session key.
Mib	IpSec
Values	none gp1 gp2
Default	none

COMPONENT Vr Ip Filter (Filt)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip Filt Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip* Filter/<string> The Filter component specifies which set of IP packet flows are admitted at a protocol port. A Filter component can be assigned to the Ip component and any number of the Pp IpPort components under the same Vr component. A Filter assigned to a Vr Ip component is associated by default with all of the

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protocol ports on the virtual router. A Filter assigned to a Vr Pp IpPort component is associated with the protocol port only. A Filter assigned at the port overrides a Filter assigned at the virtual router.

A Filter associated with a protocol port is applied to all ingress IP traffic at that port; it is not applied to egress traffic at that port. Filtering is performed prior to making the forwarding decision that determines the egress port where the packet will be transmitted.
If no Filter component is associated with a port (because there is neither an assignment to the Vr Ip component, nor an assignment to the Vr Pp IpPort component) all IP packet flows are admitted at that port.

A Filter defined under one Vr cannot be assigned to components under another Vr.

A Filter component must have at least one *FilterFlow* subcomponent where the value of the *action* attribute is ***permit***.

Mib	IpFilt
Opt. Subcomp.	COMPONENT Vr Ip Filt FilterFlow (Flow)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Filt Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IpFilter* component.
Mib	IpFilt

ATTRIBUTE Vr Ip Filt linkToFilterUsers (users)

Access	Read and write
Description	This attributes specifies the *Ip* (per Virtual Router) and *IpPort* (per protocol port) components that this filter is assigned to.
Mib	IpFilt
List of	Link (Service, filterAssignment)
List Size	256
Default	No default

COMPONENT Vr Ip Filt FilterFlow (Flow)

Instance	Decimal (0..1023)

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Groups	GROUP Vr Ip Filt Flow Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Filter/<string> FilterFlow/n* This component specifies an IP packet flow and the filter action for that flow within an IP filter. A filter is defined by specifying one or more packet flows and the filter action for each flow. Each packet flow is defined in terms of source IP address and destination IP address. The filter action can be either ***permit*** or ***deny***. The filter action for any individual packet is determined by the flow which has the most specific match to the packet's header information. Any packet with header information that does not match any flow in the filter is dropped. If the filter action is ***permit*** the packet is processed and forwarded in the normal manner. If the filter action is ***deny*** the packet is dropped. When the source or destination address of an IP packet matches more than one of the specified flows under a filter, the following precedence rule is applied to determine which filter action to apply: Given a set of flows with overlapping source addresses, the match made with the most precise source address specification (that is the one with the greatest prefix length) is always given the highest precedence over all the others; once the source address specification is selected in this manner, if there exists several overlapping destination addresses, the match made with the most precise destination address specification (that is the one with the greatest prefix length) is used.
Mib	IpFilt
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Filt Flow Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *FilterFlow* component.
Mib	IpFilt

ATTRIBUTE Vr Ip Filt Flow saPrefix

Access	Read and write
Description	This attribute specifies the IP source address prefix for this flow. Matching an actual source address to the prefix is done in conjunction with the *saPrefixLength* attribute.

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A source address prefix of 0.0.0.0 means any source IP address is a match regardless of the prefix length.

When the source or destination address of an IP packet matches more than one of the specified flows under a filter, the following precedence rule is applied to determine which filter action to apply:

Given a set of flows with overlapping source addresses, the match made with the most precise source address specification (that is the one with the greatest prefix length) is always given the highest precedence over all the others; once the source address specification is selected in this manner, if there exists several overlapping destination addresses, the match made with the most precise destination address specification (that is the one with the greatest prefix length) is used.

Mib	IpFilt
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Filt Flow saPrefixLength (salen)

Access	Read and write
Description	This attribute specifies the number of most significant bits of the IP source address that are to be matched with the *saPrefix* attribute. A source prefix length of 0 means any IP source address is a match regardless of the prefix.
Mib	IpFilt
Values	Decimal (0..32)
Default	No default

ATTRIBUTE Vr Ip Filt Flow action

Access	Read and write
Description	This attribute specifies one of the following two filter actions to be taken for an IP packet that matches this flow: ***permit*** : the packet is processed normally ***deny*** : the packet is dropped. A *Filter* component must have at least one *FilterFlow* subcomponent where the filter action is ***permit***.
Mib	IpFilt
Values	deny permit
Default	permit

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ATTRIBUTE Vr Ip Filt Flow daPrefix

Access	Read and write
Description	This attribute specifies the IP destination address prefix for this flow. Matching an actual destination address to the prefix is done in conjunction with the daPrefixLength attribute. A destination address prefix of 0.0.0.0 means any destination IP address is a match regardless of the prefix length. When the source or destination address of an IP packet matches more than one of the specified flows under a filter, the following precedence rule is applied to determine which filter action to apply: Given a set of flows with overlapping source addresses, the match made with the most precise source address specification (that is the one with the greatest prefix length) is always given the highest precedence over all the others; once the source address specification is selected in this manner, if there exists several overlapping destination addresses, the match made with the most precise destination address specification (that is the one with the greatest prefix length) is used.
Mib	IpFilt
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Filt Flow daPrefixLength (dalen)

Access	Read and write
Description	This attribute specifies the number of most significant bits of the IP destination address that are to be matched with the *daPrefix* attribute. A destination prefix length of 0 means any IP destination address is a match regardless of the prefix.
Mib	IpFilt
Values	Decimal (0..32)
Default	No default

COMPONENT Vr Ip Multicast (Mcast)

Groups	GROUP Vr Ip Mcast AdministrativeControl (AdminControl) GROUP Vr Ip Mcast Provisioned (Prov) GROUP Vr Ip Mcast OsiState (State) GROUP Vr Ip Mcast OperationalStatus (OperStatus)
Scope	Application

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Description	*Vr/<string> Ip Multicast* This component provides support for IP Multicast. It does the inter semantic check for whether all cards are properly provisioned first.
Mib	IpMcast
Subcomponents	COMPONENT Vr Ip Mcast Domain
Opt. Subcomp.	COMPONENT Vr Ip Mcast Igmp COMPONENT Vr Ip Mcast Static COMPONENT Vr Ip Mcast PolicyGroup (Pg) COMPONENT Vr Ip Mcast PimSparseMode (PimSm)
Dyn. Subcomp.	COMPONENT Vr Ip Mcast ForwardTable (Fwd) COMPONENT Vr Ip Mcast Cache COMPONENT Vr Ip Mcast NeighborEntry (Nbr)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Mcast AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpMcast
Values	up down testing
Default	up

GROUP Vr Ip Mcast Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mcast* component.

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Mib	IpMcast

ATTRIBUTE Vr Ip Mcast borderRouterCapability (brc)

Access	Read and write
Description	This attributes specifies if this virtual router supports multicast border router functionality.
Mib	IpMcast
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Mcast cacheTableSize (cacheSize)

Access	Read and write
Description	This attribute specifies the maximum number of entries supported in the IP multicast cache table on each *Lp*. The default is 100 for a CP and 200 for an FP. The value must be multiple of 100 and not more than 500 for FPs and not more than 200 for the CPs.
Mib	IpMcast
Vector of	Decimal (100..500)
Index	Decimal (0..15)
Default	([1] 100, [15] 200)

GROUP Vr Ip Mcast OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: IpMcast

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip Mcast operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IpMcast

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Mcast usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: IpMcast

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Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Mcast OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpMcast
Values	up down testing
Default	up

COMPONENT Vr Ip Mcast Igmp

Groups	GROUP Vr Ip Mcast Igmp AdministrativeControl (AdminControl) GROUP Vr Ip Mcast Igmp OsiState (State) GROUP Vr Ip Mcast Igmp OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip Multicast Igmp* This component provides support for the IGMP protocol. The IGMP protocol is used between routers and locally attached hosts to communicate multicast group memebership information. A host sends a membership report in order to join a multicast group. A router periodically

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sends membership queries on a network to confirm the continued presence of interested hosts.

Mib	IpMcast
Dyn. Subcomp.	COMPONENT Vr Ip Mcast Igmp Cache
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Mcast Igmp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Igmp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpMcast
Values	up down testing
Default	up

GROUP Vr Ip Mcast Igmp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Igmp adminState (osiAdmin)

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Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpMcast
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Mcast Igmp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IpMcast
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Mcast Igmp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

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	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpMcast
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Mcast Igmp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Igmp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpMcast
Values	up down testing
Default	up

COMPONENT Vr Ip Mcast Igmp Cache

Instance	groupAddr (gAddr) [IP address] domain (dom) [Decimal (0..3)] protocolPortName (ppName) [String (1..20, ASCII)]
Groups	GROUP Vr Ip Mcast Igmp Cache Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Multicast Igmp Cache <Group IP Address>, <Domain>, <ProtocolPort name>* This component represents an entry in the IGMP cache table. It is dynamically learned via IGMP. The keys to make an instance of this component are: gAddr : the IP address of the group

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domain: multicast domain
ppName: protocol port name

Mib	IpMcast
Common Verbs	Help List Display

GROUP Vr Ip Mcast Igmp Cache Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Cache* component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Igmp Cache upTime

Access	Read only
Description	This attribute indicates the time elapsed since this entry was created.
Mib	IpMcast
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vr Ip Mcast Igmp Cache expiryTime

Access	Read only
Description	This attribute indicates the minimum amount of time remaining before this entry will be aged out.
Mib	IpMcast
Values	Time (HMS)
Default	No default

ATTRIBUTE Vr Ip Mcast Igmp Cache lastReporter

Access	Read only
Description	This attribute indicates the IP address of the source of the last membership report received for this IP multicast group address on this *ProtocolPort*. If no membership report has been received, this attribute has the value 0.0.0.0.
Mib	IpMcast
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Mcast Igmp Cache version1HostTimer

Access	Read only

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Description	This attribute indicates the time remaining until the local router will assume that there are no longer any IGMPv1 members on the IP subnet attached to this *ProtocolPort*. Upon hearing any IGMPv1 Membership Report, this value is reset to the group membership timer.
Mib	IpMcast
Values	Decimal (0..4294967295)
Units	seconds
Default	0

COMPONENT Vr Ip Mcast Static

Groups	GROUP Vr Ip Mcast Static OsiState (State)
Scope	Application
Description	*Vr/<string> Ip Mcast Static* This component provides support for multicast static routes.
Mib	IpMcast
Opt. Subcomp.	COMPONENT Vr Ip Mcast Static RouteEntry (Route)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Mcast Static OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Static adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — IpMcast

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr Ip Mcast Static operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — IpMcast

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Ip Mcast Static usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — IpMcast

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Values	idle active (activ) busy
Default	idle

COMPONENT Vr Ip Mcast Static RouteEntry (Route)

Instance	gAddr (addr) [IP address] domain (dom) [Decimal (0..3)]
Groups	GROUP Vr Ip Mcast Static Route Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Mcast Static RouteEntry/*<IP Address>,<Domain> This component represents a multicast static route entry. For a *RouteEntry* to be valid, there should be at least one *outInterface* provisioned.
Mib	IpMcast
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Mcast Static Route Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for component *RouteEntry*.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Static Route outInterfaces (oifs)

Access	Read and write
Description	This attribute specifies a list of links to *LogicalInterfaces* representing the outgoing interfaces for this multicast static route entry. Each *RouteEntry* must be provisioned with at least one outgoing interface, and each *RouteEntry* can be provisioned with up to 256 outgoing interfaces.
Mib	IpMcast
List of	Link (Service, linkToMulticastStaticGroup)
List Size	256
Default	No default

COMPONENT Vr Ip Mcast PolicyGroup (Pg)

Instance	String (1..20, ASCII)
Groups	GROUP Vr Ip Mcast Pg Provisioned (Prov)

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Scope	Application
Description	*Vr/<string> Ip Mcast PolicyGroup/<string>* This component represents a multicast group join policy, which may be applied to one or more IpPorts.
Mib	IpMcast
Opt. Subcomp.	COMPONENT Vr Ip Mcast Pg Group (Grp)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Mcast Pg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *PolicyGroup* component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Pg action

Access	Read and write
Description	This attribute specifies the action to be taken if a join request is received for any of the multicast group addresses configured as part of this policy. The default action is to deny the join request.
Mib	IpMcast
Values	deny allow
Default	deny

ATTRIBUTE Vr Ip Mcast Pg linkToPolicyUser

Access	Read and write
Description	This attribute specifies a list of IpPorts on which this policy group is applied and all the IpPorts must belong to the same virtual router.
Mib	IpMcast
List of	Link (Service, mcastPolicyAssignment)
List Size	256
Default	No default

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COMPONENT Vr Ip Mcast Pg Group (Grp)

Instance	gAddr (addr) [IP address] gMask (mask) [IP address]
Scope	Application
Description	Vr/*<string> Ip Mcast Pg/<string> Group/<IpAddress>, <IpAddress>* This component specifies a range of multicast addresses for which the policy group applies. The range is specified as an IP address and mask combination. There is a limit of 100 *Group* components under the same *PolicyGroup.*
Mib	IpMcast
Common Verbs	Help List Display Add DELete

COMPONENT Vr Ip Mcast Domain

Instance	Decimal (0..3)
Groups	GROUP Vr Ip Mcast Domain Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Multicast Domain* This component represents a multicast domain. All routers participating in the domain use the same multicast protocol for all the intefaces in the domain.
Mib	IpMcast
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Mcast Domain Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Domain* component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Domain protocolActive

Access	Read only
Description	This attribute indicates the multicast protocol active in this domain.

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Mib	IpMcast
Values	none pimSparseMode local
Default	none

COMPONENT Vr Ip Mcast ForwardTable (Fwd)

Instance	gAddr (grp) [IP address] domain (dom) [Decimal (0..3)] srcAddr (src) [IP address] srcMask (mask) [IP address]
Groups	GROUP Vr Ip Mcast Fwd Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Mcast ForwardTable/<IP Address>,<Connection Index>* This component represents an IP multicast forwarding entry.
Mib	IpMcast
Dyn. Subcomp.	COMPONENT Vr Ip Mcast Fwd OutInterface (Oif)
Common Verbs	Help List Display

GROUP Vr Ip Mcast Fwd Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes associated with a multicast forwarding entry.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Fwd age

Access	Read only
Description	This attribute indicates the number of seconds since this route was last updated.
Mib	IpMcast
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd inProtocolPortName (inPpName)

Access	Read only

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Description	This attribute indicates the name of the (incoming) protocol port from which the route was learned.
Mib	IpMcast
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd reversePathForwardingNeighbor (rpfNbr)

Access	Read only
Description	This attribute indicates the address of the upstream neighbor (RPF neighbor) from which IP datagrams from these sources to this multicast address are received.
Mib	IpMcast
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd flags

Access	Read only
Description	This attribute indicates state concerning the forwarding entry. In particular, the flag state indicates wildcard, SPT, RPT, and Reg entries.
Mib	IpMcast
Values	String (3..20, ASCII)
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd protocol

Access	Read only
Description	This attribute indicates the multicast routing protocol via which this multicast forwarding entry was learned.
Mib	IpMcast
List of	none other local pimSparse pimDense dvmrp igmp igmpOnly
Default	No default

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COMPONENT Vr Ip Mcast Fwd OutInterface (Oif)

Instance	outIfAddress (addr) [IP address] connectionIndex (index) [Decimal (0..65535)]
Groups	GROUP Vr Ip Mcast Fwd Oif Operational (Oper)
Scope	Application
Description	Vr/<string> Ip Mcast Fwd/ *<IpAddress>,<Decimal>,<IpAddress><IpAddress>* OutInterface/ *<IpAddress>,<Decimal>* This component represents an outgoing interface for a multicast forwarding entry.
Mib	IpMcast
Common Verbs	Help List Display

GROUP Vr Ip Mcast Fwd Oif Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *OutInterface* component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Fwd Oif ifIndex

Access	Read only
Description	This attribute indicates the *ifIndex* value of this outgoing interface entry.
Mib	IpMcast
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd Oif age

Access	Read only
Description	This attribute indicates the number of seconds since this route was last updated
Mib	IpMcast
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd Oif outProtocolPort (outPp)

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Access	Read only
Description	This attribute indicates the name of the protocol port by which the next hop of this route should be reached.
Mib	IpMcast
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd Oif protocol

Access	Read only
Description	This attribute indicates the multicast routing protocol from which this outinterface entry was learned.
Mib	IpMcast
List of	none other local pimSparse pimDense dvmrp igmp igmpOnly
Default	No default

COMPONENT Vr Ip Mcast Cache

Instance	Decimal (0..15)
Groups	GROUP Vr Ip Mcast Cache OsiState (State) GROUP Vr Ip Mcast Cache Operational (Oper)
Scope	Application
Description	*Vr/<string> Ip Mcast CacheStats/n* This component represents the IP MCAST cache table on an LP. This component is dynamically created. One per LP so there are 16 of them.
Mib	IpMcast
Common Verbs	Help List Display

GROUP Vr Ip Mcast Cache OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described

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here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib IpMcast

ATTRIBUTE Vr Ip Mcast Cache adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib IpMcast

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Vr Ip Mcast Cache operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib IpMcast

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Vr Ip Mcast Cache usageState (osiUsage)

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Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpMcast
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Mcast Cache Operational (Oper)

Properties	Operational
Description	This group houses all the operational attributes of an *Ip* cache table.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Cache entriesFree (ef)

Access	Read only
Description	This attribute is indicative of the number of free *Ip* cache table entries. A consistently high value for this attribute indicates that there is a resource surplus of the memory requirements for cache table. This surplus could be utilized elsewhere if needed by adjusting the appropriate *cacheTableMaxEntries* attribute. For *Vr*, *cacheTableMaxEntries* is under the *Ip* component; for *Rtr* and *Vrf*, it is under the respective components.
Mib	IpMcast
Values	Decimal (0..8000)
Default	No default

ATTRIBUTE Vr Ip Mcast Cache totalLookups (tl)

Access	Read only
Description	This attribute indicates the total number of local cache lookups. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	IpMcast
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Vr Ip Mcast Cache **lookupMisses (lm)**

Access	Read only
Description	This attribute indicates the total number of local cache lookup misses. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	IpMcast
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Mcast Cache **cacheTableMaxEntries (ctme)**

Access	Read only
Description	This attribute indicates the current maximum number of entries that can exist in the IP local cache table on each LP.
Mib	IpMcast
Values	Decimal (0..8000)
Default	No default

COMPONENT Vr Ip Mcast **PimSparseMode (PimSm)**

Groups	GROUP Vr Ip Mcast PimSm AdministrativeControl (AdminControl) GROUP Vr Ip Mcast PimSm OsiState (State) GROUP Vr Ip Mcast PimSm OperationalStatus (OperStatus)
Scope	Application
Description	*Vr/<string> Ip Mcast PimSm* The Protocol Independent Multicast Sparse Mode (PIM-SM) component represents a multicast protocol which can be used to efficiently route multicast traffic to multicast groups that may span wide-area internets. The PIM-SM is referred as protocol independent multicast because it is not dependent on any particular unicast routing protocol and it is designed to support groups which are sparsely located.
Mib	IpPim
Opt. Subcomp.	COMPONENT Vr Ip Mcast PimSm Domain
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Mcast PimSm **AdministrativeControl (AdminControl)**

Properties	Provisioned

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Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpPim
Values	up down testing
Default	up

GROUP Vr Ip Mcast PimSm OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpPim

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Mcast PimSm operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IpPim
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Mcast PimSm usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpPim
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Mcast PimSm OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpPim

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ATTRIBUTE Vr Ip Mcast PimSm snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpPim
Values	up down testing
Default	up

COMPONENT Vr Ip Mcast PimSm Domain

Instance	Decimal (0..3)
Groups	GROUP Vr Ip Mcast PimSm Domain Provisioned (Prov) GROUP Vr Ip Mcast PimSm Domain Operational (Oper) GROUP Vr Ip Mcast PimSm Domain Statistics (Stats)
Scope	Application
Description	Vr/<string> Ip Mcast PimSm domain/n The Domain component represents a logical link to the Domain component under Mcast component. A PIM domain is a set of contiguous routers which implement the PIM protocol configured to operate within a common boundary. Information relevant to a domain are included under the PimSm Domain component. The domain number is checked to ensure it exists under Mcast Domain component.
Mib	IpPim
Opt. Subcomp.	COMPONENT Vr Ip Mcast PimSm Domain CandidateRendezvousPoint (CRP) COMPONENT Vr Ip Mcast PimSm Domain CandidateBootstrapRouter (CBsr)
Dyn. Subcomp.	COMPONENT Vr Ip Mcast PimSm Domain RendezvousPoint (RpSet)
Common Verbs	Help List Display Add DELete

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VERB RpHash Vr Ip Mcast PimSm Domain

Impact	Passive
Description	*RpHash -gAddr(Ip Address) Vr/<string> Ip Mcast PimSm Domain/n* The *RpHash* verb is intended for trouble-shooting RP address at the PIM protocol domain level. The verb takes a multicast group (IP) address as an argument and finds the corresponding RP for that group address. If the *RpHash* is successful, it outputs the IP Address of the RP.

GROUP Vr Ip Mcast PimSm Domain **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Domain* component under the *PimSm* component.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain **joinPruneInterval (jp)**

Access	Read and write
Description	This attribute specifies the frequency at which PIM Join/Prune messages are transmitted on this PIM domain.
Mib	IpPim
Values	Decimal (5..4292967295)
Units	seconds
Default	60

ATTRIBUTE Vr Ip Mcast PimSm Domain **sptJoinThreshold (spt)**

Access	Read and write
Description	The attribute specifies the threshold at which the last-hop router joins the shortest-path tree. If immediate is selected then the router immediately joins the shortest path tree upon receipt of the first data packet. If never is selected then the router never joins the shortest path tree.
Mib	IpPim
Values	immediate never
Default	never

GROUP Vr Ip Mcast PimSm Domain **Operational (Oper)**

Properties	Operational
Description	This group contains the operational attributes of the *Domain* component under the *PimSm* component.
Mib	IpPim

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ATTRIBUTE Vr Ip Mcast PimSm Domain **bsrAddress (bsr)**

Access	Read only
Description	This attribute indicates the IP address of the bootstrap router (BSR) for this PIM domain.
Mib	IpPim
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **bsrExpiryTimer (bsrExpiry)**

Access	Read only
Description	This attribute indicates the minimum time remaining before the bootstrap router in this domain will be declared down.
Mib	IpPim
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

GROUP Vr Ip Mcast PimSm Domain **Statistics (Stats)**

Properties	Operational
Description	This group contains the statistics attributes of the *Domain* component under the *PimSm* component.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain **txBsrMsgs**

Access	Read only
Description	This attribute counts the Bootstrap Message transmitted by the BootStrap Router (BSR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **rxBsrMsgs**

Access	Read only
Description	This attribute counts the Bootstrap Message received by this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)

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Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **txCRpAdvMsgs**

Access	Read only
Description	This attribute counts the Candidate-RP Advertisement Message transmitted by the configured C-RP for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **rxCRpAdvMsgs**

Access	Read only
Description	This attribute counts the Candidate-RP Advertisement Message received by the BootStrap Router (BSR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **txHelloMsgs**

Access	Read only
Description	This attribute counts the Hello Message transmitted from PimIf belonging to this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **rxHelloMsgs**

Access	Read only
Description	This attribute counts the Hello Message received from PimIf belonging to this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **txRegisterMsgs**

Access	Read only

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Description	This attribute counts the Register Message transmitted by the Designated Router (DR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **rxRegisterMsgs**

Access	Read only
Description	This attribute counts the Register Message received by the RP for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **txRegisterStopMsgs**

Access	Read only
Description	This attribute counts the Register-Stop Message transmitted by the RP for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **rxRegisterStopMsgs**

Access	Read only
Description	This attribute counts the Register-Stop Message received by the Designated Router (DR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **txAssertMsgs**

Access	Read only
Description	This attribute counts the Assert Message transmitted from this PIM domain. This counter wraps to zero when the maximum value is exceeded.

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Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **rxAssertMsgs**

Access	Read only
Description	This attribute counts the Assert Message received by this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **txJPMsgs**

Access	Read only
Description	This attribute counts the JP Message transmitted for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **rxJPMsgs**

Access	Read only
Description	This attribute counts the JP Message received by this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **discardBsrMsgs**

Access	Read only
Description	This attribute counts the Bootstrap Message discarded by this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **discardCRpAdvMsgs**

Access	Read only

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Description	This attribute counts the Candidate-RP Advertisement Message discarded by the BootStrap Router (BSR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **discardHelloMsgs**

Access	Read only
Description	This attribute counts the Hello Message discarded if it is not destined for this virtual router. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **discardRegisterMsgs**

Access	Read only
Description	This attribute counts the Register Message discarded if this virtual router is not the RP for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **discardRegisterStopMsgs**

Access	Read only
Description	This attribute counts the Register-Stop Message discarded. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **discardAssertMsgs**

Access	Read only
Description	This attribute counts the unexpected Assert Message discarded. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)

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Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain **discardJPMsgs**

Access	Read only
Description	This attribute counts the JP Message discarded by this PIM domain if it is not destined for this virtual router. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Ip Mcast PimSm Domain **CandidateRendezvousPoint (CRP)**

Groups	GROUP Vr Ip Mcast PimSm Domain CRP Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip Mcast PimSm Domain/n CRP* This component specifies that this router should advertise itself as a Candidiate RP (C-RP).
Mib	IpPim
Opt. Subcomp.	COMPONENT Vr Ip Mcast PimSm Domain CRP Group (Grp)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Mcast PimSm Domain CRP **Provisioned (Prov)**

Properties	Provisioned
Description	This group specifies all the attributes for component *CandidateRendezvousPoint*.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain CRP **address (addr)**

Access	Read and write
Description	This attribute specifies a link to a logical interface component which specifies an IP address to be used as the local identifier in C-RP advertisement messages.
Mib	IpPim
Values	Link (Service, linkToPimSmCandidateRp)
Default	No default

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ATTRIBUTE Vr Ip Mcast PimSm Domain CRP preference (pref)

Access	Read and write
Description	This attribute specifies the preference value to be used in C-RP advertisement messages. Lower values indicate higher preference.
Mib	IpPim
Values	Signed (0..255)
Default	0

COMPONENT Vr Ip Mcast PimSm Domain CRP Group (Grp)

Instance	grpAddress (gAddr) [IP address] grpMask (gMask) [IP address]
Scope	Application
Description	*Vr/<string> Ip Mcast PimSm Domain/n CRP Group/<gAddr>,<gMask>* This component specifies an IP multicast group address and mask which when combined identifies a group prefix for which the local router will advertise itself as a Candidate RP.
Mib	IpPim
Common Verbs	Help List Display Add DELete

COMPONENT Vr Ip Mcast PimSm Domain RendezvousPoint (RpSet)

Instance	grpAddress (gAddr) [IP address] grpMask (gMask) [IP address] rpAddress (addr) [IP address]
Groups	GROUP Vr Ip Mcast PimSm Domain RpSet Operational (Oper)
Scope	Application
Description	Vr/<string> Ip Mcast PimSm Domain/n RpSet/<gAddr>,<gMask>,<addr>. This component indicates the IP address of a router which advertises itself as a Candidate RP.
Mib	IpPim
Common Verbs	Help List Display

GROUP Vr Ip Mcast PimSm Domain RpSet Operational (Oper)

Properties	Operational

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Description	This group contains the operational attributes for a Candidate RP.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain RpSet **rpSetHoldTime (holdTime)**

Access	Read only
Description	This attribute indicates the holdtime of a Candidate RP. If the local router is not the BSR, this value is 0.
Mib	IpPim
Values	Decimal (0..255)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain RpSet **rpSetExpiryTime (expiry)**

Access	Read only
Description	This attribute indicates the minimum time remaining before the Candidate RP will be declared down. If the local router is not the BSR, this value is 0.
Mib	IpPim
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain RpSet **rpSetPriority (prio)**

Access	Read only
Description	This attribute indicates the priority advertised by BSR for this C-RP. If the local router is the BSR, this value specifies the priority advertised by C-RP.
Mib	IpPim
Values	Signed (0..255)
Default	No default

COMPONENT Vr Ip Mcast PimSm Domain **CandidateBootstrapRouter (CBsr)**

Groups	GROUP Vr Ip Mcast PimSm Domain CBsr Provisioned (Prov)
Scope	Application

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Description	*Vr/<string> Ip Mcast PimSm Domain/n CBsr* This component specifies that this router should advertise iteself as a Candidate BootStrap Router (C-BSR).
Mib	IpPim
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Mcast PimSm Domain CBsr **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains all the provisionable attributes for component *CandidateBootstrapRouter.*
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain CBsr **address (addr)**

Access	Read and write
Description	This attribute specifies a link to a logical interface component which specifies an IP address to use as the local system identifier in bootstrap messages.
Mib	IpPim
Values	Link (Service, linkToPimSmCandidateBsr)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain CBsr **preference (pref)**

Access	Read and write
Description	This attribute specifies the preference value used in bootstrap messages. Higher values indicate higher priority.
Mib	IpPim
Values	Signed (0..255)
Default	0

COMPONENT Vr Ip Mcast **NeighborEntry (Nbr)**

Instance	nbrAddress (addr) [IP address] domainIndex (domain) [Decimal (0..3)]
Groups	GROUP Vr Ip Mcast Nbr Operational (Oper)
Scope	Application

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Description	Vr/<string> Ip Mcast NeighborEntry/<Ip Address>, <Decimal> This component identifies a neighbouring PIM-enabled router by its address and the PIM domain it belongs to.
Mib	IpPim
Common Verbs	Help List Display

GROUP Vr Ip Mcast Nbr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PimNeighborEntry* componnent.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast Nbr ifIndex

Access	Read only
Description	This attribute indicates the value of ifIndex for the interface used to reach this PIM neighbor.
Mib	IpPim
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Ip Mcast Nbr upTime

Access	Read only
Description	This attribute indicates the time since this PIM neighbor became a neighbor of this local router.
Mib	IpPim
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast Nbr expiryTimer

Access	Read only
Description	This attribute indicates the minimum time remaining before this PIM neighbor will be aged out.
Mib	IpPim
Values	Decimal (0..4294967295)
Units	seconds

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Default	No default

COMPONENT Vr Ip MBgpRouteDistributionClient (MBgp)

Groups	GROUP Vr Ip MBgp Provisioned (Prov) GROUP Vr Ip MBgp Operational (Oper) GROUP Vr Ip MBgp OsiState (State)
Scope	Application
Description	*Vr/<string> Ip MBgpRouteDistributionClient* The *MBgpRouteDistributionClient* component is used to configure multi-protocol BGP route distribution for this virtual router. This component can be added only if the *vpnMode* attribute of this *VirtualRouter* is set to ***customer***.
Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip MBgp ImportPolicy (Import) COMPONENT Vr Ip MBgp ExportPolicy (Export)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip MBgp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *MBgp* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp defaultMBgpRtePreference (pref)

Access	Read and write
Description	This attribute specifies the default routing preference assigned to MBGP routes for this virtual router. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..253)
Default	123

ATTRIBUTE Vr Ip MBgp importRoutesLimit (importl)

Access	Read and write

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Description	This attribute specifies the maximum number of MBGP routes to be imported to this virtual router's routing table from the associated VCG virtual router.
Mib	Ip
Values	Decimal (1..65535)
Default	300

ATTRIBUTE Vr Ip MBgp exportRoutesLimit (exportl)

Access	Read and write
Description	This attribute specifies the maximum number of routes to be exported from this virtual router's routing table to the MBGP routing database of the associated VCG virtual router.
Mib	Ip
Values	Decimal (1..65535)
Default	50

GROUP Vr Ip MBgp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *MBgp* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp importRoutes

Access	Read only
Description	This attribute indicates the number of MBGP routes that have been imported to this virtual router's routing table from the associated VCG virtual router.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip MBgp exportRoutes

Access	Read only
Description	This attribute indicates the number of MBGP routes that have been exported from this virtual router's routing table to the MBGP routing database of the associated VCG virtual router. Only routes that are allowed to be exported by the export policies are included in this number.
Mib	Ip
Values	Decimal (0..4294967295)

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Default	0

GROUP Vr Ip MBgp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip MBgp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip MBgp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or

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with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Ip

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Ip MBgp usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — Ip

Values — idle
active (activ)
busy

Default — idle

COMPONENT Vr Ip MBgp ImportPolicy (Import)

Instance — Decimal (0..65535)

Groups — GROUP Vr Ip MBgp Import Provisioned (Prov)

Scope — Application

Description — *Vr/<string> Ip MBgp ImportPolicy/n*
Each instance of this component defines a MBGP import policy. A MBGP import policy is used to decide whether certain routing information learned from the associated VCG BGP instance is to be used or ignored.

If no import policy is provisioned, MBGP accepts all routes received from the associated VCG BGP. If multiple import policies are provisioned, the policy with the most specific match to the received route is applied.

Example 1:
Two import policies are defined:
vr/0 ip mbgp import/1, *peer* = ***0.0.0.0***, *usageFlag* = ***use***
vr/0 ip mbgp import/2, *peer* = ***47.138.190.1***, *usageFlag* = ***ignore***
This example specifies that MBGP should import all routes from the MBGP routing database of the associated VCG virtual router, except

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routes learned from the VCG peer 47.138.190.1.

Example 2:
Two import policies are defined:
vr/0 ip mbgp import/1, *peer* = ***0.0.0.0***, *usageFlag* = ***use***
vr/0 ip mbgp import/2, *peer* = ***47.138.190.1***, *usageFlag* = ***ignore***
vr/0 ip mbgp import/2 network/1, *prefix* = ***50.0.0.0***, *length* = ***8***
This example specifies that MBGP should import all routes from the MBGP routing database of the associated VCG virtual router, except routes learned from the VCG peer 47.138.190.1 which match the network prefix address 50.0.0.0/8.

Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip MBgp Import Network (Net)
Common Verbs	Help List Display Add DELete

GROUP **Vr Ip MBgp Import** **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisionable attributes for the *ImportPolicy* component.
Mib	Ip

ATTRIBUTE **Vr Ip MBgp Import** **vcgPeerIpAddress (vcgPeer)**

Access	Read and write
Description	This attribute specifies the IP address of the peer from which MBGP routes are learned. A value of ***0.0.0.0*** matches any peer IP address.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE **Vr Ip MBgp Import** **usageFlag (usage)**

Access	Read and write
Description	This attribute specifies whether this virtual router uses or ignores MBGP routing entries which match the criteria for this import policy.
Mib	Ip
Values	use ignore

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Default	use

ATTRIBUTE Vr Ip MBgp Import originAs

Access	Read and write
Description	This key attribute specifies the autonomous system number where the routes were originated. A value of 0 for this attribute means origin AS number will match any AS number.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip MBgp Import originProtocol

Access	Read and write
Description	This key attribute specifies the protocols that originated the routes. A value of ***incomplete*** for this attribute means this information is not available. A value of ***any*** for this attribute means that any originating protocol will match this import policy.
Mib	Ip
Values	any igp egp incomplete
Default	any

ATTRIBUTE Vr Ip MBgp Import asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the received update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which make up a AS path. The following characters has the special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. 'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. '[n1 ... n2]' - Matches any AS number that appeared in the set n1 ... n2. 'n1 - n2' - Matches any AS number between the range of n1 and n2.

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'()' - is supported to change the order of evaluation.
'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
'n?' - Matches 0 or 1 occurrences of n, where n can be a AS set, range or number.
The following logical operators are evaluated in decending order:
'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4 .* 1
Empty regular expression implies a match on all AS path.

Mib	Ip
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip MBgp Import **communityExpression (comExpr)**

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number seperated by a space which make up a Community attribute. The following characters has the special meaning: '[n1 ... n2]' - Matches any Community number that appeared in the set n1 ...n2. 'n1 - n2' - Matches any Community number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number.

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The following logical operators are evaluated in decending order:
'NOT' - Given a regular expression x, NOT x matches the Community attribute that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y.
For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	Ip
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip MBgp Import matchPreference (matchPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *asPathExpression* and *communityExpression*. This attribute is ignored if attributes *asPathExpression* and *communityExpression* are both empty. This attribute is used to break the tie when two import policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy. Two import policies having the same *matchPreference* are considered duplicate policies if the *asPathExpression* attribute and the *communityExpression* attribute are not both empty.
Mib	Ip
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip MBgp Import localPreference (locPrf)

Access	Read and write
Description	This attribute specifies the degree of preference for those routes that match the criteria of this import policy. A higher value indicates a more preferred route. A value of 0 for this attribute means that the local preference value remains unchanged.
Mib	Ip

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip MBgp Import mbgpRtePreference (mbgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of MBGP routes matching this import policy. A lower value means the route is more preferred. If ***sameAsMBgp*** is specified, the value of *defaultMbgpRtePref* set under the *MBgp* component is used. Otherwise the value of this attribute will be used as the routing preference.
Mib	Ip
Values	Decimal (1..253) sameAsMBgp
Default	sameAsMBgp

COMPONENT Vr Ip MBgp Import Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip MBgp Import Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip MBgp Import/n Network/n* *Vr/<string> Ip MBgp Export/n Network/n* Each *Network* component instance specifies a destination network address prefix that this MBGP import or export policy applies to. If no *Network* component is provisioned under the *Policy* component, the policy applies to all destination network address prefixes.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip MBgp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Network* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp Import Net prefix

Access	Read and write

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Description	This attribute specifies the network address prefix. The prefix length is specified by the *length* attribute.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip MBgp Import Net length

Access	Read and write
Description	This attribute specifies the length of the network address prefix. The prefix is specified by the *prefix* attribute.
Mib	Ip
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Vr Ip MBgp ExportPolicy (Export)

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip MBgp Export Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip MBgp ExportPolicy/n* Each instance of this component defines a MBGP export policy. A MBGP export policy is used to decide whether locally learned routing information is to be sent or blocked. If no export policy is provisioned, MBGP exports all routes into the MBGP routing database of the associated VCG virtual router, except those learned from IBGP and MBGP. If multiple export policies are provisioned, the policy with the most specific match to the route is applied. Example 1: Two export policies are defined: *vr/0 ip mbgp export/1*, *protocol* = ***all,*** *advertiseStatus* = ***send*** *vr/0 ip mbgp export/2*, *protocol* = ***rip***, *advertiseStatus* = ***block*** This example specifies that MBGP should export all routes in this virtual router's routing table, except routes learned from RIP. Example 2: Two export policies are defined: *vr/0 ip mbgp export/2*, *protocol* = ***all***, *advertiseStatus* = ***send*** *vr/0 ip mbgp export/3, protocol* = ***rip***, *advertiseStatus* = ***block*** *vr/0 ip mbgp export/3 network/1*, *prefix* = ***47.0.0.0***, *length* = ***8*** This example specifies that MBGP exports all routes in this virtual router's

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routing table except routes learned from RIP which match the network address prefix 47.0.0.0/8.

Mib	Ip
Opt. Subcomp.	COMPONENT Vr Ip MBgp Export Network (Net)
Common Verbs	Help List Display Add DELete

GROUP Vr Ip MBgp Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Export* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp Export protocol

Access	Read and write
Description	This attribute specifies which protocol the export policy applies to. If the value is ***all***, the export policy is applied to routes from all protocols in the IP routing table.
Mib	Ip
Values	all rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal bgpAggregate
Default	all

ATTRIBUTE Vr Ip MBgp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether routing data which match the criteria for this policy are exported.
Mib	Ip
Values	send block
Default	send

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ATTRIBUTE Vr Ip MBgp Export **bgpAsId (bgpAs)**

Access	Read and write
Description	This key attribute specifies the adjacent autonomous system (AS) number of the routes as a matching criteria. This corresponds to the first AS number in the AS Path. When this value is non-zero, the *protocol* attribute must be set to either ***bgpInternal*** or ***bgpExternal***.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip MBgp Export **ospfTag**

Access	Read and write
Description	This key attribute specifies the OSPF tag when the *protocol* attribute is set to either ***ospfInternal*** or ***ospfExternal***. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag is not specified.
Mib	Ip
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Vr Ip MBgp Export **ripInterface (ripIf)**

Access	Read and write
Description	This key attribute specifies the local RIP interface where the routes are learned from. The *ripInterface* attribute when non-zero should be equal to one of the IP addresses provisioned as a *LogicalIf* component under *IpPort*. Otherwise, this attribute will be ignored. The value of the *protocol* attribute must be set to ***rip*** if the value for the *ripInterface* attribute is non-zero.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip MBgp Export **ripNeighbor (ripNbr)**

Access	Read and write
Description	This key attribute specifies the RIP neighbor where the routes were learned from.

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The value of the *protocol* attribute must be set to ***rip*** if the value for the *ripNeighbor* attribute is non-zero.

Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip MBgp Export asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the export update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which make up a AS path. The following characters has the special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. 'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. '[n1 ... n2]' - Matches any AS number that appeared in the set n1 ... n2. 'n1 - n2' - Matches any AS number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in decending order: 'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x. 'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y. 'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y. For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions: ***1$,*** ***^5,*** ***4 3,***

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5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4 .* 1
Empty regular expression implies a match on all AS path.

Mib	Ip
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip MBgp Export **communityExpression (comExpr)**

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which make up a Community attribute. The following characters has the special meaning: '[n1 ... n2]' - Matches any Community number that appeared in the set n1 ...n2. 'n1 - n2' - Matches any Community number between the range of n1 and n2. '()' - is supported to change the order of evaluation. 'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number. 'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number. 'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in decending order: 'NOT' - Given a regular expression x, NOT x matches the Community attribute that is not matched by x. 'AND'- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y. 'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y. For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression: ***1,*** ***5,*** ***4 3,*** ***2 3 - 4*,*** ***1 [3 4 2]+,*** ***not (6 7 8 9 10) and 1 2*** Empty regular expression implies a match on all Community path.
Mib	Ip
Values	String (0..255, ASCII)

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Default	No default

ATTRIBUTE Vr Ip MBgp Export matchPreference (matchPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *asPathExpression* and *communityExpression*. This attribute is ignored if attributes *asPathExpression* and *communityExpression* are both empty. This attribute is used to break the tie when two export policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy. Two export policies having the same *matchPreference* are considered duplicate policies if the *asPathExpression* attribute and the *communityExpression* attribute are not both empty.
Mib	Ip
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip MBgp Export localPreference (locPrf)

Access	Read and write
Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes exported to the VCG. A value of 0 means that the local preference value remains unchanged.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip MBgp Export insertDummyAs (insertAs)

Access	Read and write
Description	This attribute specifies the AS number(s) to be inserted into the AS Path Attribute. The value is a sequence of AS number separated by period(.). For example, if the value is ***20.20.30***, the AS numbers 20, 20 and 30 would be inserted at the end of the AS Path Attribute just before the local AS number. The number of AS(s) specified by the attribute can not exceed 25. And the value of each AS number must be within the range of 1 to 65535.
Mib	Ip
Values	Integer Sequence
Default	No default

ATTRIBUTE Vr Ip MBgp Export sendCommunity (sendCom)

Access	Read and write

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Description	This attribute indicates which community number this export policy will pass to the VCG. If the value is set to 0, the Community value remains unchanged.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip MBgp Export Network (Net)

Instance	Decimal (0..65535)
Groups	GROUP Vr Ip MBgp Export Net Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ip MBgp Import/n Network/n* *Vr/<string> Ip MBgp Export/n Network/n* Each *Network* component instance specifies a destination network address prefix that this MBGP import or export policy applies to. If no *Network* component is provisioned under the *Policy* component, the policy applies to all destination network address prefixes.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip MBgp Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Network* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp Export Net prefix

Access	Read and write
Description	This attribute specifies the network address prefix. The prefix length is specified by the *length* attribute.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip MBgp Export Net length

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Access	Read and write
Description	This attribute specifies the length of the network address prefix. The prefix is specified by the *prefix* attribute.
Mib	Ip
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Vr Ip Vrrp

Groups	GROUP Vr Ip Vrrp AdministrativeControl (AdminControl) GROUP Vr Ip Vrrp OperationalStatus (OperStatus) GROUP Vr Ip Vrrp OsiState (State)
Scope	Application
Description	*Vr/<string> Ip Vrrp* The Virtual Router Redundancy Protocol (VRRP) component enables the control protocol of VRRP, which provides the dynamic election of a master VRRP virtual router among multiple VRRP virtual routers on an Ethernet LAN. Locking this component will disable all *VrrpPort* components.
Mib	IpVrrp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Vrrp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpVrrp

ATTRIBUTE Vr Ip Vrrp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpVrrp

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Values	up down testing
Default	up

GROUP Vr Ip Vrrp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpVrrp

ATTRIBUTE Vr Ip Vrrp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpVrrp
Values	up down testing
Default	up

GROUP Vr Ip Vrrp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpVrrp

ATTRIBUTE Vr Ip Vrrp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively

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permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — IpVrrp

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr Ip Vrrp operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — IpVrrp

Values — enabled (ena)
disabled (dis)

Default — disabled

ATTRIBUTE Vr Ip Vrrp usageState (osiUsage)

Access — Read only

Description — This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib — IpVrrp

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Values	idle active (activ) busy
Default	idle

COMPONENT Vr Ip Rtd

Groups	GROUP Vr Ip Rtd Provisioned (Prov) GROUP Vr Ip Rtd OsiState (State)

COLLECTED STATS VirtualRouter Ip Rtd

Scope	Application
Description	*Vr/<string> Ip Rtd* The *Rtd* component is used to add, delete and modify Round Trip Delay measurement cycles.
Mib	Ip
Dyn. Subcomp.	COMPONENT Vr Ip Rtd VcgDestAddr
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Rtd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Rtd* component.
Mib	Ip

ATTRIBUTE Vr Ip Rtd rtdSize (size)

Access	Read and write
Description	This attribute specifies the size of the ICMP IP packets used to calculate the round trip delay measurements.
Mib	Ip
Values	Decimal (30..4096)
Default	64

ATTRIBUTE Vr Ip Rtd rtdSamples (samples)

Access	Read and write

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Description	This attribute specifies the number of the ICMP packets which will be generated in one RTD session for each remote node in the backbone per Different Class of Service.
Mib	Ip
Values	Decimal (1..5)
Default	3

ATTRIBUTE Vr Ip Rtd rtdTimeInterval (time)

Access	Read and write
Description	This attribute specifies the time interval between the end of one round trip delay measurement session and the beginning of the next round trip delay measurement session
Mib	Ip
Values	Decimal (1..300)
Units	minutes
Default	5

ATTRIBUTE Vr Ip Rtd rtdCosList (cos)

Access	Read and write
Description	This attribute specifies the list of class of service values used to send the ICMP packets for all the VCG nodes in the current RTD session.
Mib	Ip
List of	Decimal (0..3)
Default	No default

ATTRIBUTE Vr Ip Rtd rtdDstAddrList (dst)

Access	Read and write
Description	This attribute specifies the list of the IP destination addresses for which the round trip delays will be calculated in the current round trip delay measurement session.
Mib	Ip
List of	IP address
Default	No default

GROUP Vr Ip Rtd OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the

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component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib — Ip

ATTRIBUTE Vr Ip Rtd adminState (osiAdmin)

Access — Read only

Description — This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib — Ip

Values — locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default — unlocked

ATTRIBUTE Vr Ip Rtd operationalState (osiOper)

Access — Read only

Description — This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib — Ip

Values — enabled (ena)
disabled (dis)

Default — disabled

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ATTRIBUTE Vr Ip Rtd usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

COLLECTED STATS VirtualRouter Ip Rtd

Description	The statistics record generated by the VirtualRouter Ip Rtd component.

ATTRIBUTE Vr Ip Rtd localNodeIdentifier

Description	This attribute identifies the node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData*.
Values	Decimal (256..49151)

ATTRIBUTE Vr Ip Rtd ipVcgInstance

Description	This attribute indicates which VCG VR generated the statistics record
Values	String (1..16, ASCII)

ATTRIBUTE Vr Ip Rtd localVcgIpAddress

Description	This attribute indicates the VCG loopback IP address of the VCG VR that generated the statistics record.
Values	IP address

ATTRIBUTE Vr Ip Rtd remoteVcgIpAddress

Description	This attribute indicates the remote VCG destination address that will have the delays measured.
Values	IP address

ATTRIBUTE Vr Ip Rtd framesSent

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Description	This attribute contains the number of frames transmitted by the *Virtual Carrier Gateway* during the latest interval.
Vector of	Decimal (1..5)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd framesReceived

Description	This attribute contains the number of frames received by the *Virtual Carrier Gateway during* the collection interval.
Vector of	Decimal (1..5)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample1StartTime

Description	This attribute represents the timestamp when the first sample was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelays1

Description	This attribute indicates an array of round trip delays for the first sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample2StartTime

Description	This attribute represents the timestamp when the second sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay2

Description	This attribute indicates an array of round trip delays for the second sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3)
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample3StartTime

Description	This attribute represents the timestamp when the third sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay3

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Description	This attribute indicates an array of round trip delays for the third sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3)
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample4StartTime

Description	This attribute represents the timestamp when the fourth sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay4

Description	This attribute indicates an array of round trip delays for the fourth sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample5StartTime

Description	This attribute represents the timestamp when the fifth sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay5

Description	This attribute indicates an array of round trip delays for the fifth sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

COMPONENT Vr Ip Rtd VcgDestAddr

Instance	addr [IP address] cos [0 1 2 3]
Groups	GROUP Vr Ip Rtd VcgDestAddr Operational (Oper) GROUP Vr Ip Rtd VcgDestAddr Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ip Rtd VcgDestAddr/IP, COS* This component is indexed by the IP address of the peer for which the

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round trip delay is measured. Each IP entry in the table is uniquely defined by its IP address and Class of Service (CoS) index

Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Rtd VcgDestAddr Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *VcgDestAddr* component. This component is a table that contains all destination addresses (both static and dynamic). Each IP entry in the table is uniquely defined by its IP address and Class of Service (CoS) index.
Mib	Ip

ATTRIBUTE Vr Ip Rtd VcgDestAddr time

Access	Read only
Description	This attribute indicates the start time of the latest RTD session for this remote VCG.
Mib	Ip
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr size

Access	Read only
Description	This attribute specifies the size of the ICMP IP packets used to calculate the round trip delay measurement in the latest session.
Mib	Ip
Values	Decimal (30..4096)
Default	No default

GROUP Vr Ip Rtd VcgDestAddr Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of the *DstAddr* component. This component is a table that contains all destination addresses, both static and dynamic. Each IP entry in the table is uniquely defined by its IP address and Class of Service index.
Mib	Ip

ATTRIBUTE Vr Ip Rtd VcgDestAddr minRoundTripDelay (minRtd)

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Access	Read and write
Description	This attribute specifies the minimum of the round trip delays measured in the last monitoring session.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr maxRoundTripDelay (maxRtd)

Access	Read and write
Description	This attribute specifies the maximum of the round trip delays measured in the last monitoring session.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr avgRoundTripDelay (avgRtd)

Access	Read and write
Description	This attribute specifies the average of the round trip delay measurements in the last monitoring session.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr framesTransmitted (frmTx)

Access	Read only
Description	This attribute indicates the number of RTD frames transmitted to this remote destination address. When this count reaches maximum, it wraps to zero.
Mib	Ip
Values	Decimal (1..5)
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr framesReceived (frmRx)

Access	Read only

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Description	This attribute indicates the number of frames that have been received and have the delays calculated in the last measurement session. When this count reaches maximum, it wraps to zero.
Mib	Ip
Values	Decimal (1..5)
Default	No default

COMPONENT vr Ipx

Groups	GROUP Vr Ipx AdministrativeControl (AdminControl) GROUP Vr Ipx Provisioned (Prov) GROUP Vr Ipx OsiState (State) GROUP Vr Ipx OperationalStatus (OperStatus) GROUP Vr Ipx Operational (Oper) GROUP Vr Ipx Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ipx* This component provides for routing of Novell IPX packets in Novell's NetWare environment.
Mib	Ipx
Subcomponents	COMPONENT Vr Ipx Rip COMPONENT Vr Ipx Sap
Opt. Subcomp.	COMPONENT Vr Ipx NetSentry (Ns)
Dyn. Subcomp.	COMPONENT Vr Ipx Forwarding (Fwd) COMPONENT Vr Ipx Services (Srvc) COMPONENT Vr Ipx Adjacencies (Adj)
Common Verbs	Help List Display Add DELete LOCK Unlock

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VERB Ping Vr Ipx

Impact	Passive
Description	*Ping -network (<network number>) [-node (<node number>)]* The ping verb allows the user to test the ability of an interface to contact other nodes. The *-network* option is used to receive responses from all nodes on that network. The *-node* option is used to or specify a particular node to ping. The nodes are given two seconds to respond. All responses received within the two second wait period will be displayed to the user. Pinging a remote wan link or network will produce unexpected results. Pinging a local wan link or network is invalid.

GROUP Vr Ipx **AdministrativeControl (AdminControl)**

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ipx

ATTRIBUTE Vr Ipx **snmpAdminStatus**

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ipx
Values	up down testing
Default	up

GROUP Vr Ipx **Provisioned (Prov)**

Properties	Provisioned
Description	IPX system provisionable attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx **networkNumber**

Access	Read and write

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Description	This attribute indicates the internal network number portion of the IPX address. This network number must be unique within the internetwork and is necessary to determine master/slave relationships during IPXWAN negotiations.
Mib	Ipx
Values	String (1..4, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ipx maxPathSplits (maxPaths)

Access	Read and write
Description	This attribute indicates the maximum number of paths with equal routing metric value which this instance of IPX may split between when forwarding packets.
Mib	Ipx
Values	Decimal (1..4)
Default	1

ATTRIBUTE Vr Ipx maxHops (hops)

Access	Read and write
Description	This attribute indicates the maximum number of hops a packet may take.
Mib	Ipx
Values	Decimal (1..64)
Default	16

ATTRIBUTE Vr Ipx ripUpdateInterval (rUpd)

Access	Read and write
Description	The RIP periodic update interval, in seconds.
Mib	Ipx
Values	Decimal (1..255)
Units	seconds
Default	60

ATTRIBUTE Vr Ipx sapUpdateInterval (sUpd)

Access	Read and write
Description	The SAP periodic update interval, in seconds.
Mib	Ipx
Values	Decimal (1..255)

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Units	seconds
Default	60

ATTRIBUTE Vr Ipx controlDelay (ctrlDelay)

Access	Read and write
Description	The delay, in microsecs, between receiving a request from a client and sending a response. This router is significantly faster than some Ipx clients. If a problem is being experienced between a router and an Ipx client, it might be resolved by changing the *controlDelay*.
Mib	Ipx
Values	Decimal (1..30)
Units	microsec
Default	1

ATTRIBUTE Vr Ipx updateDelay (updDelay)

Access	Read and write
Description	The delay, in milliseconds, between sending consecutive (RIP and/or SAP) packets. 55 milliseconds is the minimum specified in the Ipx Router Specification.
Mib	Ipx
Values	Decimal (55..500)
Units	msec
Default	55

ATTRIBUTE Vr Ipx ripAgeMultiplier (rAge)

Access	Read and write
Description	After this many Rip Update intervals unrefreshed Rip information is considered expired.
Mib	Ipx
Values	Decimal (1..10)
Default	3

ATTRIBUTE Vr Ipx sapAgeMultiplier (sAge)

Access	Read and write
Description	After this many SAP Update intervals unrefreshed SAP information is considered expired.
Mib	Ipx

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Values	Decimal (1..10)
Default	3

ATTRIBUTE Vr Ipx damping (damp)

Access	Read and write
Description	This attribute specifies whether damping is applied. Damping refers to the damping of incoming RIP and SAP requests. It handles cases where a rogue client or server is making an extraodinary number of requests. With *damping* set to ***disabled***, the switch will reply to all requests with no check for rogue nodes.With *damping* set to ***enabled***, the switch will not reply to a request if the same node made more than the allowable number of requests within 10 seconds. The maximum number of requests to damp at is specified by the following provisionable attributes: *ripMaxDampedGeneralRequest*, *ripMaxDampedSpecificRequests*, *sapMaxDampedGeneralRequests*, *sapMaxDampedSpecificRequests*.
Mib	Ipx
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Ipx ripMaxDampedGeneralRequests (rDampGenReqs)

Access	Read and write
Description	This attribute is only used when the attribute *damping* is ***enabled***. It is used to limit the average rate at which the switch responds to general RIP requests. If more than this number are received within a ten second interval, the first *ripMaxDampedGeneralRequests* are responded to and the remainder are ignored.
Mib	Ipx
Values	Decimal (1..100)
Default	1

ATTRIBUTE Vr Ipx ripMaxDampedSpecificRequests (rDampSpecReqs)

Access	Read and write
Description	This attribute is only used when the attribute *damping* is ***enabled***. It is used to limit the average rate at which the switch responds to specific RIP requests. If more than this number are received within a ten second interval, the first *ripMaxDampedSpecificRequests* are responded to and the remainder are ignored.
Mib	Ipx
Values	Decimal (1..100)
Default	4

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ATTRIBUTE Vr Ipx sapMaxDampedGeneralRequests (sDampGenReqs)

Access	Read and write
Description	This attribute is only used when the attribute *damping* is ***enabled***. It is used to limit the average rate at which the switch responds to general SAP requests. If more than this number are received within a ten second interval, the first *sapMaxDampedGeneralRequests* are responded to and the remainder are ignored.
Mib	Ipx
Values	Decimal (1..100)
Default	1

ATTRIBUTE Vr Ipx sapMaxDampedSpecificRequests (sDampSpecReqs)

Access	Read and write
Description	This attribute is only used when the attribute *damping* is ***enabled***. It is used to limit the average rate at which the switch responds to specific SAP requests. If more than this number are received within a ten second interval, the first *sapMaxDampedSpecificRequests* are responded to and the remainder are ignored.
Mib	Ipx
Values	Decimal (1..100)
Default	4

ATTRIBUTE Vr Ipx initialGeneralRequests (genReqs)

Access	Read and write
Description	This attribute specifies whether the RIP and SAP general requests are sent out a port when the port first comes up. If this attribute is ***enabled*** the initial requests will be made; whereas if the attribute is ***disabled*** the initial requests will not be made. This attribute may be disabled in order to avoid the traffic resulting within the network from these initial requests and the ensuing responses. With the initial request ***disabled***, the switch will learn about other network segments off of the IPX ports via the periodic broadcasts which are received on those port.
Mib	Ipx
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Ipx holdDownInterval (hold)

Access	Read and write

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Description	This attribute specifies an interval, after a network is removed from the route table, during which other incoming route updates for the same network will be ignored. The use of this interval prevents the slow convergence which results when switches that receive late network down broadcasts advertise false routes.
Mib	Ipx
Values	Decimal (0..255)
Units	seconds
Default	10

GROUP Vr Ipx OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ipx

ATTRIBUTE Vr Ipx adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ipx
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Vr Ipx operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ipx
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ipx usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ipx
Values	idle active (activ) busy
Default	idle

GROUP Vr Ipx OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ipx

ATTRIBUTE Vr Ipx snmpOperStatus

Access	Read only

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Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ipx
Values	up down testing
Default	up

GROUP Vr Ipx Operational (Oper)

Properties	Operational
Description	This group contains IPX related operational attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx protocolPortCount (ppCnt)

Access	Read only
Description	The number of portsknown to this instance of Ipx.
Mib	Ipx
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vr Ipx destinationCount (destCnt)

Access	Read only
Description	The number of currently reachable destinations known to Ipx.
Mib	Ipx
Values	Decimal (0..65535)
Default	65535

ATTRIBUTE Vr Ipx servicesCount (srvCnt)

Access	Read only
Description	The number of Services known to Ipx.
Mib	Ipx
Values	Decimal (0..65535)
Default	65535

GROUP Vr Ipx Statistics (Stats)

Properties	Operational

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Description	This group contains IPX related statistics on the CP.
Mib	Ipx

ATTRIBUTE Vr Ipx inReceives

Access	Read only
Description	This attribute counts the total number of IPX packets received, including those received in error. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inHeaderErrors

Access	Read only
Description	The number of IPX packets discarded due to errors in their headers, including any IPX packet with a size less than the minimum of 30 bytes. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inUnknownSocket

Access	Read only
Description	The number of IPX packets discarded because the destination socket was not open. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inDiscards

Access	Read only
Description	Number of packets received but discarded due to reasons other than those accounted for by *inHeaderErrors* and *inUnknownSocket*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Ipx inBadChecksums

Access	Read only
Description	Number of packets received with incorrect checksums. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inDelivers

Access	Read only
Description	Number of IPX packets delivered locally, including packets from local applications. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx noRoutes

Access	Read only
Description	Number of times no route to a destination was found. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outRequests

Access	Read only
Description	The number of IPX packets supplied locally for transmission, not including any packets counted in the *forwarded* attribute. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outMalformedRequests

Access	Read only

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Description	Number of outgoing packets supplied locally that contained errors in their structure. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outDiscards

Access	Read only
Description	The number of outgoing IPX packets discarded due to reasons other than those accounted for in *outMalformedRequests* or *outFiltered*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outPackets

Access	Read only
Description	The total number of IPX packets transmitted. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inTooManyHops

Access	Read only
Description	Number of packets discarded due to exceeding the *maxHops* value. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inFiltered

Access	Read only
Description	The number of incoming IPX packets discarded due to filtering. This counter wraps around to zero after reaching the maximum value of 4294967295.

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Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inNetBIOS

Access	Read only
Description	The number of NetBIOS packets received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx forwarded

Access	Read only
Description	The number of IPX packets forwarded. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outFiltered

Access	Read only
Description	The number of outgoing packets discarded due to filtering. This also includes the number of forwarded packets filtered. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Rip

Groups	GROUP Vr Ipx Rip Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ipx Rip* The Routing Information Protocol (RIP) exchanges IPX route information that is used to maintain the routing table. Routing information is added to the route table for all known networks whose hops count is equal to or less

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	than the value provisioned for *maxHops*, and is propagated for networks less than *maxHops* away.
Mib	Ipx
Opt. Subcomp.	COMPONENT Vr Ipx Rip RipFilter (RFltr) COMPONENT Vr Ipx Rip RipApplyEntry (RipApp)
Common Verbs	Help List Display

GROUP Vr Ipx Rip Statistics (Stats)

Properties	Operational
Description	IPX statistics related to the RIP protocol.
Mib	Ipx

ATTRIBUTE Vr Ipx Rip ripIn

Access	Read only
Description	This attribute counts the total number of IPX RIP packets received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx Rip ripOut

Access	Read only
Description	This attribute counts the total number of RIP packets locally generated and sent out. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx Rip ripIncorrectPackets

Access	Read only
Description	This attribute counts the number of times an incorrectly formatted RIP packet was received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx

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Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Rip RipFilter (RFltr)

Instance	Decimal (1..4294967295)
Groups	GROUP Vr Ipx Rip RFltr Provisioned (Prov) GROUP Vr Ipx Rip RFltr Operational (Oper)
Scope	Application
Description	*Vr/<string> Ipx Rip RipFilter* RIP filters remove the specified service advertisements from RIP packets passing through this IPX router instance thereby filtering knowledge of those network routes. This is done by telling the router to ignore certain advertised networks present in incoming RIP packet tuples and/or omit certain networks from outgoing RIP packet advertisements. The networks are indicated by the attributes *hops, ticks*, *networkNumber*, *node* and *port*. For a given filter, networks matching all the attributes of that filter are filtered or passed depending on the *disposition* of the filter. RIP filters are applied as input or output filters via the *RipApplyEntry* component.
Mib	Ipx
Common Verbs	Help List Display Add DELete

GROUP Vr Ipx Rip RFltr Provisioned (Prov)

Properties	Provisioned
Description	This is the provisionable attribute group for *RipFilter*.
Mib	Ipx

ATTRIBUTE Vr Ipx Rip RFltr hops

Access	Read and write
Description	This attribute specifies the distance in terms of number of hops. Networks in RIP packets which are the specified distance away from the switch are filtered or passed depending on the *disposition* of the filter. A hops value preceded by an equality operator(=), less than operator(<) or greater than operator(>) should be interpreted as matching all RIP packet tuples which are an equal, smaller or greater distance, respectively, away from the switch than the hops value specified. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter. The number of hops is specified as a decimal number between 0 and 999.

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Mib	Ipx
Values	String (0..4, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr ticks

Access	Read and write
Description	This attribute specifies the distance in terms of delay in ticks. A tick is 1/18 of a second. Networks in RIP packets which are the specified distance away from the switch are filtered or passed depending on the *disposition* of the filter. A ticks value preceded by a equality operator(=), less than operator(<) or greater than operator(>) should be interpreted as matching all RIP packet tuples which are an equal, greater or lower delay, respectively, away from the switch than the ticks value specified. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter. The ticks value is specified as a decimal number between 0 and 999.
Mib	Ipx
Values	String (0..4, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr networkNumber (net)

Access	Read and write
Description	This attribute specifies the network number of matching networks in RIP packets to be filtered or passed depending on the *disposition* of the filter. The network number can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 8 digits; in addition to hex digits, use of the character '?' to indicate wildcarding is allowed. (For example a valid network number would be ff-ff-ff-?? or ffffff??). Wildcard characters may be used only in pairs to replace a pair of hex digits. Filters with a network number preceded by a caret (^) should be interpreted as matching all RIP packet tuples except for the tuples with this network number. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter.
Mib	Ipx
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr node

Access	Read and write
Description	This attribute specifies the node portion in the source IPX address (that is, the MAC address or circuit ID) of received RIP packets for which the contained network tuples should be filtered or passed depending on the

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disposition of the filter. This attribute is only valid for filters applied to a port in the ***input*** *direction* and will be ignored if the filter is applied in the ***output*** *direction*.The node number can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 12 digits; in addition to hex digits, use of the character '?' to indicate wildcarding is allowed. (For example a valid node number would be 00-20-??-??-??-?? or 0020????????). Wildcard characters may be used only in pairs to replace a pair of hex digits. A node number preceded by a caret (^) should be interpreted as matching all RIP packets' network tuples except for the RIP packets with this source node address. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter.

Mib	Ipx
Values	String (0..18, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr port

Access	Read and write
Description	This attribute specifies the name of a *protocol port* whereby networks learned over this port are to be filtered or passed depending on the *disposition* of the filter. This attribute is only valid for filters applied to a port in the ***output*** *direction* and will be ignored if the filter is applied in the ***input*** *direction*. This attribute is entered as an ascii string and must correspond to a name of a provisioned *protocol port*. A port name preceded by a caret (^) should be interpreted as matching all RIP packet tuples except for those learned on this port. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter.
Mib	Ipx
Values	String (0..18, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr disposition (disp)

Access	Read and write
Description	This attribute indicates a reversal of the filter pattern match. If the value is pass, then matching filters will cause the RIP packet tuple to be passed. If the value is filter, then matching filters will cause the RIP packet tuple to be filtered.
Mib	Ipx
Values	pass filter
Default	filter

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GROUP Vr Ipx Rip RFltr Operational (Oper)

Properties	Operational
Description	This is the operational attribute group for *IpxRipFilter*.
Mib	Ipx

ATTRIBUTE Vr Ipx Rip RFltr numberOfApplyEntries (applied)

Access	Read only
Description	This attribute indicates the number of times this filter is referenced by a *RipApplyEntry*. If zero, this filter is not applied on any ports.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Rip RipApplyEntry (RipApp)

Instance	protocolPortName (ppName) [String (1..20, ASCII)] filterIdentifier (fltrId) [Decimal (1..4294967295)]
Groups	GROUP Vr Ipx Rip RipApp Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ipx Rip RipFilter RipApplyEntry/<protocol port name, filter ID>* This component contains a list of RIP filters that have been applied to each IPX port and information pertaining to each application of such RIP filters. Filters should be applied to ports such that the most specific filter has the lowest identifier while the least specific filter has the highest identifier. It should be kept in mind that the filter with the lowest filter identifier that matches will decide based on its *disposition* whether the network tuple is passed or filtered.
Mib	Ipx
Common Verbs	Help List Display Add DELete

GROUP Vr Ipx Rip RipApp Provisioned (Prov)

Properties	Provisioned
Description	This is the *RipApplyEntry* provisionable group of attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx Rip RipApp direction (dir)

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Access	Read and write
Description	This attribute specifies whether this RIP filter is applied as an ***input*** filter or an ***output*** filter. If set to ***none***, this indicates that the filter, though applied to the port, is not currently active in either direction.
Mib	Ipx
Values	none output input
Default	none

COMPONENT Vr Ipx Sap

Groups	GROUP Vr Ipx Sap Statistics (Stats)
Scope	Application
Description	*Vr/<string> Ipx Sap* The Service Advertising Protocol (SAP) exchanges information on the network about available network services (for example file services or print services). Service information is kept for services residing on networks which are known to the router via the routing table (RIP protocol). That is, services will be added to the services table only if a route to them has been previously discovered via RIP and entered in the route table.
Mib	Ipx
Opt. Subcomp.	COMPONENT Vr Ipx Sap SapFilter (SFltr) COMPONENT Vr Ipx Sap SapApplyEntry (SapApp)
Common Verbs	Help List Display

GROUP Vr Ipx Sap Statistics (Stats)

Properties	Operational
Description	IPX statistics specific to the SAP protocol.
Mib	Ipx

ATTRIBUTE Vr Ipx Sap sapIn

Access	Read only
Description	The total number of SAP packets received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Ipx Sap sapOut

Access	Read only
Description	The total number of SAP packets locally generated and sent out. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx Sap sapIncorrectPackets

Access	Read only
Description	The number of times an incorrectly formatted SAP packet was received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Sap SapFilter (SFltr)

Instance	Decimal (1..4294967295)
Groups	GROUP Vr Ipx Sap SFltr Provisioned (Prov) GROUP Vr Ipx Sap SFltr Operational (Oper)
Scope	Application
Description	*Vr/<string> Ipx Sap Sfltr* SAP filters remove the specified service advertisements from SAP packets passing through this IPX router instance thereby filtering knowledge of those services. This is done by telling the router to ignore certain advertised services present in incoming SAP packet tuples and/or omit certain services from outgoing SAP packet advertisements. The services are indicated by the attributes *type*, *name*, *networkNumber*, and *node*. For a given filter, services matching all the attributes of that filter are filtered. SAP filters are applied as input or output filters via the *IpxSapApplyEntry* component.
Mib	Ipx
Common Verbs	Help List Display Add DELete

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GROUP Vr Ipx Sap SFltr Provisioned (Prov)

Properties	Provisioned
Description	The provisionable attribute group for *SapFilter*.
Mib	Ipx

ATTRIBUTE Vr Ipx Sap SFltr type

Access	Read and write
Description	This attribute specifies the Novell Service type of the services to be filtered from the SAP packets. The type can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 4 digits. (For example a valid type would be ff-ff or ffff). A type preceded by a caret(^) should be interpreted as filtering all SAP packets except for those with this type.
Mib	Ipx
Values	String (0..6, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Sap SFltr name

Access	Read and write
Description	This attribute specifies the readable name of the service to be filtered from SAP packets. The name can be 47 characters or less. This does not include the caret (^) character which precedes the name. A name preceded by a caret (^) should be interpreted as filtering all SAP packets except for the ones with this name.
Mib	Ipx
Values	String (0..48, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Sap SFltr networkNumber (net)

Access	Read and write
Description	This attribute specifies the network number of the service to be filtered from SAP packets. The network number can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 8 digits. (For example a valid network number would be ff-ff-ff-ff or ffffffff). A network number preceded by a caret (^) should be interpreted as filtering all SAP packets except for the ones with this network number.
Mib	Ipx
Values	String (0..12, ASCII)
Default	No default

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ATTRIBUTE Vr Ipx Sap SFltr node

Access	Read and write
Description	This attribute specifies the node portion of the IPX address of the service to be filtered from SAP packets. The node number can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 12 digits.. (For example a valid node number would be ff-ff-ff-ff-ff-ff or ffffffffffff). A node number preceded by a caret (^) should be interpreted as filtering all SAP packets except for the ones with this node number.
Mib	Ipx
Values	String (0..18, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Sap SFltr disposition (disp)

Access	Read and write
Description	Indicates a reversal of the filter pattern match.
Mib	Ipx
Values	pass filter
Default	filter

GROUP Vr Ipx Sap SFltr Operational (Oper)

Properties	Operational
Description	The operational attribute group for *IpxSapFilter*.
Mib	Ipx

ATTRIBUTE Vr Ipx Sap SFltr numberOfApplyEntries (applied)

Access	Read only
Description	The number of times this filter appears in *IpxSapApplyEntry*. If zero, this filter is not applied on any ports.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Sap SapApplyEntry (SapApp)

Instance	protocolPortName (ppName) [String (1..20, ASCII)] filterIdentifier (fltrId) [Decimal (1..4294967295)]
Groups	GROUP Vr Ipx Sap SapApp Provisioned (Prov)
Scope	Application

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Description	*Vr/<string> Ipx Sap SapApp* This component contains a list of SAP filters that have been applied to each IPX port and information pertaining to each application of such SAP filters.
Mib	Ipx
Common Verbs	Help List Display Add DELete

GROUP Vr Ipx Sap SapApp Provisioned (Prov)

Properties	Provisioned
Description	The *IpxSapApplyEntry* provisionable group of attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx Sap SapApp direction (dir)

Access	Read and write
Description	Indicates whether this SAP filter is applied as an input filter or an output filter.
Mib	Ipx
Values	none output input
Default	none

COMPONENT Vr Ipx Forwarding (Fwd)

Instance	String (1..4, Dashed Hex)
Groups	GROUP Vr Ipx Fwd Operational (Oper)
Scope	Application
Description	*Vr/<string> Ipx Fwd* The forwarding component represents an entry of the forwarding table. It contains forwarding information about all known destinations with each entry in the forwarding table being information pertaining to a unique IPX destination network number.
Mib	Ipx
Common Verbs	Help List Display

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GROUP Vr Ipx Fwd Operational (Oper)

Properties	Operational
Description	*IpxForwarding* operational attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx Fwd protocol

Access	Read only
Description	The routing protocol from which knowledge of this destination was obtained.
Mib	Ipx
Values	other local rip nlsp static
Default	No default

ATTRIBUTE Vr Ipx Fwd ticks

Access	Read only
Description	The delay, in ticks, to reach this destination.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ipx Fwd hopCount (hops)

Access	Read only
Description	The number of hops required to reach this destination.
Mib	Ipx
Values	Decimal (1..64)
Default	No default

ATTRIBUTE Vr Ipx Fwd protocolPortId (portId)

Access	Read only
Description	The unique identifier of the *ProtocolPort* used to reach the next hop.
Mib	Ipx
Values	String (1..20, ASCII)
Default	No default

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ATTRIBUTE Vr Ipx Fwd nextHopPhysAddress (nextPhys)

Access	Read only
Description	The physical address of the next hop
Mib	Ipx
Values	String (1..6, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ipx Fwd nextHopNetworkNumber (nextNet)

Access	Read only
Description	The IPX network number of the next hop.
Mib	Ipx
Values	String (1..4, Dashed Hex)
Default	No default

COMPONENT Vr Ipx Services (Srvc)

Instance	networkNumber (net) [String (1..4, Dashed Hex)] node [String (1..6, Dashed Hex)] type [Hex (H.0..H.ffff)] name [String (1..48, ASCII)]
Groups	GROUP Vr Ipx Srvc Operational (Oper)
Scope	Application
Description	*Vr/<string> Ipx Srvc* This is the top level component of the IPX services table, which is a list of the Novell services known to this IPX router instance.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Ipx Srvc Operational (Oper)

Properties	Operational
Description	The Ipx Services Operational group.
Mib	Ipx

ATTRIBUTE Vr Ipx Srvc socket

Access	Read only
Description	Socket at which the service is available

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Mib	Ipx
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Ipx Srvc protocol (proto)

Access	Read only
Description	The protocol from which knowledge of this service was obtained.
Mib	Ipx
Values	other local nlsp static sap
Default	No default

ATTRIBUTE Vr Ipx Srvc hopCount (hops)

Access	Read only
Description	Number of hops to the service.
Mib	Ipx
Values	Decimal (0..64)
Default	No default

COMPONENT Vr Ipx Adjacencies (Adj)

Instance	protocolPortIdentifier (ppId) [String (1..20, ASCII)] networkNumber (net) [String (1..4, Dashed Hex)]
Groups	GROUP Vr Ipx Adj Operational (Oper)
Scope	Application
Description	*Vr/<string> Ipx Adj* This component provides adjacent node information available on a per *ProtocolPort* basis. This information is retrieved from, but formatted and displayed differently than, the information in the route table. It is useful for network configuration debugging.
Mib	Ipx
Common Verbs	Help List Display

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GROUP Vr Ipx Adj Operational (Oper)

Properties	Operational
Description	The *Adjacencies* operational group.
Mib	Ipx

ATTRIBUTE Vr Ipx Adj physAddress (phyAddress)

Access	Read only
Description	The physical address of the adjacent router.
Mib	Ipx
Values	String (1..6, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ipx Adj adjacencyState (adjState)

Access	Read only
Description	The state of the connection to the adjacent router.
Mib	Ipx
Values	initializing up failed down
Default	No default

COMPONENT Vr Ipx NetSentry (Ns)

Groups	GROUP Vr Ipx Ns Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ipx NetSentry* NetSentry filters, defined in and compiled by NetSentry can be applied to IPX packets. IPX packets can be filtered on source and destination network and node combinations.
Mib	Ipx
Opt. Subcomp.	COMPONENT Vr Ipx Ns NetSentryApplyList (NetSentryApp)
Common Verbs	Help List Display Add DELete LOCK Unlock

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GROUP Vr Ipx Ns Provisioned (Prov)

Properties	Provisioned
Description	The provisionable attribute group for the *IpxNetSentry* component.
Mib	Ipx

ATTRIBUTE Vr Ipx Ns firstFilter

Access	Read and write
Description	First NetSentry filter for Ipx. If specified this filter is applied before any other NetSentry filters applicable to the packet.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns lastFilter

Access	Read and write
Description	Last filter for Ipx. If specified this filter is applied after all other NetSentry filters applicable to the packet.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns localInFilter

Access	Read and write
Description	The filter name of the NetSentry filter to be applied at the Local In filter point.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns localOutFilter

Access	Read and write
Description	The filter name of the NetSentry filter to be applied at the Local Out filter point.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

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COMPONENT Vr Ipx Ns NetSentryApplyList (NetSentryApp)

Instance	Decimal (1..4294967295)
Groups	GROUP Vr Ipx Ns NetSentryApp Provisioned (Prov)
Scope	Application
Description	*Vr/<string> Ipx NetSentry NetSentryApplyList* This component contains a list of NetSentry filters that have been applied to IPX packets and information pertaining to each application of such NetSentry filters.
Mib	Ipx
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ipx Ns NetSentryApp Provisioned (Prov)

Properties	Provisioned
Description	The Provisionable group for the *IpxNetSentryApplyList*.
Mib	Ipx

ATTRIBUTE Vr Ipx Ns NetSentryApp filter

Access	Read and write
Description	The name of the filter to be applied to packets matching the conditions in this entry of the *IpxNetSentryApplyList*.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp networkNumber1 (net1)

Access	Read and write
Description	The first IPX network Number used to compare. This network number can be entered either as a dashed hex string or a string of hex digits. (For example a valid network number would be ff-ff-ff-ff or ffffffff). In addition a value of * will be accepted as a wildcard for all networks.
Mib	Ipx
Values	String (1..11, ASCII)

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Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp **node1**

Access	Read and write
Description	This attribute is the first IPX node address used to compare. This node number can be entered either as a dashed hex string or a string of hex digits. (For example a valid node number would be ff-ff-ff-ff-ff-ff or ffffffffffff). In addition a value of * will be accepted as a wildcard for all nodes.
Mib	Ipx
Values	String (1..17, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp **direction (dir)**

Access	Read and write
Description	Indicates the direction a packet must be moving between the first and second apply list entries in order for the entries to match. First “to” second, first “from” second, or first “tofrom” second (either direction).
Mib	Ipx
Values	to from tofrom
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp **networkNumber2 (net2)**

Access	Read and write
Description	The second IPX network Number used to compare. This network number can be entered either as a dashed hex string or a string of hex digits. (For example a valid network number would be ff-ff-ff-ff or ffffffff). In addition a value of * will be accepted as a wildcard for all networks.
Mib	Ipx
Values	String (1..11, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp **node2**

Access	Read and write
Description	This attribute is the second IPX node address used to compared. This node can be entered either as a dashed hex string or a string of hex digits. (For example a valid network number would be ff-ff-ff-ff-ff-ff or ffffffffffff). In addition a value of * will be accepted as a wildcard for all nodes.
Mib	Ipx

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Values	String (1..17, ASCII)
Default	No default

COMPONENT Vr Snmp

Groups	GROUP Vr Snmp Provisioned (Prov) GROUP Vr Snmp OsiState (State) GROUP Vr Snmp Statistics (Stats)
Scope	Device
Description	*Vr/<string> Snmp* This component contains all provisionable and operational data relating to the SNMP Management of a Virtual Router. SNMP management defined for the Virtual Router having managementAccess, has access to shelf-wide enterprise MIBs and standard MIBs applicable to the Virtual Router. SNMP management defined for all other Virtual Routers have access only to standard MIBs applicable to the particular Virtual Router.
Mib	BaseSnmp
Subcomponents	COMPONENT Vr Snmp System (Sys)
Opt. Subcomp.	COMPONENT Vr Snmp Community (Com) COMPONENT Vr Snmp View
Dyn. Subcomp.	COMPONENT Vr Snmp MibIIStats
Common Verbs	Help List Display Add : System_admin DELete : System_admin LOCK Unlock

GROUP Vr Snmp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes defining the SNMP management entity's capabilities, particularly in regards to standard SNMPv1 and SNMPv2 traps.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp enableAuthenTraps (authen)

Access	Read: System_admin Write: System_admin

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Description	This attribute controls whether the *Snmp* component generates authentication failure traps. The attribute is derived from RFC 1907.
Mib	BaseSnmp
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Snmp alarmsAsTraps

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether the *Snmp* component sends alarms to SNMPv1, SNMPv2 managers. If ***enabled***, alarms are sent as SNMPv1 Traps to managers with SNMPv1 Trap privilege allowed, as SNMPv2 Traps to managers with SNMPv2 Trap privilege allowed.
Mib	BaseSnmp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Snmp ipStack

Access	Read: System_admin Write: System_admin
Description	This attribute controls which IP stack the *Snmp* component will use to send and receive SNMP traffic. If the value of this attribute is ***vrIp*** then SNMP Udp traffic is sent and received using *Ip* as provisioned under the *VirtualRouter*. This requires provisioning of the ***ip*** feature. If the value of this attribute is ***ipiFrIpiVc*** then SNMP Udp traffic is sent and received using *IpiFr* (Ip over Frame Relay) or *IpiVc* (Ip over Vc), whichever is provisioned. This requires provisioning of one of the ***ipiVc*** or ***ipiFr*** features.
Mib	BaseSnmp
Values	vrIp ipiFrIpiVc
Default	vrIp

ATTRIBUTE Vr Snmp cidInEntTraps

Access	Read: System_admin Write: System_admin

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Description	This attribute controls whether the Customer Identifier (CID) is included in the SNMP Enterprise Traps. If ***enabled***, the CID is included in the SNMP Enterprise traps.
Mib	BaseSnmp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Snmp supportedVersions

Access	Read: System_admin Write: System_admin
Description	This attribute specifies which SNMP message versions are accepted and sent by the SNMP agent. Messages with unsupported version are dropped and the corresponding statistics are incremented.
Mib	BaseSnmp
Set of	snmpV1 (v1) snmpV2c (v2c)
Default	No default

GROUP Vr Snmp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

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The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: BaseSnmp

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Snmp operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: BaseSnmp

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Snmp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

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The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	BaseSnmp
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Vr Snmp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

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The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	BaseSnmp
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Vr Snmp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

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The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: BaseSnmp

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Vr Snmp controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: BaseSnmp

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Vr Snmp alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

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When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — BaseSnmp

Set of —
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE Vr Snmp standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

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The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: BaseSnmp

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Vr Snmp unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: BaseSnmp

Values:
false
true

Default: false

GROUP Vr Snmp Statistics (Stats)

Properties: Operational

Description: This attribute group contains miscellaneous SNMP management entity operational attributes which includes statistics for processing traps as well as attributes to assist with identifying authentication failures generated by SNMPv1 managers.

Mib: BaseSnmp

ATTRIBUTE Vr Snmp trapsProcessed (trapsPr)

Access: Read only

Description: This attribute indicates the number of Standard and Enterprise notifications (traps) processed by the SNMP Agent. This total includes the number discarded by the *Snmp* component when it is ***locked*** or ***disabled***.

This attribute wraps to zero when its maximum value is exceeded.

Mib: BaseSnmp

Values: Decimal (0..4294967295)

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Default	0

ATTRIBUTE Vr Snmp trapsDiscarded (trapsDisc)

Access	Read only
Description	This attribute indicates the number of notifications (traps) discarded since the processor last restarted. They are discarded when the *Snmp* component is ***locked*** or ***disabled***. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Snmp System (Sys)

Groups	GROUP Vr Snmp Sys Provisioned (Prov) GROUP Vr Snmp Sys Operational (Op)
Scope	Device
Description	*Vr/<string> Snmp System* This component represents the SNMP System Group. The component attributes are derived from RFC 1907.
Mib	BaseSnmp
Dyn. Subcomp.	COMPONENT Vr Snmp Sys ObjectResource (Or)
Common Verbs	Help List Display

GROUP Vr Snmp Sys Provisioned (Prov)

Properties	Provisioned
Description	The group contains provisionable attributes relating to the SNMP System Group. The attributes are derived from RFC 1907.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp Sys contact (con)

Access	Read and write
Description	This attribute identifies the contact person for this managed node, together with information on how to contact this person.
Mib	BaseSnmp
Values	String (0..255, ASCII)

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Default	No default

ATTRIBUTE Vr Snmp Sys **name**

Access	Read and write
Description	This attribute identifies the administratively assigned name for this managed node. By convention, it is the node's fully qualified domain name.
Mib	BaseSnmp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Snmp Sys **location (loc)**

Access	Read and write
Description	This attribute identifies the physical location of this node. For example, 'telephone closet, third floor'.
Mib	BaseSnmp
Values	String (0..255, ASCII)
Default	No default

GROUP Vr Snmp Sys **Operational (Op)**

Properties	Operational
Description	The group contains operational attributes relating to the SNMP System Group. The attributes are derived from RFC 1907.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp Sys **description (desc)**

Access	Read only
Description	This attribute presents a textual description of the entity. This value should include the full name and version identification of the system's hardware type, software operating-system, and networking software.
Mib	BaseSnmp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Snmp Sys **objectId (oid)**

Access	Read only
Description	This attribute identifies the vendor's authoritative identification of the network management subsystem contained in the entity. This value is allocated within the Structure of Management Information (SMI)

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	enterprises subtree (1.3.6.1.4.1) and provides an easy and unambiguous means for determining 'what kind of box' is being managed.
Mib	BaseSnmp
Values	Integer Sequence
Default	No default

ATTRIBUTE Vr Snmp Sys upTime

Access	Read only
Description	This attribute represents the time (in hundredths of a second) since the network management portion of the system was last re-initialized.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Units	centiseconds
Default	No default

ATTRIBUTE Vr Snmp Sys services (serv)

Access	Read only
Description	This attribute indicates the set of services that this entity primarily offers. The value is a sum. This sum initially takes the value zero, then, for each layer, L, in the range 1 through 7, that this node performs transactions for, 2 raised to (L-1) is added to the sum. For example, a node which performs primarily routing functions would have a value of 4 (2^(3-1)). In contrast, a node which is a host offering application services would have a value of 72 ((2^4-1) + 2^(7-1)). Note that in the context of the Internet suite of protocols, values should be calculated accordingly: layer 1 - physical (for example, repeaters) layer 2 - datalink/subnetwork (for example, bridges) layer 3 - internet (for example, IP gateways) layer 4 - end-to-end (for example, IP hosts) layer 7 - applications (for example, mail relays) For systems including OSI protocols, layers 5 and 6 may also be counted.
Mib	BaseSnmp
Values	Decimal (0..127)
Default	6

ATTRIBUTE Vr Snmp Sys sysORLastChange

Access	Read only
Description	This attribute indicates the value of *sysUpTime* at the time of the most recent change to any *ObjectResource* component.

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Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Snmp Sys ObjectResource (Or)

Instance	Decimal (1..1024)
Groups	GROUP Vr Snmp Sys Or Or
Scope	Device
Description	*Vr/<string> Snmp System ObjectResource/n* This component represents an entry in the SNMPv2 Object Resources Table (RFC 1907). It lists the MIBs currently supported by the SNMP management entity.
Mib	BaseSnmp
Common Verbs	Help List Display

GROUP Vr Snmp Sys Or Or

Properties	Operational
Description	The attributes of this group describe a MIB currently supported by the SNMP agent. This group of attributes is derived from RFC 1907.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp Sys Or id

Access	Read only
Description	This attribute indicates the authoritative identification of a dynamically-configurable management entity object resource. This is a MIB Object Identifier.
Mib	BaseSnmp
Values	Integer Sequence
Default	No default

ATTRIBUTE Vr Snmp Sys Or description (desc)

Access	Read only
Description	This attribute indicates the textual description of a dynamically-configurable management entity object resource. This is an ASCII description of a supported MIB.
Mib	BaseSnmp

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Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Snmp Sys Or upTime

Access	Read only
Description	This attribute indicates the value of *sysUpTime* of the *Snmp System* component at the time this *ObjectResource* component was instantiated.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Snmp Community (Com)

Instance	Decimal (1..1024)
Groups	GROUP Vr Snmp Com Provisioned (Prov)
Scope	Device
Description	*Vr/<string> Snmp Community/<decimal>* This component represents an SNMPv1 or SNMPv2c community. A community represents a pairing of an SNMP Agent with an arbitrary set of application entities. The combination of *communityString* and *tDomain* attributes must be unique across all *Community* components.
Mib	BaseSnmp
Opt. Subcomp.	COMPONENT Vr Snmp Com Manager (Man)
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Vr Snmp Com Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes relating to SNMPv1 or SNMPv2c communities. The *Check Prov* command verifies that *viewIndex* corresponds to the first index of one of the *View* components.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp Com communityString (string)

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Access	Read: System_admin Write: System_admin
Description	This attribute is the SNMPv1 or SNMPv2c community name. The value of this attribute is used to authenticate SNMP messages received from SNMPv1 or SNMPv2c management entities, and is placed in SNMP messages sent out by the SNMPv1 or SNMPv2c network management entity. The string “public” is commonly used. When an SNMPv1 or SNMPv2c message is received, the community name in the message is checked to ensure that it matches a *communityString*. If there are no *Manager* subcomponents for that *Community* then the level of access is determined by the *accessMode* attribute. If there are *Manager* subcomponents for the *Community* then the originating transport address in the message must match the *transportAddress* of one of the *Manager* subcomponents, and the level of access of the sending entity is determined by the *privileges* attribute for that *Manager*. The combination of *communityString* and *tDomain* attributes must be unique across all *Community* components.
Mib	BaseSnmp
Values	String (1..255, ASCII)
Default	public

ATTRIBUTE Vr Snmp Com accessMode (acMode)

Access	Read: System_admin Write: System_admin
Description	Once the sending SNMP entity is authenticated as a member of a community, the community access mode determines what level of access it has for each object in its view.
Mib	BaseSnmp
Values	readOnly readWrite
Default	readOnly

ATTRIBUTE Vr Snmp Com tDomain (tDom)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the kind of transport service by which the community receives and sends network management traffic. The combination of *communityString* and *tDomain* attributes must be unique across all *Communities.*
Mib	BaseSnmp
Values	snmpUdpDomain

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Default	snmpUdpDomain

ATTRIBUTE Vr Snmp Com viewIndex (vIndex)

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the *View* component for this community. This index must correspond to the first index of one of the *View* components.
Mib	BaseSnmp
Values	String (1..32, ASCII)
Default	No default

COMPONENT Vr Snmp Com Manager (Man)

Instance	Decimal (0..100)
Groups	GROUP Vr Snmp Com Man Provisioned (Prov)
Scope	Device
Description	*Vr/<string> Snmp Community/<decimal> Manager/<decimal>* This component defines the access privileges for an SNMPv1 or SNMPv2c Manager within the Community. If a *Community* has no *Manager* components, SNMPv1 or SNMPv2 messages are accepted from all source addresses using the proper *communityString*, and no Traps are sent out using the *communityString*. If at least one *Manager* component exists for a *Community* then SNMPv1 or SNMPv2 messages containing that *Community string* are only accepted if they originate from a transport address which matches the *transportAddress* of one of the *Manager* components. The value of *transportAddress* must be unique for all *Manager* components under the same *Community*.
Mib	BaseSnmp
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Vr Snmp Com Man Provisioned (Prov)

Properties	Provisioned
Description	The group contains provisionable attributes relating to an SNMPv1 or SNMPv2c Community Manager. The *Check Prov* command verifies that the value of the *privileges* attribute is correctly set:

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- Setting ***v1trap*** bit and setting ***v2trap*** bit are not allowed simultaneously.

- Setting ***set*** bit is allowed if the *Community accessMode* is ***readWrite***.

- Setting ***get*** bit is only allowed if the *Community accessMode* is ***readOnly*** or ***readWrite***.

Mib BaseSnmp

ATTRIBUTE Vr Snmp Com Man transportAddress (tAddress)

Access
Read: System_admin
Write: System_admin

Description
This attribute is the transport service address of the SNMPv1 or SNMPv2c Manager, formatted according to the value of *Community tDomain*.
The only currently supported format is that of a UDP Transport Address. It must be of the form “IpAddress-UDP Port”, where UDP Port = 162. For example, 23.45.67.89-162 is a suitable UDP Transport Address.

The value of *transportAddress* must be unique for all *Manager* components under the same *Community*.

Mib BaseSnmp

Values String (1..100, ASCII)

Default No default

ATTRIBUTE Vr Snmp Com Man privileges (priv)

Access
Read: System_admin
Write: System_admin

Description
This attribute identifies the access privileges which govern what management operations the SNMPv1/SNMPv2c Manager may perform.

set and ***get*** operations are allowed if the *Community accessMode* is ***readWrite***.

get operations are only allowed if the *Community accessMode* is ***readOnly*** or ***readWrite***.

The ***v1trap*** bit and ***v2trap*** bit can not be set at same time.

Mib BaseSnmp

Set of
sets
gets
v1trap
v2trap

Default (gets)

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COMPONENT Vr Snmp MibIIStats

Groups	GROUP Vr Snmp MibIIStats Statistics (Stats)
Scope	Device
Description	*Vr/<string> Snmp MibIIStats* This component contains statistics based upon the MIB II Snmp group (RFC 1213).
Mib	BaseSnmp
Common Verbs	Help List Display

GROUP Vr Snmp MibIIStats Statistics (Stats)

Properties	Operational
Description	This attribute group contains the collection of statistics as defined by MIB II providing basic instrumentation of a SNMP Agent. The group is derived from RFC 1213. Statistics which are only relevant for SNMP managers do not appear.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp MibIIStats inPackets

Access	Read only
Description	This attribute indicates the total number of SNMP messages received by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inBadCommunityNames

Access	Read only
Description	This attribute indicates the number of SNMPv1 or SNMPv2c messages received by the SNMP management entity which had an unknown SNMPv1 or SNMPv2c Community string. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Snmp MibIIStats inBadCommunityUses

Access	Read only
Description	This attribute indicates the number of SNMPv1 or SNMPv2c messages received by the SNMP management entity which attempted to perform an operation not allowed for the indicated SNMPv1 or SNMPv2c Community. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inAsnParseErrs

Access	Read only
Description	This attribute indicates the number of SNMP messages received by the SNMP management entity which were improperly BER encoded or had an invalid ASN.1 syntax. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outPackets

Access	Read only
Description	This attribute indicates the number of SNMP messages transmitted by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inBadVersions

Access	Read only
Description	This attribute indicates the number of SNMP messages received by the SNMP management entity with an invalid SNMP version number. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inTotalReqVars

Access	Read only
Description	This attribute indicates the number of MIB objects successfully retrieved by SNMP Get and Get-Next requests. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inTotalSetVars

Access	Read only
Description	This attribute indicates the number of MIB objects successfully set by SNMP Set requests. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inGetRequests

Access	Read only
Description	This attribute indicates the number of SNMP Get requests accepted and processed by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inGetNexts

Access	Read only
Description	This attribute indicates the number of SNMP Get-Next requests accepted and processed by the SNMP management entity.

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This attribute wraps to zero when its maximum value is exceeded.

Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats **inSetRequests**

Access	Read only
Description	This attribute indicates the number of SNMP Set requests accepted and processed by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats **outTooBigs**

Access	Read only
Description	This attribute indicates the number of SNMP responses generated by the SNMP management entity with an error-status field of tooBig. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats **outNoSuchNames**

Access	Read only
Description	This attribute indicates the number of SNMP responses generated by the SNMP management entity with an error status field of noSuchName. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vr Snmp MibIIStats outBadValues

Access	Read only
Description	This attribute indicates the number of SNMP responses generated by the SNMP management entity with an error status field of badValue. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outGenErrs

Access	Read only
Description	This attribute indicates the number of SNMP responses generated by the SNMP management entity with an error-status field of genErr. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outGetResponses

Access	Read only
Description	This attribute indicates the number of SNMP Get responses generated by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outTraps

Access	Read only
Description	This attribute indicates the number of SNMP Traps generated by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.

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Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats silentDrops

Access	Read only
Description	This attribute indicates the total number of GetRequests, GetNextRequests, GetBulkRequests, SetRequests, and InformRequests delivered to the SNMP entity which were silently dropped because the size of a reply containing an alternate Response-PDU with an empty variable-bindings field was greater than either a local constraint or the maximum message size associated with the originator of the request. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats proxyDrops

Access	Read only
Description	This attribute indicates the total number of GetRequests, GetNextRequests, GetBulkRequests, SetRequests, and InformRequests delivered to the SNMP entity which were silently dropped because the transmission of the (possibly translated) message to a proxy target failed in a manner (other than a time-out) such that no Response-PDU could be returned. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Snmp View

Instance	name [String (1..32, ASCII)] subtree [Integer Sequence]
Groups	GROUP Vr Snmp View Provisioned (Prov)
Scope	Device
Description	*Vr/<string> Snmp View/<string, Int_Sequence>* This component represents an entry in the SNMP View Table of RFC 2575.

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The indices of the *View* component are:

- *name* index that is used to identify a family (or a set) of *View* components

- *subTree* index that identifies a MIB subTree to be included or excluded in this view

The component attributes are derived from RFC 2575.

Mib: BaseSnmp

Common Verbs:
Help
List
Display
Add : System_admin
DELete : System_admin

GROUP Vr Snmp View Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes relating to SNMP View Table subTrees. The attributes are derived from RFC 2575.

Mib: BaseSnmp

ATTRIBUTE Vr Snmp View mask

Access:
Read: System_admin
Write: System_admin

Description: This attribute in combination with the *subTree* replication value specifies a family of view subtrees.

Each bit of this bit mask corresponds to a sub-identifier of *subTree*. The most significant bit of the n-th octet of this octet string value (extended if necessary, see below) corresponds to the (8*n- 7)-th sub-identifier, and the least significant bit of the n-th octet of this octet string corresponds to the (8*n)-th sub-identifier, where n is in the range 1 through 16.

Each bit of this bit mask specifies whether or not the corresponding sub-identifiers must match when determining if an OBJECT IDENTIFIER is in this family of view subtrees; a ‘1’ indicates that an exact match must occur; a ‘0’ indicates ‘wild card’, meaning that any sub-identifier value matches.

Thus, the OBJECT IDENTIFIER X of an object instance is contained in a family of view subtrees if the following criteria are met:

For each sub-identifier of the value of *View subTree*, either the n-th bit of *mask* is 0, or the n-th sub-identifier of X is equal to the n-th sub-identifier of the value of *subTree.*

If the value of this bit mask is M bits long and there are more than M sub-

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identifiers in the *subTree* value, then the bit mask is extended with 1's to be the required length.

Note that when the value of this object is the zero-length string, this extension rule results in a mask of all 1's being used (no wild card) and the family of *subTrees* is the one uniquely identified by the *subTree* value.

Mib	BaseSnmp
Values	String (0..16, Hex)
Default	""

ATTRIBUTE Vr Snmp View type

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether the particular family of view subtrees is included or excluded in the SNMPv1 or SNMPv2c community's MIB view. The value ***includedSubtree*** indicates that the corresponding instances of *subTree* and *mask* define a family of view subtrees included in the MIB view. The value ***excludedSubtree*** indicates that the corresponding instances of *subTree* and *mask* define a family of view subtrees excluded in the MIB view.
Mib	BaseSnmp
Values	includedSubtree excludedSubtree
Default	includedSubtree

COMPONENT Vr IfTableEntry

Instance	Decimal (1..65535)
Groups	GROUP Vr IfTableEntry IfTable (Ift) GROUP Vr IfTableEntry AdditionalInfo
Scope	Application
Description	*Vr/<string> IfTableEntry/n* Each instance of this component represents one row in the IfTable as defined in rfc1213. One entry will exist for each *ProtocolPort*
Mib	VirtualRouter
Common Verbs	Help List Display

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GROUP Vr IfTableEntry **IfTable (Ift)**

Properties	Operational
Description	This group represents the SNMP interface table entry.
Mib	VirtualRouter

ATTRIBUTE Vr IfTableEntry **ifAdminStatus (admStatus)**

Access	Read only
Description	This attribute provides the current administration status of the interface. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	up

ATTRIBUTE Vr IfTableEntry **ifOperStatus (opStatus)**

Access	Read only
Description	This attribute provides the current operational status of the interface. The ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	down

ATTRIBUTE Vr IfTableEntry **ifLastChange (lastChange)**

Access	Read only
Description	This attribute provides the value of sysUpTime at the time the interface entered its current operational state. If the current state was entered prior to the last re- initialization of the local network management subsystem, then this object contains a zero value.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry **ifInOctets (inOctets)**

Access	Read only

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Description	This attribute reports the total number of octets received on the interface, including framing characters. The 64-bit version may be available in the *ifHCInOctets* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutOctets (outOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. The 64-bit version may be available in the *ifHCOutOctets* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInDiscards (inDiscard)

Access	Read only
Description	This attribute reports the number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher layer protocol. One possible reason for discarding such a packet could be to free up buffer space.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutDiscards (outDiscard)

Access	Read only
Description	This attribute reports the number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInErrors (inErr)

Access	Read only

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Description	This attribute reports the number of inbound packets that contained errors preventing them from being deliverable to a higher layer protocol.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutErrors (outErr)

Access	Read only
Description	This attribute reports the number of outbound packets that could not be transmitted because of errors.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInUcastPkts (inUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. The 64-bit version may be available in the *ifHCInUcastPkts* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutUcastPkts (outUcast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. The 64-bit version may be available in the *ifHCOutUcastPkts* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInNuCastPkts (inNucast)

Access	Read only
Description	This attribute reports the number of non-unicast (i.e., subnetwork-broadcast or subnetwork-multicast) packets delivered to a higher-layer

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	protocol. The corresponding 64-bit versions may be available in the *ifInMulticastPkts* attribute and the *ifInBroadcastPkts* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutNuCastPkts (outNuCast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols request be transmitted to a non-unicast address, including those that were discarded or not sent. The corresponding 64-bit versions may be available in the *ifOutMulticastPkts* and *ifOutBroadcastPkts* attributes.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInUnknownProtos (inUknownProt)

Access	Read only
Description	This attribute reports the number of packets received via the interface which were discarded because of an unknown or unsupported protocol.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutQlength (outQlen)

Access	Read only
Description	This attribute represents the length of the output packet queue (in packets).
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifDescription (desc)

Access	Read only
Description	This attribute provides a textual string containing information about the interface. This string includes the name of the manufacturer, the product name and the version of the hardware interface.
Mib	VirtualRouter

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Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr IfTableEntry ifType (type)

Access	Read only
Description	This attribute describes the type of interface, distinguished according to the physical/link protocol(s) immediately below the network layer in the protocol stack
Mib	VirtualRouter
Values	other ddnX25 rfc877x25 ethernetCsmacd ethernet8023 tokenBus8024 tokenring8025 man802 starLan hyperChannel fddi lapb sdlc ds1 e1 basicIsdn primaryIsdn propPointToPointSerial ppp bnx ds3 smds frameRelay sonetSdh frameRelayService v35 hssi sonetPath aflane8023 aflane8025 v11 channel pppIwf atmMpeVcEncap atmMpeLlcEncap ilsForwarder ipTunnel virtualMedia localMedia

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Default	No default

ATTRIBUTE Vr IfTableEntry ifMtu (mtu)

Access	Read only
Description	This attribute represents the size of the largest datagram which can be sent/received on the interface, specified in octets. For interfaces that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the interface.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifSpeed (speed)

Access	Read only
Description	This attribute provides an estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifPhysicalAddress (phys)

Access	Read only
Description	This attribute represents the interface's address at the protocol layer immediately `below' the network layer in the protocol stack. For interfaces which do not have such an address (e.g., a serial line), this object should be an octet string of zero length.
Mib	VirtualRouter
Values	String (0..17, ASCII)
Default	No default

ATTRIBUTE Vr IfTableEntry ifSpecific (spec)

Access	Read only
Description	This attribute provides a reference to MIB definitions specific to the particular media being used to realize the interface. For example, if the interface is realized by an ethernet, then the value of this object refers to a document defining objects specific to ethernet. If this information is not present, its value should be set to the OBJECT IDENTIFIER 0.0, which is a syntactically valid object identifier, and any conformant implementation of ASN.1 and BER must be able to generate and recognize this value.

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Mib	VirtualRouter
Values	Integer Sequence
Default	No default

GROUP Vr IfTableEntry AdditionalInfo

Properties	Operational
Description	This group contains additional information associated with this ifEntry, including SNMP ifXTable entry information.
Mib	VirtualRouter

ATTRIBUTE Vr IfTableEntry componentName (compName)

Access	Read only
Description	This attribute provides a component name associated with this ifEntry. This component is the source of the data stored in this entry. More data may be determined about this entry by looking at the component associated with this component name.
Mib	VirtualRouter
Values	The name of the component
Default	No default

ATTRIBUTE Vr IfTableEntry ifHCInOctets (inHCOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifInOctets* attribute.
Mib	VirtualRouter
Values	Long Integer
Default	No default

ATTRIBUTE Vr IfTableEntry ifHCInUcastPkts (inHCUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. This High Capacity counter is a 64-bit version of the *ifInUcastPkts* attribute.
Mib	VirtualRouter
Values	Long Integer
Default	No default

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ATTRIBUTE Vr IfTableEntry ifHCOutOctets (outHCOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifOutOctets* attribute.
Mib	VirtualRouter
Values	Long Integer
Default	No default

ATTRIBUTE Vr IfTableEntry ifHCOutUcastPkts (outHCUcast)

Access	Read only
Description	This attibutes reports the total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. This High Capacity counter is a 64-bit version of the *ifOutUcastPkts* attribute.
Mib	VirtualRouter
Values	Long Integer
Default	No default

COMPONENT Vr SourceRouteEndStation (Sres)

Groups	GROUP Vr Sres AdministrativeControl (AdminControl) GROUP Vr Sres Provisioned (Prov) GROUP Vr Sres OperationalStatus (OperStatus) GROUP Vr Sres OsiState (State) GROUP Vr Sres Operational (Oper)
Scope	Application
Description	*Vr/<string> SourceRouteEndStation* This component defines source routing for source routing end stations.
Mib	SourceRouteEndStation
Dyn. Subcomp.	COMPONENT Vr Sres RouteEntry (Re)
Common Verbs	Help List Display Add DELete

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VERB Clear Vr Sres

Impact	Service
Description	*Clear Vr/<string> Sres* This clears all entries in the *RouteEntry* table. This will in effect delete all *RouteEntry* subcomponents of *Sres*. Routes will then be relearned and the *RouteEntry* subcomponents will be recreated.

GROUP Vr Sres **AdministrativeControl (AdminControl)**

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres **snmpAdminStatus**

Access	Read only
Description	This attribute is used to set the desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed. Changing this attribute from its default value of ***up*** is not allowed at this time.
Mib	SourceRouteEndStation
Values	up down testing
Default	up

GROUP Vr Sres **Provisioned (Prov)**

Properties	Provisioned
Description	This group contains the provisioned attributes for the *SourceRouteEndStation* component.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres **routeTableNumEntries (rtNe)**

Access	Read and write
Criticality	Component
Description	This attribute identifies the maximum number of entries in the *SourceRouteEndStation* routing table. Before you change it, check the network configuration to see how many protocol ports, such as *IpPort* or *IpxPort*, under *Vr Pp* have *endStationSupport* set to ***enable***. The value of *routeTableNumEntries* also depends on the *VirtualRouter* attribute

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sresMaxHeapSpace.

Consider the following attributes of the *SourceRouteEndStation* component when adjusting this number:
- *rtEntriesUsed*
- *rtEntriesFree*
- *rtEntriesDenied*

Mib	SourceRouteEndStation
Values	Decimal (0..65535)
Default	5000

ATTRIBUTE Vr Sres agingTime (at)

Access	Read and write
Description	This attribute specifies the time period used in seconds, to age out learned entries in the routing table.
Mib	SourceRouteEndStation
Values	Decimal (200..1000000)
Units	seconds
Default	900

ATTRIBUTE Vr Sres routeDescriptorLength (rdLength)

Access	Read only
Description	This attribute indicates the maximum number of route descriptors supported by this implementation. The maximum number of hops will be one less because one route descriptor is always required for the destination. This attribute affects the amount of memory used by the route entry table. The larger this attribute is, the more memory the route entry table will use.
Mib	SourceRouteEndStation
Values	Decimal (8..14)
Default	14

GROUP Vr Sres OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres snmpOperStatus

Access	Read only

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Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SourceRouteEndStation
Values	up down testing
Default	up

GROUP Vr Sres OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SourceRouteEndStation
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

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ATTRIBUTE Vr Sres operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SourceRouteEndStation
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Sres usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SourceRouteEndStation
Values	idle active (activ) busy
Default	idle

GROUP Vr Sres Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *SourceRouteEndStation* component.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres rtEntriesUsed (rteU)

Access	Read only

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Description	This attribute specifies the total number of *SourceRouteEndStation* routing table entries. The value is limited by the attribute *routeTableNumEntries*, which is a provisionable attribute. If the value is consistently approaching the value of *routeTableNumEntries*, it is advisable to increase the value provisioned for *routeTableNumEntries*. It indicates a potential shortage of routing table entries in the future.
Mib	SourceRouteEndStation
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Sres rtEntriesFree (rteF)

Access	Read only
Description	This attribute is indicative of the number of *Sres* routing table entries free. A consistently high value for this attribute indicates that there is a resource surplus here, in terms of the memory requirements of the routing table. This surplus could be utilized elsewhere if need be. The value of this attribute is directly influenced by the value of the attribute *routeTableNumEntries.*
Mib	SourceRouteEndStation
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Sres rtEntriesDenied (rteD)

Access	Read only
Description	This attribute counts the number of times a *SourceRouteEndStation* routing table entry was unavailable. Each count indicates an instance of a new route which could not be learned because of a lack of routing table entries. A rapid increase indicates a shortage of routing table entries. To rectify this, increase the number of routing table entries through the provisioned attribute *routeTableNumEntries* under the *SourceRouteEndStation* component. This counter wraps around its maximum value of 4294967295.
Mib	SourceRouteEndStation
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Sres RouteEntry (Re)

Instance	destMacAddress (dma) [String (6, Dashed Hex)] protocolPortName (port) [String (1..20, ASCII)]
Groups	GROUP Vr Sres Re Operational (Oper)

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Scope	Application
Description	*Vr/<string> Sres RouteEntry/xx-xx-xx-xx-xx-xx,<string>* This component is used to contain the data associated with a source routing destination address. Each entry represents one row in the Route Table. The table is indexed by the route destination MAC address in canonical format and *ProtocolPort* name.
Mib	SourceRouteEndStation
Common Verbs	Help List Display

VERB Clear Vr Sres Re

Impact	Service
Description	*Clear Vr/<string> Sres RouteEntry/xx-xx-xx-xx-xx-xx,<string>* This clears this entry in the *RouteEntry* table. This will in effect delete this *RouteEntry* subcomponent of *Sres*. The route may then be relearned and the *RouteEntry* subcomponent will be recreated.

GROUP Vr Sres Re **Operational (Oper)**

Properties	Operational
Description	This group contains information relating to a source routing destination address.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres Re **routeControl (rc)**

Access	Read only
Description	This is the value of the routing control field for this route.
Mib	SourceRouteEndStation
Values	String (2, Hex)
Default	No default

ATTRIBUTE Vr Sres Re **rifLength**

Access	Read only
Description	This attribute is used to display the length of the routing information field in the routing control field.
Mib	SourceRouteEndStation
Values	Decimal (2..30)
Default	No default

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ATTRIBUTE Vr Sres Re rdDirection

Access	Read only
Description	This attribute indicates the direction to use routing descriptors (RDs). If set to ***leftToRight*** the routing descriptors, displayed in *routeDescr*, will be interpreted from left to right. If set to ***rightToLeft*** they will be interpreted from right to left. If *rifLength* is zero, this attribute will be set to ***noRif*** to indicate that there are no routing descriptors to be read.
Mib	SourceRouteEndStation
Values	leftToRight rightToLeft noRif
Default	No default

ATTRIBUTE Vr Sres Re routeDescr (rd)

Access	Read only
Description	This is the embedded sequence of bridge and ring IDs for this route. For destinations on the local ring, the value of this attribute is the zero-length string. Refer to *rdDirection* for the direction in which to read the route descriptors. The format of the hexadecimal data displayed is as follows: 12 bit Ring Number - 4 bit Bridge Number... XXX-X XXX-X XXX-X...
Mib	SourceRouteEndStation
Values	String (0..90, ASCII)
Default	No default

COMPONENT Vr CustomizationSpecification (CustSpec)

Groups	GROUP Vr CustSpec Provisioned (Prov)
Scope	Application
Description	*Vr/n CustomizationSpecification* This component represents the type of customized behavior which will be provided by the parent *VirtualRouter* component when this component is present. This component can only be provisioned when the ***ip*** feature is added to at least one of the following card types: ***Vsp2*** ***2pGeMmSrVsp3*** ***2pOC3ChSmlrVsp3*** ***2pVS***

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2pOC3ChSmIrVsp4e

Mib	CustSpec
Common Verbs	Help List Display Add DELete

GROUP Vr CustSpec Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *CustSpec* component.
Mib	CustSpec

ATTRIBUTE Vr CustSpec customizationType (custType)

Access	Read and write
Description	This attribute specifies the type of customized behavior which will be provided by the parent *VirtualRouter* component. The following customizations are supported: ***pvg*** - It supports *IfTable* stats for the port linked to *VirtualMedia* and CG for *VirtualMedia* for a generic Packet Voice Gateway. ***cdma*** - It is customized for CDMA wireless application over a Packet Voice Gateway.
Mib	CustSpec
Values	pvg cdma
Default	pvg

ATTRIBUTE Vr CustSpec localHostDeviceTopology (lHDTopology)

Access	Read and write
Description	This attribute specifies how the MG15000 behaves in relation to the adjacent NextHop Routers when the customized behavior provided by the parent *VirtualRouter* component has the customizationType set to PVG. The following are the customized Topologies supported: ***noLHD***- MG15000 is not supported as a Local Host Device and functions as a Layer3 Router. ***layer2*** - MG15000 is supported as a Local Host Device to the NextHop Routers via Layer2 Switches.

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layer3 - MG15000 is supported as a Local Host Device to the NextHop Routers directly.

undetermined- MG15000 is supported as a Local Host Device but cannot determine if connected to Layer2 or Layer3 devices.

Mib	CustSpec
Values	noLHD layer2 layer3 undetermined
Default	noLHD

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vr

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vsr

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COMPONENT VoiceSubroute (Vsr)

Instance	Decimal (1..1534)
Groups	GROUP Vsr CustomerIdentifierData (CidData) GROUP Vsr IfEntryProv (IfEntry) GROUP Vsr Provisioned (Prov) GROUP Vsr OsiState (State) GROUP Vsr OperationalStatus (OperStatus) GROUP Vsr Statistics (Stats) GROUP Vsr Operational (Oper)
COLLECTED STATS VoiceSubroute	
Scope	Application
Description	*VoiceSubroute/n* A *VoiceSubroute* component defines the characteristics of the connection to a Private Branch Exchange (PBX). A *VoiceSubroute* is a collection of 64 kbit/s channels on the same physical DS1 or E1 interface. Typically there is one *VoiceSubroute* per physical link.
Mib	VoiceNetworking
Opt. Subcomp.	COMPONENT Vsr SwitchedVoiceService (Svs)
Dyn. Subcomp.	COMPONENT Vsr DebugStatus (Debug)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vsr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VoiceNetworking

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ATTRIBUTE Vsr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	VoiceNetworking
Values	Decimal (0; 1..8191)
Default	0

GROUP Vsr IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	VoiceNetworking

ATTRIBUTE Vsr ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

ATTRIBUTE Vsr ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

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Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VoiceNetworking
Values	Decimal (1..65535)
Default	No default

GROUP Vsr Provisioned (Prov)

Properties	Provisioned
Description	This group represents the provisionable attributes of a *VoiceSubroute*.
Mib	VoiceNetworking

ATTRIBUTE Vsr commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, it specifies the name of the customer that is using this *VoiceSubroute*. Typical use of this attribute is to store customer name.
Mib	VoiceNetworking
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Vsr voiceRoute (vRoute)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the *VoiceRoute* component that this *VoiceSubroute* belongs to.
Mib	VoiceNetworking
Values	Link (Service, subroutes)
Default	No default

ATTRIBUTE Vsr signallingChannel (sigChan)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the signalling channel to be used by the *VoiceSubroute*.
Mib	VoiceNetworking

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Values	Link (Service, subroutes)
Default	No default

GROUP Vsr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE Vsr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vsr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for

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operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vsr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

GROUP Vsr OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VoiceNetworking

ATTRIBUTE Vsr snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing

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Default	up

GROUP Vsr Statistics (Stats)

Properties	Operational
Description	This group provides the operational statistics for the *VoiceSubroute* component.
Mib	VoiceNetworking

ATTRIBUTE Vsr totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of calls that have been received by this *VoiceSubroute* from the PBX. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr totalFailedCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts indicates the total number of calls that have been received by this *VoiceSubroute* from the PBX which failed to be successfully routed through the subnet for various reasons. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr invalidNumberingPlanCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface for which the type of number and the numbering plan identification was not associated to an access code. The numbering plan types *noAccessCode*, *accessCode1* and *accessCode2* are provisioned in the *VoiceRoute*. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Vsr addressResolutionFailedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface which had dialled numbers that had no entry in the *VoiceNetworkingCallServer* data base. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr addressIncompleteCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface which had dialled numbers with insufficient digits to resolve to a unique entry in the *VoiceNetworkingCallServer* data base. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr pathAttributesNotMetCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface for which a path to the end point could not be established based on the attributes specified in the *VoiceProfile*. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr pathSetupTimeOutCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface for which a path to the end point could not be established due to a subnet path setup time-out. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking

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Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr callsRejectedLocally

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface which were rejected by the originating end because it was: 1) a data call on a voice only *VoiceRoute*, or 2) a voice call on a data only *VoiceRoute*, or 3) a data call to an end-point whose *VoiceProfile* prevents data calls from being made. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr callsRejectedByFarEnd

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface which were rejected by the far-end. This rejection could be due to: 1) no free channels at the end-point, or 2) a voice call going to a data only *VoiceRoute*, or 3) a data call going to a voice only *VoiceRoute*, or 4) a signalling protocol incompatibility between end-points. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

GROUP Vsr Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *VoiceSubroute* component.
Mib	VoiceNetworking

ATTRIBUTE Vsr activeChannels

Access	Read: All Write: Illegal

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Description	This attribute indicates the total number of B-channels that currently have active calls.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of B-channels that were active.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently carrying voice.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeModemChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently active, where a 2100Hz tone was detected.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently active carrying data.
Mib	VoiceNetworking

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Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of B-channels that were active carrying voice traffic.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveModemChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of active B-channels that a 2100Hz tone was detected during the previous polling period.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of B-channels that were active carrying data during the previous polling period.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeFaxRelayChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently performing fax relay.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

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ATTRIBUTE Vsr activeTptChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently performing tandem pass through.
Mib	VoiceNetworking
Values	Decimal (0..32)
Default	No default

ATTRIBUTE Vsr peakActiveFaxRelayChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of B-channels that performed fax relay during the previous polling period.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveTptChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of B-channels that performed tandem pass through during the previous polling period.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

COLLECTED STATS VoiceSubroute

Description	The statistics record generated by the VoiceSubroute component.

ATTRIBUTE Vsr totalCallsFromIf

Description	This spooled statistic counts the number of calls that have been received by this *VoiceSubroute* from the PBX in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vsr totalFailedCallsFromIf

Description	This spooled statistic counts the number of calls that have been received by this *VoiceSubroute* from the PBX which failed to be successfully routed through the subnet in the last statistics collection interval.

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Values	Decimal (0..65535)

ATTRIBUTE Vsr invalidNumberingPlanCalls

Description	This spooled statistic counts the calls from the interface for which the type of number and the numbering plan identification was not associated with a diallingPlan in the last statistics collection interval. The numbering plan types *diallingPlan0, diallingPlan1, diallingPlan2* are provisioned in the *VoiceRoute*.
Values	Decimal (0..65535)

ATTRIBUTE Vsr addressResolutionFailedCalls

Description	This spooled statistic counts the calls from the interface which had dialled numbers that had no entry in the *VoiceNetworkingCallServer* data base in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vsr addressIncompleteCalls

Description	This spooled statistic counts the calls from the interface which had dialled numbers with insufficient digits to resolve to a unique entry in the *VoiceNetworkingCallServer* data base in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vsr pathAttributesNotMetCalls

Description	This spooled statistic counts the calls from the interface for which a path to the end point could not be established based on the attribute specified in the *VoiceProfile* in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vsr pathSetupTimeOutCalls

Description	This spooled statistic counts the calls from the interface for which a path to the end point could not be established due to a subnet path setup time-out in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vsr callsRejectedLocally

Description	This spooled statistic counts the calls from the interface which were rejected by the originating end in the last statistics collection interval because it was: 1) a data call on a voice only *VoiceRoute*, or 2) a voice call on a data only *VoiceRoute*, or 3) a data call to an end-point whose *VoiceProfile* prevents data calls from being made.
Values	Decimal (0..65535)

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ATTRIBUTE Vsr callsRejectedByFarEnd

Description	This spooled statistic counts the calls from the interface which were rejected by the far-end in the last statistics collection interval.This rejection could be due to: 1) no free channels at the end-point, or 2) a voice call going to a data only *VoiceRoute*, or 3) a data call going to a voice only *VoiceRoute*, or 4) a signalling protocol incompatibility between end-points.
Values	Decimal (0..65535)

ATTRIBUTE Vsr peakActiveChannels

Description	This spooled statistic counts the peak number of B-channels that were active in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveVoiceChannels

Description	This spooled statistic counts the peak number of B-channels that were active carrying voice in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveModemChannels

Description	This spooled statistic counts the peak number of active B-channels that a 2100Hz tone was detected in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveDataChannels

Description	This spooled statistic counts the maximum number of B-channels that were active carrying data in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveFaxRelayChannels

Description	This spooled statistic counts the maximum number of B-channels that were active carrying fax relay calls in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr totalCalls

Description	This spooled statistic counts the call attempts processed on this channel (in both directions) in the last statistics collection interval. This counter includes the number of unsuccessful as well as successful call attempts.
Vector of	Decimal (0..65535)
Index	Decimal (1..32)

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ATTRIBUTE Vsr totalCallSeconds

Description	This spooled statistic counts the number of seconds that each channel is handling a call in the last statistics collection interval. This is regardless of whether the call is successful or not. In other words, this is the amount of time that the channel is not in the idle state.
Vector of	Decimal (0..65535)
Units	seconds
Index	Decimal (1..32)

ATTRIBUTE Vsr voiceRouteInstance

Description	This spooled statistic is the value of the *VoiceRoute* linked to this *VoiceSubRoute*.
Values	Decimal (1..16)

COMPONENT Vsr SwitchedVoiceService (Svs)

Instance	Decimal (1..32)
Groups	GROUP Vsr Svs IfEntryProv (IfEntry) GROUP Vsr Svs Operational (Oper) GROUP Vsr Svs Statistics (Stats) GROUP Vsr Svs OsiState (State) GROUP Vsr Svs OperationalStatus (OperStatus)
Scope	Application
Description	*Vsr/n SwitchedVoiceService/n* The *SwitchedVoiceService* component defines the operational characteristics of the connection to a Private Branch Exchange (PBX). One instance of this component must be required for each channel (that is, time slot) which is part of the *VoiceSubroute*.
Mib	VoiceNetworking
Subcomponents	COMPONENT Vsr Svs Framer (Framer)
Dyn. Subcomp.	COMPONENT Vsr Svs LogicalConnection (LCo) COMPONENT Vsr Svs VnetSvsDebug (Debug)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vsr Svs IfEntryProv (IfEntry)

Properties	Provisioned

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Description	This group contains the provisionable attributes for the ifEntry.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

ATTRIBUTE Vsr Svs ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VoiceNetworking
Values	Decimal (1..65535)
Default	No default

GROUP Vsr Svs Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *SwitchedVoiceService* component.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs status

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the channel. ***idle*** means that there is no call currently active on this channel. ***seized*** means that the channel is currently setting up a call, but a connect message has not been received. ***answered*** means that a connect message has been received. ***clearing*** means that the call is being taken down. ***lockout*** means that due to glare or channel rejection, the channel is available for ingress calls only. That is, either the PBX and the node tried

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to seize the channel for a call at the same time (glare), or the PBX rejected the node seizure.
idleMaintenance means that due to explicit channel maintenance messages, the channel is not available for egress calls. This can only happen when the protocol control places the channel into a maintenance state, and only happens if the node receives a message causing the channel state change such as the SERVICE maintenance message.

Mib	VoiceNetworking
Values	idle seized answered clearing lockout idleMaintenance (maint)
Default	No default

ATTRIBUTE Vsr Svs profileNumber (pn)

Access	Read: All Write: Illegal
Description	This attribute indicates the *VoiceProfile* number that is being used for this call. If no call is active, then it displays the value of the last profile used.
Mib	VoiceNetworking
Values	Decimal (0..128)
Default	0

ATTRIBUTE Vsr Svs callType (ct)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of call that this channel is currently carrying. If no call is active, then it displays the value for the last call.
Mib	VoiceNetworking
Values	voice data modem
Default	No default

ATTRIBUTE Vsr Svs calledNumber (cldn)

Access	Read: All Write: Illegal
Description	This attribute indicates the dialled number that is active on this channel. If no call is active, then it displays the dialled number from the last call.

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Mib	VoiceNetworking
Values	BCD (1..32)
Default	No default

ATTRIBUTE Vsr Svs callingNumber (clgdn)

Access	Read: All Write: Illegal
Description	This attribute indicates the originator's number for the currently active call. If no call is active, then it displays the originator's number from the last call.
Mib	VoiceNetworking
Values	BCD (1..16)
Default	No default

ATTRIBUTE Vsr Svs clearCauseCode (ccc)

Access	Read: All Write: Illegal
Description	This attribute indicates the clear cause code of the call. This code is always the Q.931 code, regardless of the access protocol.
Mib	VoiceNetworking
Values	Hex (H.0..H.7f)
Default	No default

GROUP Vsr Svs Statistics (Stats)

Properties	Operational
Description	This group provides the operational attributes for the *SwitchedVoiceService* component.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs totalCalls (tc)

Access	Read: All Write: Illegal
Description	This attribute counts the call attempts processed on this channel (in both directions). This counter includes the number of unsuccessful as well as successful call attempts. The value wraps when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE Vsr Svs totalCallSeconds (tcs)

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of seconds that this channel is handling a call. This is regardless of whether the call is successful or not. In other words, this is the amount of time that the channel is not in the idle state. The value wraps when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Units	seconds
Default	0

GROUP Vsr Svs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking

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Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vsr Svs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vsr Svs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

GROUP Vsr Svs OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

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Mib	VoiceNetworking

ATTRIBUTE Vsr Svs snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

COMPONENT Vsr Svs Framer (Framer)

Groups	GROUP Vsr Svs Framer Provisioned (Prov) GROUP Vsr Svs Framer OsiState (State) GROUP Vsr Svs Framer Statistics (Stats) GROUP Vsr Svs Framer Operational (Oper) GROUP Vsr Svs Framer Negotiation (Neg)

COLLECTED STATS VoiceSubroute SwitchedVoiceService Framer

Scope	Device
Description	*Vsr/n Svs/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *E1* or *DS1*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts).
Mib	VoiceNetworking
Dyn. Subcomp.	COMPONENT Vsr Svs Framer VfpDebug COMPONENT Vsr Svs Framer MvpDebug COMPONENT Vsr Svs Framer PcmCapture (PcmCapture)
Common Verbs	Help List Display

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GROUP Vsr Svs Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VoiceNetworking
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Vsr Svs Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command

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was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib VoiceNetworking

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Vsr Svs Framer operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib VoiceNetworking

Values
enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Vsr Svs Framer usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib VoiceNetworking

Values
idle
active (activ)
busy

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Default	idle

GROUP Vsr Svs Framer **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer **totalCells**

Access	Read only
Description	This attribute counts the cells received from the interface. Each cell contains 44 bytes of data from the DS0 channel. Since a DS0 provides data at 64kbit/s, each cell contains 5.5 ms of audio data. This data flow is measured before compression is performed on the channel. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **audioCells**

Access	Read only
Description	This attribute counts the total number of cells containing audio data received from the interface while the channel was seized. A CCS channel is always considered to be seized. Audio data includes cells containing voice as well modem audio, but not silence. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **silenceCells**

Access	Read only
Description	This attribute counts the total number of cells containing silence data received from the interface which was not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the operation of the silence suppression feature or for CAS channels when the ABCD

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signalling bits go idle.
A cell contains 44 bytes of data from the DS0 channel(5.5 ms).
This flow is measured before compression is performed on the channel.
This counter wraps to zero after reaching its maximum value.

Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **lrcErrors**

Access	Read only
Description	This attribute counts the number of frames received from the network with LRC errors.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **frmLostInNetwork**

Access	Read only
Description	This attribute counts the number of frames which the service knows it did not receive from the network although they were sent in to the network from the far end.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **frmUnderRuns**

Access	Read only
Description	This attribute counts the number of times that a frame was needed but was not available because it had been delayed too long in the network. This error may occur repeatedly if the interface clocks at the two access points to the network are operating at different rates.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **frmDumped**

Access	Read only
Description	This attribute counts the number of frames which have been dumped because the output queue grew too large. This can occur if the clock rate

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	on the incoming interface is faster than the clock rate on the outgoing interface and there are no silence periods to absorb the difference, or when a compression rate change occurs. This count wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **faxRelayCells**

Access	Read only
Description	This attribute counts the total number of fax relay cells sent to the network. This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **modemFaxCells**

Access	Read only
Description	This attribute counts the total number of cells containing modem data received from the interface while the channel was seized. A CCS channel is always considered to be seized. Cells are considered to be modem data if a constant energy level above -25 dBmO is detected for more than 900 ms. An energy level below -36 dBmO for more than 650 ms is required to detect that the modem is no longer present. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer **faxIdleCells**

Access	Read only
Description	This attribute counts the total number of cells containing silent fax data received from the interface which were not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the silence Suppression feature or for CAS channels when the ABCD signalling bits go idle. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel.

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	This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer frmToNetwork

Access	Read only
Description	This attribute counts the number of frames sent to the network at each encoding rate. Fax relay cells are not included.
Mib	VoiceNetworking
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

ATTRIBUTE Vsr Svs Framer frmFromNetwork

Access	Read only
Description	This attribute counts the number of frames received from the network at each encoding rate.
Mib	VoiceNetworking
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

GROUP Vsr Svs Framer Operational (Oper)

Properties	Operational
Description	This group contains the operational data for a *Svs Framer*.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer currentEncoding

Access	Read only

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Description	This attribute indicates the encoding currently being performed on this channel. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is being performed. ***g726*** indicates that adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 is being performed. ***g728*** indicates that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 is being performed. ***g729*** indicates that the Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 is being performed. ***v27*** indicates that the algorithm defined by ITU-T V.27 is being performed. ***v29*** indicates that the algorithm defined by ITU-T V.29 is being performed.
Mib	VoiceNetworking
Values	none g729 g728 g723 g726 g711 v22 v22bis faxRelay v27 v29 v17
Default	No default

ATTRIBUTE **Vsr Svs Framer** **currentRate**

Access	Read only
Description	This attribute indicates the current encoding rate for frames being sent to the network.
Mib	VoiceNetworking
Values	0 0.3 1.2 2.4 4.8 5.3 6.3 7.2 8.0 9.6 12.0 14.4 16.0 24.0

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	32.0 64.0
Units	kbit/s
Default	No default

ATTRIBUTE Vsr Svs Framer **tptStatus**

Access	Read only
Description	This attribute indicates the current status of the tandem pass through algorithm. If *tptStatus* is ***operating,*** the tandem pass through algorithm is cutting through a voice switch. If *tptStatus* is ***monitoring***, *negotiatedTandemPassThrough* is ***enabled***, but the tandem pass through algorithm is not cutting through a voice switch. If *tptStatus* is ***disabled***, *negotiatedTandemPassThrough* is ***disabled***.
Mib	VoiceNetworking
Values	operating monitoring disabled
Default	No default

GROUP Vsr Svs Framer **Negotiation (Neg)**

Properties	Operational
Description	This group contains the attributes indicating the results of voice networking end to end negotiation.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer **negotiatedSilenceSuppression (nSilenceSuppression)**

Access	Read and write
Description	This attribute indicates the result of negotiating silence suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp silenceSuppression*. If *negotiatedSilenceSuppression* is ***off***, silence suppression is never performed. If *negotiatedSilenceSuppression* is ***on***, silence suppression is always performed. If *negotiatedSilenceSuppression* is ***congested***, silence suppression is performed only when the network is congested. If *negotiatedSilenceSuppression* is ***slow***, silence suppression begins after 10 to 20 seconds without any speech or audio being detected. If *negotiatedSilenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are applied.
Mib	VoiceNetworking

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Values	off on congested slow slowAndCongested
Default	No default

ATTRIBUTE Vsr Svs Framer negotiatedFisG711G726 (nFisG711G726)

Access	Read and write
Description	This attribute indicates the result of negotiating G.711/G.726 fax idle suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp faxIdleSuppressionG711G726*.
Mib	VoiceNetworking
Values	off on
Default	No default

ATTRIBUTE Vsr Svs Framer negotiatedDtmfRegeneration (nDtmfRegeneration)

Access	Read and write
Description	This attribute indicates the result of negotiating DTMF regeneration with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp dtmfRegeneration*. If *negotiatedDtmfRegeneration* is ***on***, DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is generated before being sent to the link. If *negotiatedDtmfRegeneration* is ***off***, DTMF tones are transported transparently.
Mib	VoiceNetworking
Values	off on
Default	No default

ATTRIBUTE Vsr Svs Framer negotiatedV17AsG711G726 (nV17AsG711G726)

Access	Read only
Description	This attribute indicates how this *SwitchedVoiceService* negotiates with V.17 fax machines, as determined by negotiation with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp v17EncodedAsG711G726*.

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If *negotiatedV17AsG711G726* is ***no,*** V.17 fax machines are instructed to use V.29, and V.29 fax traffic sent by fax machines is demodulated and encoded using fax relay.

If *negotiatedV17AsG711G726* is ***yes***, V.17 fax machines are permitted to use V.17 and V.17 fax traffic sent by fax machines is encoded using G.711 or G.726, at the rates given in *negotiatedRates*.

Mib — VoiceNetworking

Values — yes
no

Default — No default

ATTRIBUTE Vsr Svs Framer negotiatedTandemPassThrough (nTpt)

Access — Read only

Description — This attribute indicates the result of negotiating tandem pass through with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp tandemPassThrough*.

Mib — VoiceNetworking

Values — enabled
disabled

Default — No default

ATTRIBUTE Vsr Svs Framer negotiatedEncoding (nEncoding)

Access — Read and write

Description — This attribute indicates the results of negotiating audio call encodings for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *Vncs Vp voiceEncodingChoice* and *Vncs Vp modemFaxEncodingChoice*.

voice traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ***modemFax*** traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. ***fax*** traffic is all traffic after a fax preamble but before speech or call release.

g711 indicates that pulse code modulation (PCM) defined by ITU-T G.711 is the negotiated encoding.
g726 indicates that Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 is the negotiated encoding. ***g711G726*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 and Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 are both negotiated encodings. If *negotiatedEncoding* is ***g711G726***, the actual encoding performed can be either G.711 or G.726, depending on network congestion.
g728 indicates that Low Delay Coded Excited Linear Predictive Coder

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	(CS-ACELP) defined by ITU-T G.728 is the negotiated encoding. ***g729*** indicates that Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.729 is the negotiated encoding. ***v29V27Relay*** indicates that fax relay using ITU-T V.29 or ITU-T V.27 is the negotiated encoding. ***v17V29V27Relay*** indicates that fax relay using ITU-T V.17, ITU-T V.29, or ITU-T V.27 is the negotiated encoding. If all negotiated encodings are ***none***, the negotiation of audio call encodings is not complete.
Mib	VoiceNetworking
Vector of	g711 g726 g711G726 g728 g729 v29V27Relay v17V29V27Relay none
Index	voice modemFax fax
Default	No default

ATTRIBUTE Vsr Svs Framer **negotiatedRates (nRates)**

Access	Read and write
Description	This attribute indicates the results of negotiating minimum and maximum rates for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *Vncs Vp voiceRates* and *Vncs Vp modemFaxRates*.
Mib	VoiceNetworking
Array of	8.0 16.0 24.0 32.0 64.0 0.0 0.3 1.2 2.4 4.8 7.2 9.6 12.0 14.4

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Units	kbit/s	
Row	traffic modemFax fax]	[voice
Column	rate max]	[min
Default	No default	

COLLECTED STATS VoiceSubroute SwitchedVoiceService Framer

Description — The statistics record generated by the VoiceSubroute SwitchedVoiceService Framer component.

ATTRIBUTE Vsr Svs Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Vsr Svs Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Vsr Svs Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Vsr Svs Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Vsr Svs Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

COMPONENT Vsr Svs Framer VfpDebug

Scope — Application

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Description	*Vsr/m Svs/n Framer VfpDebug* This component contains debugging attributes for a voice service running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** functional processor.
Mib	VoiceNetworking
Common Verbs	Help List Display

COMPONENT Vsr Svs Framer MvpDebug

Scope	Application
Description	*Vsr/m Svs/n Framer MvpDebug* This component contains debugging attributes on a voice service's framer running on a ***1pE1Mvp***, ***1pDS1Mvp*** or ***1pTTC2mMvp*** functional processor.
Mib	VoiceNetworking
Common Verbs	Help List Display

COMPONENT Vsr Svs Framer PcmCapture (PcmCapture)

Scope	Application
Description	*Vsr/n Svs/m Framer PcmCapture* This component contains attributes for PCM data capture.
Mib	VoiceNetworking
Common Verbs	Help List Display

COMPONENT Vsr Svs LogicalConnection (LCo)

Groups	GROUP Vsr Svs LCo PathData GROUP Vsr Svs LCo Statistics (Stats)
Scope	Application

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Description	*...Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	VoiceNetworking
Common Verbs	Help List Display

VERB RERoute Vsr Svs LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Vsr Svs LCo **PathData**

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs LCo **state**

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route

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	selection but received no route and is now waiting to retry route selection again.
Mib	VoiceNetworking
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE Vsr Svs LCo overrideRemoteName (orn)

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	VoiceNetworking
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Vsr Svs LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	VoiceNetworking
Values	calling called
Default	No default

ATTRIBUTE Vsr Svs LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	VoiceNetworking

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Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vsr Svs LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	VoiceNetworking
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Vsr Svs LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	VoiceNetworking
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Vsr Svs LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.

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Mib	VoiceNetworking
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vsr Svs LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	VoiceNetworking
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vsr Svs LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Vsr Svs LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Vsr Svs LCo requiredTrafficType (rttyp)

Access	Read only

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Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.
Mib	VoiceNetworking
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Vsr Svs LCo **permittedTrunkTypes (pttyp)**

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	VoiceNetworking
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Vsr Svs LCo **requiredSecurity (rsec)**

Access	Read only

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Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	VoiceNetworking
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vsr Svs LCo **requiredCustomerParameter (rcparm)**

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	VoiceNetworking
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vsr Svs LCo **emissionPriority (epri)**

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority*. *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	VoiceNetworking
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Vsr Svs LCo **discardPriority (dpri)**

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority*. One is used for

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paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).

Mib	VoiceNetworking
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Vsr Svs LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	VoiceNetworking
Values	normal manual forced
Default	No default

ATTRIBUTE Vsr Svs LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.

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Mib	VoiceNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vsr Svs LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vsr Svs LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	VoiceNetworking
Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE Vsr Svs LCo lastTearDownReason

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Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up. ***normalShutDown*** - This path has gone down due to normal call termination. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction. ***insufficientRxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction. ***trunkFailure***- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute. ***trunkCardFailure***- A trunk FP card has failed along the path. ***accessCardFailure***- The FP on which the peer access service was running has failed. ***operatorForced***- The path has terminated due to the operator locking a trunk along the path. ***lostLcnClash***- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC. ***networkCongestion*** - The path has failed due to control information being lost and not recoverable. ***trunkNotFound*** - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly. ***farEndNotFound*** - The far end is not provisioned or is not up. Check remote Name. ***wrongModuleReached*** - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*. ***farEndBusy*** - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning. ***callLoopedBack*** - This LCo is provisioned to call itself. Re-provision since this is invalid. ***unknownReason*** - The failure was not resolved. ***farEndNotReady*** - The remote end was reached but the connection was refused due to the remote end not being enabled. ***remoteNameMismatch*** - The remote end has alarmed and rejected this setup due to remoteName provisioning. ***serviceTypeMismatch*** - The remote Service Type does not match this service type. Check provisioning.

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reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib — VoiceNetworking

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default — none

ATTRIBUTE Vsr Svs LCo pathFailureAction

Access — Read only

Description — This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If

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disconnectConnection is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.

All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends

Mib	VoiceNetworking
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Vsr Svs LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority.* A connection may also always bump in order to obtain the best route.
Mib	VoiceNetworking
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Vsr Svs LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	VoiceNetworking

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Values	disabled enabled
Default	No default

ATTRIBUTE Vsr Svs LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	VoiceNetworking
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vsr Svs LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	VoiceNetworking
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Vsr Svs LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	VoiceNetworking
Values	Long Integer
Default	No default

ATTRIBUTE Vsr Svs LCo bytesToNetwork

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Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	VoiceNetworking
Values	Long Integer
Default	No default

ATTRIBUTE Vsr Svs LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	VoiceNetworking
Values	Long Integer
Default	No default

ATTRIBUTE Vsr Svs LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	VoiceNetworking
Values	Long Integer
Default	No default

COMPONENT Vsr Svs VnetSvsDebug (Debug)

Scope	Application
Description	*Vsr/n Svs/n Debug* The *Debug* component defines the debug operational characteristics of the *svs* component.
Mib	VoiceNetworking
Common Verbs	Help List Display

COMPONENT Vsr DebugStatus (Debug)

Scope	Application
Description	*Vsr/n Debug* The *Debug* component defines the debug operational characteristics of the VoiceSubroute component. There are three main areas of interest, the

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VoiceSubroute itself, the call state machines (CSM), and the call channel manager (CCM).
These debug groups can be reached by typing:
d Vsr/n debug
d Vsr/n debug sr
d Vsr/n debug csm
d Vsr/n debug ccm

Mib — VoiceNetworking

Common Verbs
- Help
- List
- Display

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vsr

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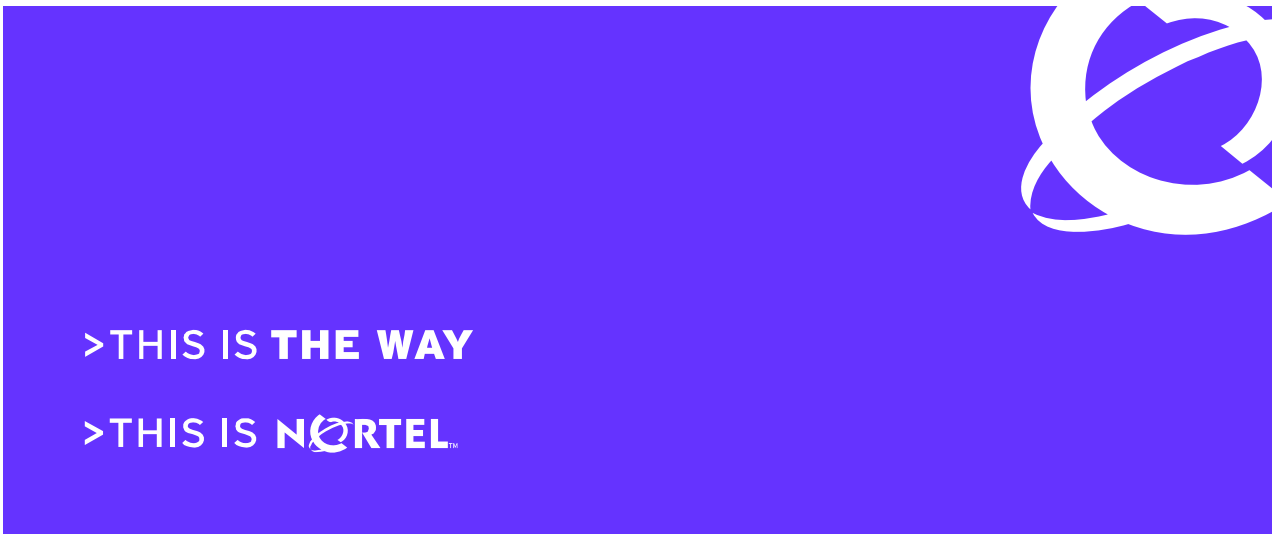

Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vs

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COMPONENT VoiceService (Vs)

Instance	Decimal (1..65535)
Groups	GROUP Vs CustomerIdentifierData (CidData) GROUP Vs IfEntryProv (IfEntry) GROUP Vs OperationalStatus (OperStatus) GROUP Vs OsiState (State) GROUP Vs Operational
Scope	Application
Description	*VoiceService/n* The *VoiceService* (*Vs*) component specifies the characteristics of an instance of the voice service. One instance of this component is required for each channel offering voice traffic. The instance number is arbitrary.
Mib	Voice
Subcomponents	COMPONENT Vs Framer (Framer) COMPONENT Vs PermanentLogicalConnection (Plc)
Dyn. Subcomp.	COMPONENT Vs LogicalConnection (LCo)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vs CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Voice

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ATTRIBUTE vs customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Voice
Values	Decimal (0; 1..8191)
Default	0

GROUP vs IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Voice

ATTRIBUTE vs ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Voice
Values	up down testing
Default	up

ATTRIBUTE vs ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

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Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Voice
Values	Decimal (1..65535)
Default	No default

GROUP Vs OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Voice

ATTRIBUTE Vs snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Voice
Values	up down testing
Default	up

GROUP Vs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Voice

ATTRIBUTE Vs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value

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is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Voice
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Voice
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare

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capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Voice
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Vs availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the component is

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	degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components. The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***. The value ***logFull*** is not used. The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.
Mib	Voice
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE vs proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

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The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Voice
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE vs controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Voice
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

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ATTRIBUTE Vs alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Voice
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Vs standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service

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but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Voice

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE vs unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Voice

Values:
false
true

Default: false

GROUP vs Operational

Properties: Operational

Description: This group contains operational attributes related to a *Vs*.

Mib: Voice

ATTRIBUTE vs serviceFailureReason

Access:
Read: Passive
Write: Illegal

Description: This attribute indicates the result of end to end negotiation with the remote end across the subnet.

If *serviceFailureReason* is ***undetermined***, this *Vs* has not performed end

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to end negotiation with the remote end, and may or may not be up.
serviceFailureReason is ***undetermined*** if this *Vs* just became enabled, if there is not enough available bandwidth to perform negotiation or if the remote end cannot perform negotiation with this *Vs*.
If *serviceFailureReason* is ***none***, end to end negotiation passed.
If *serviceFailureReason* is ***mismatchedService***, end to end negotiation failed because the remote end service is not a *Vs*.
If *serviceFailureReason* is ***mismatchedVoiceEncoding***, end to end negotiation failed because the local *Vs Framer voiceEncoding* does not match the remote *Vs Framer voiceEncoding*.
If *serviceFailureReason* is ***mismatchedVoiceRates***, end to end negotiation failed because the local provisioned ingress voice rates are not compatible with the remote end's egress capabilities or the remote provisioned ingress voice rates are not compatible with the local egress capabilities.
If *serviceFailureReason* is ***mismatchedModemFaxEncoding***, end to end negotiation failed because the local *Vs Framer modemFaxEncoding* does not match the remote *Vs Framer modemFaxEncoding*.
If *serviceFailureReason* is ***mismatchedModemFaxRates***, end to end negotiation failed because the local provisioned ingress modem and fax rates are not compatible with the remote end's egress capabilities or the remote provisioned ingress modem and fax rates are not compatible with the local egress capabilities.
If *serviceFailureReason* is ***mismatchedCasSignalling***, end to end negotiation failed because the local *Vs Framer casSignalling* does not match the remote *Vs Framer casSignalling*.
If *serviceFailureReason* is ***mismatchedSignalBits***, end to end negotiation failed because the local *Vs Framer signalBits* does not match the remote *Vs Framer signalBits*. *serviceFailureReason* is ***mismatchedSignalBits*** only if the local *Vs Framer casSignalling* is ***transparent***.
If *serviceFailureReason* is ***compDecodeFailed***, end to end negotiation failed because the information received from the remote end was not recognized as valid data
If *serviceFailureReason* is ***dspFailure***, the associated DSP is broken. This value is only applicable for 1pMVPe and 4pMVPe FPs.

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Mib	Voice
Set of	none undetermined logicalConnection mismatchedService mismatchedVoiceEncoding mismatchedVoiceRates mismatchedModemFaxEncoding mismatchedModemFaxRates mismatchedCasSignalling mismatchedSignalBits mismatchedSilenceSuppression mismatchedFaxIdleSuppression compDecodeFailed dspFailure
Default	No default

COMPONENT Vs Framer (Framer)

Groups	GROUP Vs Framer Provisioned (Prov) GROUP Vs Framer CoderOptions (Coder) GROUP Vs Framer SignalOptions (Signal) GROUP Vs Framer OsiState (State) GROUP Vs Framer Statistics (Stats) GROUP Vs Framer Negotiation (Neg) GROUP Vs Framer Operational (Oper)

COLLECTED STATS VoiceService Framer

Scope	Application
Description	*Vs/n Framer* The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *Lp E1/n* or *Lp DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for statistics and the results of end to end negotiation with the remote end across the subnet.
Mib	Voice
Dyn. Subcomp.	COMPONENT Vs Framer VfpDebug COMPONENT Vs Framer MvpDebug COMPONENT Vs Framer PcmCapture (PcmCapture)
Common Verbs	Help List Display

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GROUP Vs Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	Voice

ATTRIBUTE Vs Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	Voice
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Vs Framer CoderOptions (Coder)

Properties	Provisioned
Description	This group contains attributes which specify how audio data on a channel is encoded and decoded.
Mib	Voice

ATTRIBUTE Vs Framer maxVoiceG711G726Rate (maxVoiceBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum desired ingress bit rate used during voice traffic when *voiceEncoding* is ***g711G726***. The negotiated maximum ingress ***voice*** rate is available in *negotiatedIgRates.* *maxVoiceG711G726Rate* can be set to ***16*** only if this *Voice Service* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card.
Mib	Voice

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Values	64 32 24 16
Units	kbit/s
Default	64

ATTRIBUTE Vs Framer minVoiceG711G726Rate (minVoiceBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum desired ingress bit rate used during voice traffic when *voiceEncoding* is ***g711G726***. The negotiated minimum ingress ***voice*** rate is available in *negotiatedIgRates.* *minVoiceG711G726Rate* defaults to ***24*** if the ***voiceCompressor*** or ***vtds*** feature is present. Otherwise, *minVoiceG711G726Rate* defaults to ***64***.
Mib	Voice
Values	64 32 24 16
Units	kbit/s
Default	No default

ATTRIBUTE Vs Framer maxModemFaxG711G726Rate (maxModemBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum desired ingress rate used during modemFax and/or fax traffic. Voice traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ModemFax traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. Fax traffic is all traffic after a fax preamble but before speech or call release. If *modemFaxEncoding* is ***g711G726***, *maxModemFaxG711G726Rate* specifies the maximum rate used during modemFax traffic and fax traffic. If *modemFaxEncoding* is ***faxRelayG711G726***, *maxModemFaxG711G726Rate* specifies the maximum rate used during modemFax traffic only. If *modemFaxEncoding* is ***faxRelayOnly*** or ***useVoiceEncoding***,

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maxModemFaxG711G726Rate is ignored.

The negotiated maximum ingress ***modemFax*** and ***fax*** rates are available in *negotiatedIgRates.*

maxModemFaxG711G726Rate can be set to ***16*** or ***24*** only if this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card.

Mib: Voice

Values:
64
32
24
16

Units: kbit/s

Default: 64

ATTRIBUTE Vs Framer minModemFaxG711G726Rate (minModemBitRate)

Access: Read and write

Criticality: Process

Description: This attribute specifies the minimum desired ingress rate used during modemFax and/or fax traffic.

Voice traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ModemFax traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. Fax traffic is all traffic after a fax preamble but before speech or call release.

If *modemFaxEncoding* is ***g711G726***, *minModemFaxG711G726Rate* specifies the minimum desired rate used during modemFax traffic and fax traffic.
If *modemFaxEncoding* is ***faxRelayG711G726***, *minModemFaxG711G726Rate* specifies the minimum desired rate used during modemFax traffic only.
If *modemFaxEncoding* is ***faxRelayOnly*** or ***useVoiceEncoding***, *minModemFaxG711G726Rate* is ignored.

The negotiated minimum ingress ***modemFax*** and ***fax*** rates are available in *negotiatedIgRates.*

minModemFaxG711G726Rate defaults to ***32*** if the ***voiceCompressor*** or ***vtds*** feature is present. Otherwise, *minModemFaxG711G726Rate* defaults to ***64***.

Mib: Voice

Values:
64
32

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	24 16
Units	kbit/s
Default	No default

ATTRIBUTE Vs Framer silenceSuppression

Access	Read and write
Criticality	Process
Description	This attribute specifies when ingress silence suppression is desired during voice traffic. If *silenceSuppression* is ***off***, silence suppression is never desired. If *silenceSuppression* is ***on***, silence suppression is always desired. If *silenceSuppression* is ***congested***, silence suppression is desired only when the network is congested. If *silenceSuppression* is ***slow***, silence suppression is desired only after 20 seconds without audio. If *silenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are desired. If *silenceSuppression* is ***casIdleCod***e, the silence suppression is only desired when the *idleCode* is active for 20 to 40 seconds. *casSignalling* must be set to ***interpret*** if *silenceSuppression* is set to ***casIdleCode***. *silenceSuppression* can be set to ***casIdleCode*** only if this *VoiceService* is running on a ***DS1V, E1V, 1pDS1V, 1pE1V*** or ***J2MV*** card. The negotiated ingress silence suppression is available in *negotiatedIgSilenceSuppression.* If the ***silenceSuppressor*** or ***vtds*** feature is present, *silenceSuppression* defaults to ***on***. Otherwise, *silenceSuppression* defaults to ***off***.
Mib	Voice
Values	off on congested slow slowAndCongested casIdleCode
Default	No default

ATTRIBUTE Vs Framer echoCancellation

Access	Read and write
Criticality	Process
Description	This attribute specifies whether echo cancellation is performed on this *VoiceService*. If *echoCancellation* is ***on***, the internal echo canceler is

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enabled and echo cancellation is performed. If *echoCancellation* is ***off***, the internal echo canceler is placed in transparent bypass mode and echo cancellation is never performed. If the ***echoCancellor*** or ***vtds*** feature is present, *echoCancellation* defaults to ***on***. Otherwise *echoCancellation* defaults to ***off***.

Mib	Voice
Values	off on
Default	No default

ATTRIBUTE Vs Framer aLawConversion

Access	Read and write
Criticality	Process
Description	This attribute specifies whether mu-law to A-law PCM conversion is performed. *aLawConversion* only needs to be set to ***on*** when this voice service is running on a ***DS1V*** or ***1pDS1V*** FP and the *VoiceService* at the remote end of the connection is running on an ***E1V*** or ***1pE1V*** FP using a software release prior to 5.0. If the remote end software release is 5.0 or later, end to end negotiation determines the compander law to use at each end of the connection. In this case, the value of *aLawConversion* is ignored.
Mib	Voice
Values	off on
Default	off

ATTRIBUTE Vs Framer voiceEncoding

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies how ingress voice traffic is encoded. If *voiceEncoding* is ***g711G726***, ingress voice traffic is encoded using either pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726. The actual encoding and rates performed depends on congestion in the network and the minimum and maximum negotiated ingress ***voice*** rates in *negotiatedIgRates*. If *voiceEncoding* is ***g728at16***, ingress voice traffic is encoded using the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728. If *voiceEncoding* is ***g728at16***, the bit rate of all voice traffic is fixed at 16 kbit/s. *minVoiceG711G726Rate* and

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maxVoiceG711G726Rate do not apply if *voiceEncoding* is ***g728at16***.

If *voiceEncoding* is ***g729at8***, ingress voice traffic is encoded using the Conjugated Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729. If *voiceEncoding* is ***g729at8***, the bit rate of all voice traffic is fixed at 8 kbit/s. *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* do not apply if *voiceEncoding* is ***g729at8***.

The current ingress encoding and encoding rate are available in *currentEncoding* and *currentRate*.

voiceEncoding cannot be set to ***g728at16*** or ***g729at8*** if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card. Also, *voiceEncoding* can only be set to ***g728at16*** or ***g729at8*** if the corresponding feature exists in the *featureList* of the *Sw Lpt*.

The negotiated ingress ***voice*** encoding is available in *negotiatedIgEncoding.*

voiceEncoding must have the same value at both ends of a *VoiceService*. If *voiceEncoding* does not have the same value at both ends of a *VoiceService*, the *VoiceService* will be out of service. In this case, *serviceFailureReason* is ***mismatchedVoiceEncoding***.

Mib	Voice
Values	g711G726 g728at16 g729at8
Default	g711G726

ATTRIBUTE Vs Framer modemFaxEncoding (faxEncoding)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies how ingress modemFax and fax traffic are encoded. Voice traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ModemFax traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. Fax traffic is all traffic after a fax preamble but before speech or call release. If *modemFaxEncoding* is ***useVoiceEncoding***, all ingress traffic is treated like voice traffic and encoded according to *voiceEncoding*. If *voiceEncoding* is ***g728at16*** or ***g729at8***, modem and fax calls are not supported.

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If *modemFaxEncoding* is ***g711G726***, ingress modemFax traffic and fax traffic are both encoded using pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726. The actual encoding and rates performed depends on congestion in the network and the minimum and maximum ingress ***modemFax*** rates in *negotiatedIgRates*.

If *modemFaxEncoding* is ***faxRelayG711G726***, ingress modemFax traffic is encoding using G.711 or G.726, exactly as it is if *modemFaxEncoding* is ***g711G726***. Until a fax preamble is detected, the rate may fluctuate between the minimum and maximum ***modemFax*** rates in *negotiatedIgRates* due to network congestion, exactly as it does if *modemFaxEncoding* is ***g711G726***. If a fax preamble is detected, all subsequent traffic during a call is demodulated and sent through the network as cells at the base rate of the sending machine. Supported demodulation methods are V.29 (up to 9.6 kbit/s) and V.27 (up to 4.8 kbit/s). The modulation and demodulation of fax traffic is called “fax relay”.

If *modemFaxEncoding* is ***faxRelayOnly***, “fax relay” is entered immediately upon 2100 Hz tone detection and modemFax traffic is treated like fax traffic. If *modemFaxEncoding* is ***faxRelayOnly***, modem calls are not supported.

The negotiated ingress ***modemFax*** and ***fax*** encodings are available in *negotiatedIgEncoding*.

modemFaxEncoding cannot be set to ***faxRelayG711G726*** or ***faxRelayOnly*** if this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card. The ***faxRelay*** feature is required to set *modemFaxEncoding* to ***faxRelayG711G726*** or ***faxRelayOnly***.

modemFaxEncoding must have the same value at both ends of a *VoiceService*. If *modemFaxEncoding* does not have the same value at both ends of a *VoiceService*, the *VoiceService* will be out of service. In this case, *serviceFailureReason* is ***mismatchedModemFaxEncoding***.

Mib	Voice
Values	g711G726 faxRelayOnly faxRelayG711G726 useVoiceEncoding
Default	g711G726

ATTRIBUTE Vs Framer tandemPassThrough (tpt)

Access	Read: Passive Write: Service
Criticality	Process

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Description	This attribute specifies whether tandem pass through is desired. If *tandemPassThrough* is ***enabled***, tandem pass through is used if possible. If *tandemPassThrough* is ***disabled***, tandem pass through is not used under any circumstances. The negotiated tandem pass through is available in *negotiatedTandemPassThrough.* The actual state of tandem pass through is available in *tptStatus*. *tandemPassThrough* can be set to ***enabled*** only if the *tandemPassThrough* feature exists in the *featureList* of the *Sw Lpt.*
Mib	Voice
Values	enabled disabled
Default	disabled

ATTRIBUTE Vs Framer insertedOutputDelay

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the amount of added output delay used to compensate for cross network delay variations. It applies to voice, modem and fax traffic. It is required to add output delay so that the statistical variation in the transit time of cells crossing the network does not cause gaps in speech. Backbone networks where high priority traffic consumes a high percentage of trunk bandwidth will require a higher *insertedOutputDelay* to compensate for the greater cell delay variation (CDV). *insertedOutputDelay* must be ***default*** if this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card. On all other cards, *insertedOutputDelay* can be set to any value. On these cards, ***default*** is equivalent to ***22***.
Mib	Voice
Values	default 5 15 22 30 35 40 45 50 75 100

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	125 150
Units	msec
Default	default

ATTRIBUTE Vs Framer faxIdleSuppressionG711G726

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether ingress fax idle suppression is desired during G.711 and G.726 fax traffic. It applies only if *modemFaxEncoding* is ***g711G726*** or ***faxRelayG711G726.*** The negotiated ingress G.711/G.726 fax idle suppression is available in *negotiatedIgFisG711G726.* If the ***silenceSuppressor*** or ***vtds*** feature is present, *faxIdleSuppressionG711G726* defaults to ***on***. Otherwise, *faxIdleSuppressionG711G726* defaults to ***off***.
Mib	Voice
Values	off on
Default	No default

ATTRIBUTE Vs Framer endOfCallPattern

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the pattern that indicates the end of CCS and CAS calls. The pattern is specified as a hexadecimal byte. If this pattern is detected for one second, the echo canceler is reset and prepares itself to start a new call. If 1000 consecutive samples consisting of the pattern defined by the *endOfCallPattern* attribute are detected, during a modem or fax call, this *VoiceService* assumes the call is over and switches to the encoding specified in *voiceEncoding*. When there is no call, this pattern replaces the PCM data that would normally be sent to the link. *endOfCallPattern* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** card. To determine the correct setting of *endOfCallPattern*, view the operational attribute *recentIngressLineSamples* while no calls are up. If *endOfCallPattern* is ***standard***, the actual pattern used depends on the

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card this voice service is running on. If this voice service is running on a ***1pDs1Mvp***, ***1pDS1Mvpe***, ***1pTTC2mMvp*** or ***1pTTC2mMvpe*** card, the actual pattern used is ***7f***. If this voice service is running on a ***1pE1Mvp*** or ***1pE1Mvpe*** card, the actual pattern used is ***54***.

The default value for *endOfCallPattern* is ***standard***.

Mib: Voice

Values:
standard
01
02
03
04
05
06
07
08
09
0a
0b
0c
0d
0e
0f
10
11
12
13
14
15
16
17
18
19
1a
1b
1c
1d
1e
1f
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2a
2b
2c
2d
2e
2f
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3b
3c
3d
3e
3f
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4a
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4c
4d
4e
4f
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5a
5b
5c

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5d
5e
5f
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6c
6d
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e4
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e9
ea
eb
ec
ed
ee
ef
f0
f1
f2
f3
f4
f5

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f6
f7
f8
f9
fa
fb
fc
fd
fe
ff

Default standard

ATTRIBUTE Vs Framer ingressAudioGain

Access Read: Passive
Write: Service

Criticality Process

Description This attribute specifies the gain in dB that is applied to data coming from outside the network before it is transferred across the network. It applies to voice, modem and fax traffic. For example, ingress gain is applied to audio data coming from a PBX. If *ingressAudioGain* is negative, a loss is applied.

If this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card, *ingressAudioGain* must be set to ***0***. If this voice service is running on any other *cardtype*, *ingressAudioGain* can be set to any integral value from ***-12*** to ***+12***.

ingressAudioGain and *egressAudioGain* are used in loss planning, which is the configuration of the devices in the network to ensure that the signal level from any point in the network to any other point is correct.

Mib Voice

Values Signed (-12..12)

Units dB

Default 0

ATTRIBUTE Vs Framer egressAudioGain

Access Read and write

Criticality Process

Description This attribute specifies the gain in dB that is applied to data before it leaves the network. It applies to voice, modem and fax traffic. For example, egress gain is applied to audio data going to a PBX. If *egressAudioGain* is negative, a loss is applied.

If this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV***

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card, *egressAudioGain* can be set to ***-6***, ***-4***, ***-2***, ***0***, ***2***, ***4*** or ***6***. If this voice service is running on any other *cardType*, *egressAudioGain* can be set to any integral value from ***-12*** to ***+12***.

ingressAudioGain and *egressAudioGain* are used in loss planning, which is the configuration of the devices in the network to ensure that the signal level from any point in the network to any other point is correct.

Mib	Voice
Values	-12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12
Units	dB
Default	0

ATTRIBUTE Vs Framer comfortNoiseCap

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum level at which comfort noise is generated. The comfort noise is limited by *comfortNoiseCap* before *egressAudioGain* is applied. The default value of ***-40*** dBm0 equates to the maximum level of comfort noise available and effectively disables the *comfortNoiseCap*.
Mib	Voice

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Values	Signed (-78; -65; -60; -54; -52; -50; -48; -46; -44; -42; -40)
Units	dBm0
Default	-40

ATTRIBUTE Vs Framer echoTailDelay

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum echo canceler tail delay coverage. It should be selected higher than the summation of the round trip delay of echo and hybrid response time. A ***32*** msec setting is good for a radius of 2700 km, assuming that the signal is going through 4 exchanges and the hybrid response time is 6 msec. A ***64*** msec setting offers even greater coverage (more distance or more switches), with comparable convergence time. The recommended setting is ***64*** msec. This attribute is not used if this VoiceService is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp,*** or ***1pTTC2mMvp*** cards.
Mib	Voice
Values	Decimal (32; 64)
Units	msec
Default	64

ATTRIBUTE Vs Framer echoReturnLoss

Access	Read and write
Criticality	Process
Description	This attribute specifies the echo return loss parameter of the echo canceler. If the line quality is poor, in terms of echo, selecting a higher value may allow the echo canceler to perform better. A side effect is that the voice level is attenuated by the same amount, which may not always be acceptable. This attribute is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp***, or ***1pTTC2mMvp*** card.
Mib	Voice
Values	Decimal (0; 3; 6)
Units	dB
Default	6

ATTRIBUTE Vs Framer dtmfRegeneration (detGen)

Access	Read: Passive Write: Service
Criticality	Process

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Description	This attribute specifies the DTMF regeneration parameter used during negotiation with the remote end across the subnet. If *dtmfRegeneration* is ***on***, it is desired that DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is desired to be generated before being sent to the link. If *dtmfRegeneration* is ***off***, DTMF tones are transported transparently. DTMF regeneration is not supported on ***1pDS1V***, ***1pE1V***, and ***J2MV*** cards. *dtmfRegeneration* must be ***off*** if this *VoiceService* is running on one of these cards. The negotiated DTMF regeneration is available in *negotiatedDtmfRegeneration*.
Mib	Voice
Values	off on
Default	off

ATTRIBUTE Vs Framer speechHangoverTime

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of speech before silence suppression starts. It applies only to voice traffic. It is not used unless *negotiatedIgSilenceSuppression* is ***on***, ***congested*** *or* ***slowAndCongested***. Higher values of *speechHangoverTime* reduce undesirable clipping but increase bandwidth usage. *speechHangoverTime* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card.
Mib	Voice
Values	Signed (10..500)
Units	msec
Default	150

ATTRIBUTE Vs Framer faxHangoverTimeG711G726

Access	Read: Passive Write: Service
Criticality	Process

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Description	This attribute specifies the time after the end of fax traffic before ingress G.711/G.726 fax idle suppression starts. It applies only if *modemFaxEncoding* is ***g711G726*** or ***faxRelayG711G726*** and *negotiatedIgFisG711G726* is ***on***. *faxHangoverTimeG711G726* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** card.
Mib	Voice
Values	Signed (300..20000)
Units	msec
Default	1000

ATTRIBUTE Vs Framer modemFaxSpeechDiscrim (fsd)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether this *VoiceService* differentiates modemFax traffic and speech. If *modemFaxSpeechDiscrim* is ***on*** and a false 2100 Hz tone is detected, this *VoiceService* reverts to speech mode when speech is detected. *modemFaxSpeechDiscrim* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** card.
Mib	Voice
Values	on off
Default	on

ATTRIBUTE Vs Framer v17EncodedAsG711G726

Access	Read and write
Criticality	Process
Description	This attribute specifies the desired negotiation between this *VoiceService* and V.17 fax machines when *modemFaxEncoding* is ***faxRelayG711G726***. This attribute is not used unless *modemFaxEncoding* is ***faxRelayG711G726***. The actual negotiation between this *VoiceService* and V.17 fax machines is available in *negotiatedV17AsG711G726*. If *v17EncodedAsG711G726* is ***no,*** it is desired that V.17 fax machines be instructed to use V.29 so that V.29 fax traffic sent by fax machines can be demodulated and encoded using fax relay.

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If *v17EncodedAsG711G726* is ***yes***, it is desired that V.17 fax machines be permitted to use V.17 so that V.17 fax traffic sent by fax machines can be encoded using G.711 or G.726. The actual encoding performed depends on network congestion and the negotiated ingress ***modemFax*** rates, available in *negotiatedIgRates*.

Mib: Voice

Values:
no
yes

Default: no

ATTRIBUTE Vs Framer ecanBypassMode

Access: Read and write

Criticality: Process

Description: This attribute specifies when version 2 internal echo cancelers are placed in bypass mode on this *VoiceService*. This attribute only applies if *echoCancellation* is ***on***. If *ecanBypassMode* is ***g165***, the internal echo canceler is placed in bypass mode as per ITU-T G.165. If *ecanBypassMode* is ***g164***, the internal echo canceler is placed in bypass mode as per ITU-T G.164. If *ecanBypassMode* is ***never***, the internal echo canceler is never placed in bypass mode. This mode should only be used for debugging.

This attribute does not apply to ***1pE1V***, ***1pDS1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp***, or ***1pTTC2mMvp*** cards.

Mib: Voice

Values:
g164
g165
never

Default: g165

ATTRIBUTE Vs Framer maxFaxRelayRate

Access:
Read: Passive
Write: Service

Criticality: Process

Description: This attribute specifies the maximum desired fax relay rate. This attribute only applies if *modemFaxEncoding* is ***faxRelayOnly*** or ***faxRelayG711G726***. The maximum fax relay rate is negotiated and depends on the setting of *maxFaxRelayRate* and the fax relay capabilities on the origination side and destination side. If the negotiated ***fax*** encoding in *negotiatedIgEncoding* is ***relay***, the negotiated maximum fax relay rate is available in the ***fax*** row of *negotiatedIgRates*.

Mib: Voice

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Values	Decimal (2.4; 4.8; 7.2; 9.6; 12.0; 14.4)
Units	kbit/s
Default	14.4

GROUP Vs Framer SignalOptions (Signal)

Properties	Provisioned
Description	This group contains attributes which define the means for transporting channel associated signaling through the network.
Mib	Voice

ATTRIBUTE Vs Framer transmitBusyYellow

Access	Read and write
Criticality	Process
Description	When this attribute is set to ***yes*** and the DS1 or E1 line is set to Channel Associated Signaling (CAS) mode, a “busy-out” signaling condition is transmitted onto the voice timeslot associated with this Framer when its path across the network is down. The busy-out code transmitted is given by the *seizeCode* attribute. If *transmitBusyYellow* is set to ***yes*** on a CAS-based interface, *seizeCode* must be set. When *transmitBusyYellow* is set to ***yes*** and the DS1 or E1 line is set to Common Channel Signaling (CCS) mode, a yellow alarm condition is transmitted onto the DS1/E1 line when the path across the network associated with this Framer is down. Note that in CCS mode, a yellow alarm condition is transmitted when the path is down for **any** of the Framers with this attribute set to ***yes***.
Mib	Voice
Values	no yes
Default	no

ATTRIBUTE Vs Framer invertBits

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the ABCD bits are inverted before being output onto the link.
Mib	Voice
Values	no yes
Default	no

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ATTRIBUTE Vs Framer signalBits

Access	Read and write
Criticality	Process
Description	This attribute identifies the combination of ABCD bits used for channel associated signaling. If *casSignalling* is ***transparent***, *signalBits* must have the same value at both ends of a *Vs*. If *casSignalling* is ***transparent*** and *signalBits* does not have the same value at both ends of a *Vs*, the *Vs* will be out of service. In this case, *Vs serviceFailureReason* is ***mismatchedSignalBits***.
Mib	Voice
Values	A AB ABCD
Default	A

ATTRIBUTE Vs Framer transmitCasYellow

Access	Read and write
Criticality	Process
Description	When the associated DS1 or E1 line is operating in CCS mode, this attribute is not applicable, and must be set to ***no***. Normally, all the *VoiceService Framer*s associated with the same DS1 or E1 line should have the same value for this attribute. When the value is ***yes*** on all *VoiceService Framer*s, a yellow alarm will be asserted on the port whenever loss of subnet connectivity occurs for all these *VoiceService*s. This will prevent the external equipment from using this port for call attempts. If this attribute is set to ***no*** for all *VoiceService Framer*s associated with a DS1 or E1 line, a yellow alarm will never be asserted on the line for subnet connectivity reasons, agreeing with DS1/E1 port standards. If some *VoiceService Framer*s associated with the same DS1 or E1 line have this value set to ***yes***, and some ***no***, a yellow alarm will be asserted on the line only if there are subnet connectivity problems for all the *VoiceService Framer*s with the attribute *transmitCasYellow* set to ***yes***. The *VoiceService Framer*s with this attribute set to ***no*** will have no effect on whether a yellow alarm should be asserted on the line.
Mib	Voice
Values	no yes
Default	no

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ATTRIBUTE Vs Framer casSignalling

Access	Read and write
Criticality	Process
Description	This attribute specifies how channel associated signaling information is transported through the network. ***none*** specifies that channel associated signaling information is not transported through the network. ***transparent*** specifies signaling information is transported transparently through the network. ***transparent*** can be used when both sides are using equivalent signaling tables. ***interpret*** specifies signaling information is interpreted for idle and seize codes. ***interpret*** can be used when both sides are not using equivalent signaling tables but only require two unique codes (seize and idle) for signaling. Using a value of ***interpret*** requires correct *idleCode* and *seizeCode* attributes. ***interpret*** mode must be used if *silenceSuppression* is set to ***casIdleCode***.
Mib	Voice
Values	none transparent interpret
Default	none

ATTRIBUTE Vs Framer idleCode

Access	Read and write
Criticality	Process
Description	This attribute specifies the ABCD idle line signaling code. This attribute must be set correctly when *casSignalling* is ***interpret***.
Mib	Voice
Vector of	Decimal (0..1)
Index	A B C D
Default	(0, 0, 0, 0)

ATTRIBUTE Vs Framer seizeCode

Access	Read and write
Criticality	Process
Description	This attribute specifies the ABCD seized line signaling code. This attribute must be set correctly when *casSignalling* is ***interpret***.

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Mib	Voice
Vector of	Decimal (0..1)
Index	A B C D
Default	(1, 1, 1, 1)

GROUP Vs Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Voice

ATTRIBUTE Vs Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Voice
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vs Framer operationalState (osiOper)

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Voice
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vs Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Voice
Values	idle active (activ) busy
Default	idle

GROUP Vs Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	Voice

ATTRIBUTE Vs Framer totalCells

Access	Read only
Description	This attribute counts total cells received from the interface. Each cell contains 44 bytes of data from the DS0 channel. Since a DS0 provides data at 64 kbit/s, each cell contains 5.5 ms of audio data. This data flow is measured before compression is performed on the

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channel.
This counter wraps to zero after reaching its maximum value.

Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer audioCells

Access	Read only
Description	This attribute counts total cells containing audio data received from the interface. Audio data includes cells containing voice as well as modem audio but not silence. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer silenceCells

Access	Read only
Description	This attribute counts total cells containing silence (speech or modem/fax) data received from the interface which was not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the operation of the silence suppression feature (refer to the *silenceSuppression* attribute) or for CAS channels when the ABCD signaling bits go idle. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer lrcErrors

Access	Read only
Description	This attribute counts the number of frames with LRC errors that are received from the network.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Vs Framer frmLostInNetwork

Access	Read only
Description	This attribute counts the number of frames which the service knows it did not receive from the network although they were sent in to the network from the remote end.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer frmUnderRuns

Access	Read only
Description	This attribute counts the number of times that a frame was needed but was not available because it had been delayed too long in the network. This error may occur repeatedly if the interface clocks at the two access points to the network are operating at different rates.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer frmDumped

Access	Read only
Description	This attribute counts the number of frames which have been dumped because the output queue grew too large. This can occur if the clock rate on the incoming interface is faster than the clock rate on the outgoing interface and there are no silence periods to absorb the difference or when a compression rate change occurs. This count wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer faxRelayCells

Access	Read only
Description	This attribute counts total fax relay cells sent to the network.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

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ATTRIBUTE Vs Framer modemFaxCells

Access	Read only
Description	This attribute counts total cells containing modem or fax data received from the interface. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer faxIdleCells

Access	Read only
Description	This attribute counts total cells containing silent modem or fax data received from the interface which was not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the silence Suppression feature (refer to the *silenceSuppression* attribute) or for CAS channels when the ABCD signaling bits go idle. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer frmToNetwork

Access	Read only
Description	This attribute counts the number of frames sent to the network at each encoding rate. Fax relay cells are not included.
Mib	Voice
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

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GROUP Vs Framer Negotiation (Neg)

Properties	Operational
Description	This group contains attributes indicating the results of end to end negotiation.
Mib	Voice

ATTRIBUTE Vs Framer negotiatedIgSilenceSuppression (nSilenceSuppression)

Access	Read only
Description	This attribute indicates the result of negotiating ingress silence suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *silenceSuppression*. *negotiatedIgSilenceSuppression* can be different on either side of a *VoiceService*. If *negotiatedIgSilenceSuppression* is ***off***, ingress silence suppression is never performed. If *negotiatedIgSilenceSuppression* is ***on***, ingress silence suppression is always performed. If *negotiatedIgSilenceSuppression* is ***congested***, ingress silence suppression is performed only when the network is congested. If *negotiatedIgSilenceSuppression* is ***slow***, ingress silence suppression begins after 20 seconds without any speech or audio being detected. If *negotiatedIgSilenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are applied. If *negotiatedIgSilenceSuppression* is ***casIdleCode***, ingress silence suppression is only performed when the *idleCode* is active for 20 to 40 seconds. Both *transportSignalling* and *interpretSignalling* must be set to ***yes*** if *silenceSuppression* is set to ***casIdleCode***.
Mib	Voice
Values	off on congested slow slowAndCongested casIdleCode
Default	No default

ATTRIBUTE Vs Framer negotiatedIgFisG711G726 (nFisG711G726)

Access	Read only
Description	This attribute indicates the result of negotiating ingress G.711/G.726 fax idle suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *faxIdleSuppressionG711G726*.

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The value of *negotiatedIgFisG711G726* can be different on either side of the connection.

Mib — Voice

Values — off
on

Default — No default

ATTRIBUTE Vs Framer negotiatedDtmfRegeneration (nDtmfRegeneration)

Access — Read only

Description — This attribute indicates the result of negotiating DTMF regeneration with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *dtmfRegeneration.*

If *negotiatedDtmfRegeneration* is ***on***, DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is generated before being sent to the link.

If *negotiatedDtmfRegeneration* is ***off***, DTMF tones are transported transparently.

Mib — Voice

Values — off
on

Default — No default

ATTRIBUTE Vs Framer negotiatedV17AsG711G726 (nV17AsG711G726)

Access — Read only

Description — This attribute indicates how this *VoiceService* negotiates with V.17 fax machines, as determined by negotiation with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *v17EncodedAsG711G726*. This attribute is irrelevant unless *modemFaxEncoding* is ***faxRelayG711G726***.

If *negotiatedV17AsG711G726* is ***no,*** V.17 fax machines are instructed to use V.29, and V.29 fax traffic sent by fax machines is demodulated and encoded using fax relay.

If *negotiatedV17AsG711G726* is ***yes***, V.17 fax machines are permitted to use V.17 and V.17 fax traffic sent by fax machines is encoded using G.711 or G.726, at the rates given in *negotiatedIgRates*.

Mib — Voice

Values — yes
no

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Default	No default

ATTRIBUTE Vs Framer negotiatedTandemPassThrough (nTpt)

Access	Read only
Description	This attribute indicates the result of negotiating tandem pass through with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *tandemPassThrough*.
Mib	Voice
Values	enabled disabled
Default	No default

ATTRIBUTE Vs Framer negotiatedIgEncoding (nEncoding)

Access	Read only
Description	This attribute indicates the results of negotiating ingress audio call encodings for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *voiceEncoding* and *modemFaxEncoding*. ***voice*** traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ***modemFax*** traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. ***fax*** traffic is all traffic after a fax preamble but before speech or call release. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is the negotiated encoding. ***g726*** indicates that Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 is the negotiated encoding. ***g711G726*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 and Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 are both negotiated encodings. If *negotiatedIgEncoding* is ***g711G726***, the actual encoding performed can be either G.711 or G.726, depending on network congestion. ***g728*** indicates that Low Delay Coded Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.728 is the negotiated encoding. ***g729*** indicates that Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.729 is the negotiated encoding. ***v29V27Relay*** indicates that fax relay is performed using ITU-T V.29 or ITU-T V.27. ***v17V29V27Relay*** indicates that fax relay using ITU-T V.17, ITU-T V.29, or ITU-T V.27 is the negotiated encoding. If all negotiated encodings are ***none***, the negotiation of audio call encodings is not complete.

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Mib	Voice
Vector of	g711 g726 g711G726 g728 g729 v29V27Relay v17V29V27Relay none
Index	voice modemFax fax
Default	No default

ATTRIBUTE Vs Framer negotiatedIgRates (nRates)

Access	Read only
Description	This attribute indicates the results of negotiating ingress minimum and maximum rates for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *maxVoiceG711G726Rate, minVoiceG711G726Rate, maxModemFaxG711G726Rate* and *minModemFaxG711G726Rate*. *negotiatedIgRates* can be different on either side of a *VoiceService*.
Mib	Voice
Array of	8.0 16.0 24.0 32.0 64.0 0.0 0.3 1.2 2.4 4.8 7.2 9.6 12.0 14.4

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Units	kbit/s	
Row	traffic modemFax fax]	[voice
Column	rate max]	[min
Default	No default	

GROUP Vs Framer Operational (Oper)

Properties	Operational
Description	This group contains the operational data for a *Vs Framer*.
Mib	Voice

ATTRIBUTE Vs Framer currentEncoding

Access	Read only
Description	This attribute indicates the encoding currently being performed. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is being performed. ***g726*** indicates that adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 is being performed. ***g728*** indicates that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 is being performed. ***g729*** indicates that the Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 is being performed. ***v27*** indicates that the algorithm defined by ITU-T V.27 is being performed. ***v29*** indicates that the algorithm defined by ITU-T V.29 is being performed.
Mib	Voice
Values	none g729 g728 g723 g726 g711 v22 v22bis faxRelay v27 v29 v17
Default	No default

ATTRIBUTE Vs Framer currentRate

Access	Read only

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Description	This attribute indicates the current encoding rate for frames being sent to the network.
Mib	Voice
Values	0 0.3 1.2 2.4 4.8 5.3 6.3 7.2 8.0 9.6 12.0 14.4 16.0 24.0 32.0 64.0
Units	kbit/s
Default	No default

ATTRIBUTE Vs Framer tptStatus

Access	Read only
Description	This attribute indicates the current status of the tandem pass through algorithm. If *tptStatus* is ***operating,*** the tandem pass through algorithm is cutting through a voice switch. If *tptStatus* is ***monitoring***, *negotiatedTandemPassThrough* is ***enabled***, but the tandem pass through algorithm is not cutting through a voice switch. If *tptStatus* is ***disabled***, *negotiatedTandemPassThrough* is ***disabled***.
Mib	Voice
Values	operating monitoring disabled
Default	No default

ATTRIBUTE Vs Framer recentIngressLineSamples

Access	Read only
Description	This attribute indicates two recent ingress line samples, represented as four hex digits. The first two hex digits give one sample. The last two hex digits give the other sample. If no call is up on this voice service's channel, each sample indicates the idle pattern sent by the adjoining PBX. Therefore, the two samples should be the same if no call is up on this voice service's channel. These samples should also be consistent each

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time *recentIngressLineSamples* is displayed, as long as no call is up on this voice service's channel. It indicates a fault on the PBX if the samples are not consistent when no call is up on this voice service's channel.

If no call is up on this *VoiceService*'s channel and the two samples are the same, each sample gives the correct setting of the provisionable attribute *endOfCallPattern*. Note that *endOfCallPattern* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** card. On these cards, *recentIngressLineSamples* is always ***0000***.

Mib — Voice

Values — String (2, Hex)

Default — No default

COLLECTED STATS VoiceService Framer

Description — The statistics record generated by the VoiceService Framer component.

ATTRIBUTE Vs Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Vs Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Vs Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Vs Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Vs Framer rxTotalLinkUtil

Description — This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values — Decimal (0..100)

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COMPONENT Vs Framer VfpDebug

Scope	Application
Description	*Vs/n Framer VfpDebug* This component contains debugging attributes for a voice service running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** functional processor.
Mib	Voice
Common Verbs	Help List Display

COMPONENT Vs Framer MvpDebug

Scope	Application
Description	*Vs/n Framer MvpDebug* This component contains debugging attributes on a voice service's framer running on a ***1pE1Mvp***, ***1pDS1Mvp***, ***1pTTC2mMvp, 1pE1Mvpe***, ***1pDS1Mvpe*** or ***1pTTC2mMvpe*** functional processor.
Mib	Voice
Common Verbs	Help List Display

COMPONENT Vs Framer PcmCapture (PcmCapture)

Scope	Application
Description	*Vs/n Framer PcmCapture* This component contains attributes for PCM data capture.
Mib	Voice
Common Verbs	Help List Display

COMPONENT Vs PermanentLogicalConnection (Plc)

Groups	GROUP Vs Plc Provisioning (Prov)
Scope	Application

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Description	*Vs/n PLC* This is the description of the PLC Component for the voice service.
Mib	Voice
Common Verbs	Help List Display

GROUP Vs Plc Provisioning (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for a permanent logical connection. Note that all of the attributes are valid and provisionable on both ends of a connection. However with the exception of *remoteName*, all operational attributes are derived from the originating end provisioning, which may be either end unless *remoteName* is not provisioned on one end.
Mib	Voice

ATTRIBUTE Vs Plc remoteName (rName)

Access	Read and write
Criticality	Process
Description	This attribute is the *PLC*'s remote end point's address in the format of a component name. The syntax of a component is: "em/node type/instance". For an alternative representation of end point's addresses, see *addressToCall* and l*ocalAddress PLC* attributes. When using component name representation, end points are identified using a node name and a service name. As an example, the end point component for a third voice service on node MoonBase is: "*EM/MoonBase VS/3*". If the *remoteName* is provisioned, it must match the name of the remote end or the connection will not be established even if the remote end is provisioned correctly. If no *remoteName* is provisioned, then this *LC* will accept connections from any other remote *LC* and it will not originate calls. Connections establish faster and are unique if both ends are provisioned with *remoteName*. *RemoteName* should be used when the remote end of the connection resides within the same topology region. If it resides in a different topology region, then *addressToCall* and *localAddress PLC* attributes should be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*. These strings are case insensitive, but the complete component name must be input.
Mib	Voice
Values	String (0..40, ASCII)

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Default	""

ATTRIBUTE Vs Plc setupPriority (spri)

Access	Read and write
Criticality	Process
Description	This attribute gives the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	Voice
Values	Decimal (0..4)
Default	2

ATTRIBUTE Vs Plc holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute gives the priority that a path holds once it is established. Zero is the highest priority and four is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority*.
Mib	Voice
Values	Decimal (0..4)
Default	2

ATTRIBUTE Vs Plc requiredTxBandwidth (tbw)

Access	Read and write
Criticality	Process
Description	This attribute gives the bandwidth (in bits per second) reserved by a path on each of the trunks of its route.This attribute represents the bandwidth for traffic outgoing to the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when

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	the values do not correspond, the originating end of the connection determines the value.
Mib	Voice
Values	Decimal (0..2048000)
Units	bit/s
Default	32000

ATTRIBUTE Vs Plc requiredRxBandwidth (rbw)

Access	Read and write
Criticality	Process
Description	This attribute gives the bandwidth (in bits per second) reserved by a path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value.
Mib	Voice
Values	Decimal (0..2048000)
Units	bit/s
Default	32000

ATTRIBUTE Vs Plc requiredTrafficType (rttyp)

Access	Read and write
Criticality	Process
Description	This attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.
Mib	Voice

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Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	voice

ATTRIBUTE Vs Plc permittedTrunkTypes (pttyp)

Access	Read and write
Criticality	Process
Description	This attribute lists up to eight(8) types of trunk that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six(6) remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	Voice
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Vs Plc requiredSecurity (rsec)

Access	Read and write
Criticality	Process
Description	This attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.

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Mib	Voice
Values	Decimal (0..7)
Default	4

ATTRIBUTE Vs Plc requiredCustomerParm (rcparm)

Access	Read and write
Criticality	Process
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route. Its value, a number from zero to seven, is chosen by network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	Voice
Values	Decimal (0..7)
Default	4

ATTRIBUTE Vs Plc pathAttributeToMinimize (pamin)

Access	Read and write
Criticality	Process
Description	This attribute indicates whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metric for all trunks included in the route.
Mib	Voice
Values	cost delay
Default	cost

ATTRIBUTE Vs Plc maximumAcceptableCost (maxCost)

Access	Read and write
Criticality	Process
Description	This attribute indicates an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is

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being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done for any minimization criterion. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.

Mib	Voice
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Vs Plc maximumAcceptableDelay (maxDelay)

Access	Read and write
Criticality	Process
Description	This attribute indicates an upper bound on the delay of a route, which is the sum of the delay of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512-byte packet. Remember, that the trunk during its staging measures a *measuredRoundTripDelay*. This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512-byte packet is used to perform the measurement. If for any trunk the half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay*.
Mib	Voice
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Vs Plc emissionPriority (epri)

Access	Read and write
Criticality	Process
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. *EmissionPriority* of Zero(0) indicates the highest emission priority, while two (2) indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	Voice

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Values	Decimal (0..2)
Default	0

ATTRIBUTE Vs Plc discardPriority (dpri)

Access	Read and write
Criticality	Process
Description	This attribute indicates the importance of the packets on the path. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically) are discarded after packets with a higher *discardPriority* (numerically).
Mib	Voice
Values	Decimal (1..3)
Default	1

ATTRIBUTE Vs Plc pathType (pType)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the path for this PLC is determined automatically or by static provisioning. The default (***normal***) is to automatically choose a route with Route Selection. ***Normal*** *pathTypes* require less provisioning and can dynamically handle path failures. The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	Voice
Values	normal manual forced
Default	normal

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ATTRIBUTE Vs Plc pathFailureAction (pfa)

Access	Read and write
Criticality	Process
Description	This attribute is used to specify whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.
Mib	Voice
Values	reRoutePath disconnectConnection
Default	reRoutePath

ATTRIBUTE Vs Plc bumpPreference (bpref)

Access	Read and write
Criticality	Process
Description	This attribute controls when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *holdingPriority* in order to acquire its bandwidth and be established. By default, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. A connection may be set to always bump in order to find the best route it may have.
Mib	Voice
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Vs Plc optimization (opt)

Access	Read and write
Criticality	Process

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Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	Voice
Values	disabled enabled
Default	enabled

ATTRIBUTE Vs Plc addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute is the *PLC*'s remote end point's address in the format of a NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. For an alternative representation of end point's addresses, see *remoteName* attribute. If the *addressToCall* is provisioned, it must match *localAddress* provisioned on the remote end or the connection will not be established. Connections establish faster and are unique if both ends are provisioned with *addressToCall*. *AddressToCall* must be used when the remote end of the connection resides in different topology region. If it resides in the same topology region, then *remoteName* may be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*.
Mib	Voice
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Vs Plc localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute is the *PLC*'s end point address in the format of an NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. *LocalAddress* must share a prefix with MOD nodePrefix or one of MOD alternatePorsPrefixes for this node, otherwise PORS will not be able to route calls to this service. *LocalAddress* is used in conjunction with *addressToCall*. That is, the end responsible for originating calls must have *addressToCall* provisioned, while the end responsible for terminating calls must have *localAddress* provisioned. In such a case, *addressToCall* on the originating end must match exactly the *localAddress* of the terminating end. Note that both ends may be

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	originating and terminating at the same time. That is, both ends may have *addressToCall* and *localAddress* provisioned as long as *addressToCall* and *localAddress* on different ends are identical.
Mib	Voice
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Vs Plc maximumAcceptableGatewayCost (maxGateCost)

Access	Read and write
Criticality	Process
Description	This attribute indicates an upper bound on the gateway cost metric of a route, which is the sum of the gateway cost metrics of all gateway links on the route. It has the same semantics as the *maximumAcceptableCost* except that gateway cost metrics are used instead of trunk cost metrics. Gateway cost metrics are provisioned under *Trunk Address* component of a gateway link specifying a gateway costs of reaching an address through the link.
Mib	Voice
Values	Decimal (0..65535)
Default	2048

ATTRIBUTE Vs Plc manualPath (mpath)

Access	Read and write
Criticality	Process
Description	This attribute is optional and specifies the sequence of trunks to be used as the route for the path, thus bypassing PORS' automatic route selection. If the path fails the validation, no other path can be selected[1]. This attribute should only be used in special cases since the route selection algorithm is able to find and maintain the best routes. A related path attribute, the *pathType*, determines if this route will be used as a manual or forced path type. As an example, the trunk component name for the third trunk on node MoonBase is "*EM/MoonBase Trk/3*". Note that only the first end of the trunk that the packet would encounter is provisioned. These strings are case insensitive but the complete component name must be input. Note 1: the trunk designation must be a 3-letter form, e.g., 'trk'. Note 2: only the outbound trunks component names are used to provision the ***manualPath***. Note 3: It is recommended to have two independent routes specified for a manual path by specifying a different ***manualPath*** (non-symmetric) for each end. In this case, there is no way to select which route will be used

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(first up wins) but if one path is torn down due to a failure then the other ***manualPath*** may be used to reroute the path.

Mib	Voice
Vector of	String (0..40, ASCII)
Index	Decimal (0..9)
Default	([10] "")

COMPONENT Vs LogicalConnection (LCo)

Groups	GROUP Vs LCo PathData GROUP Vs LCo Statistics (Stats)
Scope	Application
Description	*...Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	Voice
Common Verbs	Help List Display

VERB RERoute Vs LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Vs LCo PathData

Properties	Operational

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Description	This group contains all operational attributes for the path oriented LCo.
Mib	Voice

ATTRIBUTE Vs LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	Voice
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE Vs LCo overrideRemoteName (orn)

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	Voice
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Vs LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	Voice

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Values	calling called
Default	No default

ATTRIBUTE Vs LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	Voice
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vs LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	Voice
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Vs LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value

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	of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	Voice
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Vs LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	Voice
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vs LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	Voice
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vs LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	Voice
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

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ATTRIBUTE Vs LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	Voice
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Vs LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType,* will be candidates for this connection.
Mib	Voice
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Vs LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of

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	the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	Voice
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Vs LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity*.
Mib	Voice
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vs LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	Voice
Values	Decimal (0..7)
Default	No default

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ATTRIBUTE Vs LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority*. *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	Voice
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Vs LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority*. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	Voice
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Vs LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.

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Mib	Voice
Values	normal manual forced
Default	No default

ATTRIBUTE Vs LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	Voice
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vs LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	Voice
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vs LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.

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Mib	Voice
Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE Vs LCo lastTearDownReason

Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up. ***normalShutDown*** - This path has gone down due to normal call termination. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction. ***insufficientRxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction. ***trunkFailure***- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute. ***trunkCardFailure***- A trunk FP card has failed along the path. ***accessCardFailure***- The FP on which the peer access service was running has failed. ***operatorForced***- The path has terminated due to the operator locking a trunk along the path. ***lostLcnClash***- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when

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the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib — Voice

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound

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farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default: none

ATTRIBUTE Vs LCo pathFailureAction

Access: Read only

Description: This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.

All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends

Mib: Voice

Values:
reRoutePath
disconnectConnection

Default: No default

ATTRIBUTE Vs LCo bumpPreference (bpref)

Access: Read only

Description: This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the

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	connection's *setupPriority.* A connection may also always bump in order to obtain the best route.
Mib	Voice
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Vs LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	Voice
Values	disabled enabled
Default	No default

ATTRIBUTE Vs LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	Voice
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vs LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	Voice
List of	String (0..40, ASCII)
List Size	21
Default	No default

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GROUP Vs LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	Voice

ATTRIBUTE Vs LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	Voice
Values	Long Integer
Default	No default

ATTRIBUTE Vs LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	Voice
Values	Long Integer
Default	No default

ATTRIBUTE Vs LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	Voice
Values	Long Integer
Default	No default

ATTRIBUTE Vs LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	Voice
Values	Long Integer
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - Vs

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - X25Dte

NN10600-060

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COMPONENT X25Dte

Instance	Decimal (1..65535)
Groups	GROUP X25Dte CustomerIdentifierData (CidData) GROUP X25Dte Interface (If) GROUP X25Dte LcnConfig (LcnC) GROUP X25Dte DefaultCallParam (Dcp) GROUP X25Dte IfEntryProv (IfEntry) GROUP X25Dte OsiState (State) GROUP X25Dte OperationalStatus (OperStatus) GROUP X25Dte Operational (Op) GROUP X25Dte Statistics (Stats)
Scope	Application
Description	*X25Dte/n* The *X25Dte* component defines the general parameters for implementing the X.25 DTE interface.
Mib	X25Dte
Subcomponents	COMPONENT X25Dte Lapb COMPONENT X25Dte PacketLayerEntity (Ple) COMPONENT X25Dte RemoteGroup (Rg)
Opt. Subcomp.	COMPONENT X25Dte Peer COMPONENT X25Dte PermLcn (PLcn)
Dyn. Subcomp.	COMPONENT X25Dte Lcn (Lcn)
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP X25Dte CustomerIdentifierData (CidData)

Properties	Provisioned

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Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	X25Dte

ATTRIBUTE X25Dte customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	X25Dte
Values	Decimal (0; 1..8191)
Default	0

GROUP X25Dte Interface (If)

Properties	Provisioned
Description	This group provides the administrative set of parameters for the X.25 interface.
Mib	X25Dte

ATTRIBUTE X25Dte interfaceMode (ifM)

Access	Read only
Description	This attribute specifies the packet mode in which the X.25 interface operates. When this attribute is set to ***dte***, interface on the other side of the physical link must be configured as a ***dce***.
Mib	X25Dte
Values	dte dce

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Default	dte

ATTRIBUTE X25Dte maxActiveChannels (maxAc)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of channels that can be active on this interface including the Permanent Lcns and the Switched Lcns. In total *maxActiveChannel* will determine the maximum number of *Lcn* components which may exist at a given time. This should be set to a value greater or equal to the *numberOfPLcn* provisioned.
Mib	X25Dte
Values	Decimal (0..4095)
Default	10

ATTRIBUTE X25Dte numberOfPLcn (numOPLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of Permanent Logical Channels that are supported on this X.25 interface (that is, the number of *PermLcn* components that may be provisioned at this interface). The *PermLcn* components use channel numbers starting from 1 and up to *lowestILChannelNumber*. A value of ***0*** for this attribute indicates that no Permanent Logical channels are supported on this X.25 interface.
Mib	X25Dte
Values	Decimal (0..4095)
Default	0

ATTRIBUTE X25Dte packetSequencing (pS)

Access	Read and write
Criticality	Process
Description	This attribute specifies the sequence numbering of packets for the X.25 interface. The value of this attribute must be the same as the packet sequencing configured at the X.25 interface on the other side of the physical link.
Mib	X25Dte

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Values	modulo8 modulo128
Default	modulo8

ATTRIBUTE X25Dte t20RestartTimer (t20)

Access	Read and write
Description	This attribute provides the period in milliseconds within which a restart request packet should be confirmed.
Mib	X25Dte
Values	Decimal (1000..65536000)
Units	msec
Default	60000

ATTRIBUTE X25Dte t21CallTimer (t21)

Access	Read and write
Description	This attribute provides the period in milliseconds within which a call request packet should be confirmed.
Mib	X25Dte
Values	Decimal (1000..65536000)
Units	msec
Default	180000

ATTRIBUTE X25Dte t22ResetTimer (t22)

Access	Read and write
Description	This attribute provides the period in milliseconds within which a reset request packet should be confirmed.
Mib	X25Dte
Values	Decimal (1000..65536000)
Units	msec
Default	60000

ATTRIBUTE X25Dte t23ClearTimer (t23)

Access	Read and write

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Description	This attribute provides the period in milliseconds within which a clear request packet should be confirmed.
Mib	X25Dte
Values	Decimal (1000..65536000)
Units	msec
Default	60000

GROUP X25Dte LcnConfig (LcnC)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Logical Channel configuration of the X.25 Interface. The logical channel range table is ordered as follows: Permanent Logical Channels(PLC), One-way Incoming Channels (IC), Two-way Channels(TC) and One-way Outgoing Channels (OC), in a consecutive manner.
Mib	X25Dte

ATTRIBUTE X25Dte lowestILChannelNumber (lILcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the lowest Lcn number of the One-way Incoming Channel range for this X.25 interface. The value for this attribute must be greater than the *numberOfPLcn* attribute.
Mib	X25Dte
Values	Decimal (0..4095)
Default	0

ATTRIBUTE X25Dte highestILChannelNumber (hILcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the highest Lcn number of the One-way Incoming Channel range for this X.25 interface. A value of ***0*** indicates that there are no channels in this range.

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Mib	X25Dte
Values	Decimal (0..4095)
Default	0

ATTRIBUTE X25Dte lowestTLChannelNumber (lTLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the lowest Lcn number of the Two-way Channel range for this X.25 interface. The value for this attribute must be greater than the *highestILChannelNumber* attribute.
Mib	X25Dte
Values	Decimal (0..4095)
Default	1

ATTRIBUTE X25Dte highestTLChannelNumber (hTLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the highest Lcn number of the Two-way Channel range for this X.25 interface. A value of ***0*** indicates that there are no channels in this range.
Mib	X25Dte
Values	Decimal (0..4095)
Default	20

ATTRIBUTE X25Dte lowestOLChannelNumber (lOLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the lowest Lcn number of the One-way Outgoing Channel range for this X.25 interface. The value for this attribute must be greater than the *highestTLChannelNumber* attribute.
Mib	X25Dte
Values	Decimal (0..4095)
Default	0

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ATTRIBUTE X25Dte highestOLChannelNumber (hOLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the highest Lcn number of the One-way Outgoing Channel range for this X.25 interface. A value of ***0*** indicates that there are no channels in this range.
Mib	X25Dte
Values	Decimal (0..4095)
Default	0

GROUP X25Dte DefaultCallParam (Dcp)

Properties	Provisioned
Description	This group contains the provisionable attributes giving the default call parameters used by all the logical channels during call setup. It is possible that different default call parameters will be used for a particular call, based on the *Peer* component for the given call. The actual call parameters operational for a given call are found in the *Lcn* component.
Mib	X25Dte

ATTRIBUTE X25Dte inPacketSize (iPktSz)

Access	Read and write
Description	This attribute specifies the maximum receive packet size in octets for the X.25 interface.
Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

ATTRIBUTE X25Dte outPacketSize (oPktSz)

Access	Read and write
Description	This attribute specifies the maximum transmit packet size in octets for the X.25 interface.
Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

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ATTRIBUTE X25Dte inWindowSize (iWdwSz)

Access	Read and write
Description	This attribute specifies the maximum receive window size for the X.25 interface. A window size greater than ***7*** is only valid when the *packetSequencing* attribute is set to ***modulo128***.
Mib	X25Dte
Values	Decimal (1..127)
Default	2

ATTRIBUTE X25Dte outWindowSize (oWdwSz)

Access	Read and write
Description	This attribute specifies the maximum transmit window size for the X.25 interface. A window size greater than ***7*** is only valid when the *packetSequencing* is set to ***modulo128***.
Mib	X25Dte
Values	Decimal (1..127)
Default	2

ATTRIBUTE X25Dte acceptReverseCharging (aRC)

Access	Read and write
Description	This attribute specifies whether local end will accept or refuse charges for a call. A value of ***neverAccept*** is only used at the X.25 interface level and indicates that this interface will never accept reverse charging (that is no *Peer* component can override this parameter, allowing reverse charged calls to be accepted).
Mib	X25Dte
Values	accept refuse neverAccept
Default	refuse

ATTRIBUTE X25Dte proposeReverseCharging (pRC)

Access	Read and write
Description	This attribute specifies whether ***local***/***reverse*** charging is signalled in the call request packet.
Mib	X25Dte

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Values	reverse local
Default	local

ATTRIBUTE X25Dte outThroughputClassSize (oTpCSz)

Access	Read and write
Description	This attribute specifies the value of the transmit throughput class to be negotiated. A value of ***notSpecified*** means the facility is not signalled.
Mib	X25Dte
Values	75 150 300 600 1200 2400 4800 9600 19200 48000 64000 notSpecified
Default	notSpecified

ATTRIBUTE X25Dte inThroughputClassSize (iTpCSz)

Access	Read and write
Description	This attribute specifies the value of the receive throughput class to be negotiated. A value of ***notSpecified*** means the facility is not signalled.
Mib	X25Dte
Values	75 150 300 600 1200 2400 4800 9600 19200 48000 64000 notSpecified
Default	notSpecified

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ATTRIBUTE X25Dte cugIndex (cI)

Access	Read and write
Description	This attribute specifies the index of the Closed User Group facility to signal. The index consists of two or four octets each representing a digit in the range of 0 to 9. A value of null (empty string) at the X.25 interface means no CUG facility is signalled. If a *cugIndex* is provisioned to be signalled, the *cugoaIndex* attribute must be null.
Mib	X25Dte
Values	String (0..4, ASCII)
Default	""

ATTRIBUTE X25Dte cugoaIndex (coaI)

Access	Read and write
Description	This attribute specifies the index of the Close User Group with Outgoing Access facility to signal. The index consists of two or four octets each representing a digit in the range of 0 to 9. A value of null (empty string) at the X.25 interface means no CUGOA facility is signalled. If a *cugoaIndex* is provisioned to be signalled, the *cugIndex* attribute must be null.
Mib	X25Dte
Values	String (0..4, ASCII)
Default	""

ATTRIBUTE X25Dte chargingInformation (cInfo)

Access	Read and write
Description	This attribute specifies whether the charging information facility is to be signalled in a call request packet. A value of ***notSpecified*** means the facility is not signalled. A value of ***notRequested*** means the facility is signalled but charging information is not requested (that is, the charging info field of the facility is set Off). A value of ***requested*** means the facility is signalled to explicitly request charging information.
Mib	X25Dte
Values	notSpecified notRequested requested
Default	notSpecified

ATTRIBUTE X25Dte rpoa (rp)

Access	Read and write

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Description	This attribute specifies the value of the RPOA facility to signal in a call request packet. The value of null (empty string) at the X.25 interface means no RPOA facility is signalled.
Mib	X25Dte
Values	String (0..108, ASCII)
Default	""

ATTRIBUTE X25Dte trnstDlySlctnAInd (tdsai)

Access	Read and write
Description	This attribute specifies the value of the Transit Delay Selection and Indication facility to signal in a call request packet. A value of ***65536*** at the X.25 interface level means no TDSAI facility is signalled.
Mib	X25Dte
Values	Decimal (0..65536)
Default	65536

ATTRIBUTE X25Dte callingNetworkFax (clgNFax)

Access	Read and write
Description	This attribute specifies the Calling Network facilities to be signalled in a call request packet. A value of null (empty string) at the X.25 interface means no facilities are signalled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte calledNetworkFax (cldNFax)

Access	Read and write
Description	This attribute specifies the called network facilities to be signalled in a call request packet. A value of null (empty string) at the X.25 interface means no facilities are signalled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

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ATTRIBUTE X25Dte callUserData (cud)

Access	Read only
Description	This attribute specifies the user data to be signalled in the call request packet. A value of null (empty string) means no user data is signalled.
Mib	X25Dte
Values	String (0..128, Hex)
Default	""

GROUP X25Dte IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	X25Dte

ATTRIBUTE X25Dte ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	X25Dte
Values	up down testing
Default	up

ATTRIBUTE X25Dte ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	X25Dte
Values	Decimal (1..65535)
Default	No default

GROUP X25Dte OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the

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component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib X25Dte

ATTRIBUTE X25Dte adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib X25Dte

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE X25Dte operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib X25Dte

Values enabled (ena)
disabled (dis)

Default disabled

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ATTRIBUTE X25Dte usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	X25Dte
Values	idle active (activ) busy
Default	idle

GROUP X25Dte OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	X25Dte

ATTRIBUTE X25Dte snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	X25Dte
Values	up down testing
Default	up

GROUP X25Dte Operational (Op)

Properties	Operational
Description	This group contains the operational status of the X.25 interface.
Mib	X25Dte

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ATTRIBUTE X25Dte interfaceState (intfState)

Access	Read only
Description	This attribute specifies the state of the interface. The ***notReady*** state, is the initial state of the service, when it is being initialized. The ***localRestarting*** state is entered when a Restart packet is sent to the link and the interface is waiting for a response. The ***remoteRestarting*** state is entered when a Restart packet is received from the link, and is being processed. In ***ready*** state, the service is operational and ready to provide service.
Mib	X25Dte
Values	notReady localRestarting remoteRestarting ready
Default	No default

GROUP X25Dte Statistics (Stats)

Properties	Operational
Description	This component contains the statistics for the X.25 interface.
Mib	X25Dte

ATTRIBUTE X25Dte inCalls (iC)

Access	Read only
Description	This attribute counts the number of call packets received from link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inCallRefusals (iCR)

Access	Read only
Description	This attribute counts the number of calls received from the link which have been cleared. This includes calls cleared by the X.25 interface and calls cleared by the higher level.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE X25Dte inPrvdrInitiatedClrs (iPIC)

Access	Read only
Description	This attribute counts the number of clear packets received from the link with a cause code other than DTE initiated.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inRmtInitiatedRsts (iRIRsts)

Access	Read only
Description	This attribute counts the number of reset packets received from the link with the cause code DTE initiated.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inPrvdrInitiatedRsts (iPIRsts)

Access	Read only
Description	This attribute counts the number of reset packets received from the link with the cause code other than DTE initiated.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inRestarts (iRstrts)

Access	Read only
Description	This attribute counts the number of restart packets received from the link while the service is in ready state.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inDataPackets (iDPkts)

Access	Read only

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Description	This attribute counts the number of data packets received from link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inPktsAcusdOfPrtclErr (iPktsPErr)

Access	Read only
Description	This attribute counts the number of clear, reset, restart and diagnostic packets received from link containing a procedure error cause code.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inInterruptPackets (iIntPkts)

Access	Read only
Description	This attributes counts the number of interrupt packets received from link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte outCallAttempts (oCAtt)

Access	Read only
Description	This attribute counts the number of call packets sent from this interface.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte outCallFailures (oCFlrs)

Access	Read only
Description	This attribute counts the number of call attempts from this interface that failed. This includes calls that were cleared because of restrictive fast select.
Mib	X25Dte

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Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte outInterruptPackets (oIntPkts)

Access	Read only
Description	This attribute counts the number of interrupt packets sent to the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte outDataPackets (oDPkts)

Access	Read only
Description	This attribute counts the number of data packets sent to the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte outActiveChannels (oActCh)

Access	Read only
Description	This attribute indicates the number of One-way Outgoing Channels that are currently in use. This counter includes the call requests that have not been accepted.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inActiveChannels (iActCh)

Access	Read only
Description	This attribute indicates number of One-way Incoming Channels that are currently active.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE X25Dte twowayActiveChannels (tWActCh)

Access	Read only
Description	This attribute indicates the number of Two-way Channels that are in use. This includes call requests sent but not yet accepted.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte t20RestartTimeouts (t20Tmo)

Access	Read only
Description	This attribute counts the number of times the T20 restart timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte t21CallTimeouts (t21Tmo)

Access	Read only
Description	This attribute counts the number of times the T21 call timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte t22ResetTimeouts (t22Tmo)

Access	Read only
Description	This attribute counts the number of times the T22 reset timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte t23ClearTimeouts (t23Tmo)

Access	Read only

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Description

This attribute counts the number of times the T23 clear timer has expired.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

COMPONENT X25Dte Peer

Instance Decimal (1..4095)

Groups GROUP X25Dte Peer Interface (If)
GROUP X25Dte Peer Encapsulation (Enc)
GROUP X25Dte Peer CallParameter (Cp)
GROUP X25Dte Peer Operational (Op)

Scope Application

Description

X25Dte/n Peer/n

This optional component defines the parameters to be used in setting up a switched circuit call to a particular remote destination. Multiple instances of this component can co-exist under the same *X25Dte* component.
An instance of this component is needed for each remote host with which the X.25 Dte is to communicate (that is, each peer to which it may establish calls or from which it is to accept calls).

Mib X25Dte

Common Verbs
Help
List
Display
Add
DELete

GROUP X25Dte Peer Interface (If)

Properties Provisioned

Description

This group provides the administrative set of parameters for the *Peer* interface.

Mib X25Dte

ATTRIBUTE X25Dte Peer encAddressType (eAddrT)

Access Read and write

Criticality Component

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Description	This attribute specifies the encapsulation type for the address of the remote host with which this *Peer* component allows communication.
Mib	X25Dte
Values	ip
Default	ip

ATTRIBUTE X25Dte Peer encAddress (eAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the encapsulation address of the remote host with which this *Peer* component allows communication. This address must correspond with the encapsulation address type. Thus in the case of IP, it will contain a IP address.
Mib	X25Dte
Values	String (0..128, ASCII)
Default	No default

ATTRIBUTE X25Dte Peer x25Address (x25Addr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the X.25 address that identifies the remote host with which this *Peer* component allows communication. The remote X.25 interface could be subdivided through the use of *RemoteGroup* components; in which case this *x25Address* is the X.25 address of the destination's *RemoteGroup* (not to be confused with the *RemoteGroup* indicated by the *linkToRemoteGroup* attribute of THIS *Peer* component).
Mib	X25Dte
Values	BCD (1..15)
Default	No default

ATTRIBUTE X25Dte Peer linkToRemoteGroup (lTRg)

Access	Read and write
Criticality	Component
Description	This is a link to a *RemoteGroup* component. The *RemoteGroup* components logically divide up the X.25 Interface such that a number of Protocol Ports (and consequently a number of Virtual Routers) may share

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the same X.25 Interface into a Wide Area Network. In particular, the remote host identified by this *Peer* component is designated as belonging to the *RemoteGroup* linked by this attribute. The set of all *Peer* components and *PermLcn* components which link to a given *RemoteGroup* determine the subset of remote hosts which are accessible to a particular Protocol Port (and ultimately a Virtual Router).

Mib X25Dte

Values Link (Service, linkToPeer)

Default No default

GROUP X25Dte Peer Encapsulation (Enc)

Properties Provisioned

Description

This group contains the protocol encapsulation types supported for communicating over an lcn to the remote host identified by this *Peer* component. An lcn may be established to the remote host for each of the supported protocol encapsulation types. For each lcn an *Lcn* dynamic component is created under the *X25Dte*.

Mib X25Dte

ATTRIBUTE X25Dte Peer protocolEncType (pEnc)

Access Read and write

Description

Each instance of this replicated attribute describes an encapsulation method permitted for encapsulating the protocol data units (PDUs) of an upper layer protocol when communicating with the remote host identified by this *Peer* component. The index of a given replicated instance of this attribute represents the relative priority of the encapsulation method specified by the given attribute instance. An attribute with index “1” has the highest priority, so the encapsulation method described by it will be the first one attempted when signaling a call to the link. If the *protocolEncType* is set to ***IP*** to encapsulate IP traffic according to RFC1356, the *callUserData* for this *Peer* component and the *X25Dte* component must both be null, so that ***H.CC*** will be signaled as the call user data of the call request. This indicates that the protocol encapsulation type of IP is to be used for the channel.
A call received from the link will be accepted as long as the encapsulation method indicated in the call user data of the incoming call packet is included in one of these replicated attributes. (This presupposes that the incoming call has been directed to the *RemoteGroup* to which this *Peer* is linked through the *linkToRemoteGroup* attribute.)

Mib X25Dte

Values ip

Replication Decimal (1..1)

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Default	No default

GROUP X25Dte Peer CallParameter (Cp)

Properties	Provisioned
Description	This group contains the call parameters used to establish a call to/from the remote host identified by this *Peer* component
Mib	X25Dte

ATTRIBUTE X25Dte Peer inPacketSize (iPktSz)

Access	Read and write
Description	This attribute specifies the default maximum receive packet size in octets. A setting of ***0*** indicates the *inPacketSize* setting for the X.25 interface (in *X25Dte* component) is used during call setup to the remote host identified by this *Peer* component.
Mib	X25Dte
Values	Decimal (0; 16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

ATTRIBUTE X25Dte Peer outPacketSize (oPktSz)

Access	Read and write
Description	This attribute specifies the default maximum transmit packet size in octets. A setting of ***0*** indicates the *outPacketSize* setting for the X.25 interface (in the *X25Dte* component) is used during call setup to the remote host identified by this *Peer* component.
Mib	X25Dte
Values	Decimal (0; 16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

ATTRIBUTE X25Dte Peer inWindowSize (iWdwSz)

Access	Read and write
Description	This attribute specifies the default receive window size. A window size of ***0*** indicates the *inWindowSize* setting for the X.25 interface (in the *X25Dte* component) is used during call setup to the remote host identified by this *Peer* component. A window size greater than ***7*** is only valid when the *packetSequencing* attribute of the *X25Dte* component is set to ***modulo128***.
Mib	X25Dte

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Values	Decimal (0..127)
Default	2

ATTRIBUTE X25Dte Peer outWindowSize (oWdwSz)

Access	Read and write
Description	This attribute specifies the default transmit window size. A window size of 0 indicates the *outWindowSize* setting for the X.25 interface is used during call setup to the *Peer* identified by this component. A window size greater than ***7*** is only valid when the *packetSequencing* attribute of the *X25Dte* component is set to ***modulo128***.
Mib	X25Dte
Values	Decimal (0..127)
Default	2

ATTRIBUTE X25Dte Peer acceptReverseCharging (aRC)

Access	Read and write
Description	This attribute specifies whether the local end will ***accept*** or ***refuse*** charges for a call from the remote host identified by this *Peer* component. A value of ***default*** indicates the use of the *acceptReverseCharging* value from the *X25Dte* component. If the value at the *X25Dte* level is ***neverAccept***, a value of ***accept*** in this *Peer* component will be ignored because no reverse charge calls are to be accepted by this X.25 Dte.
Mib	X25Dte
Values	default accept refuse
Default	refuse

ATTRIBUTE X25Dte Peer proposeReverseCharging (pRC)

Access	Read and write
Description	This attribute specifies whether local/reverse charging is signaled in a call request packet. A value of ***default*** indicates the use of the value from the *proposeReverseCharging* attribute of the *X25Dte* component.
Mib	X25Dte
Values	default reverse local
Default	local

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ATTRIBUTE X25Dte Peer outThroughputClassSize (oTpCSz)

Access	Read and write
Description	This attribute specifies the value of the transmit throughput class to be negotiated. A value of ***default*** indicates the use of the value from the *outThroughputClassSize* attribute of the *X25Dte* component. A value of ***notSpecified*** means the facility is not signaled.
Mib	X25Dte
Values	75 150 300 600 1200 2400 4800 9600 19200 48000 64000 notSpecified default
Default	notSpecified

ATTRIBUTE X25Dte Peer inThroughputClassSize (iTpCSz)

Access	Read and write
Description	This attribute specifies the value of the receive throughput class to be negotiated. A value of ***default*** indicates the use of the value from the *inThroughputClassSize* attribute of the *X25Dte* component. A value of ***notSpecified*** means the facility is not signaled.
Mib	X25Dte
Values	75 150 300 600 1200 2400 4800 9600 19200 48000 64000 notSpecified default

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Default	notSpecified

ATTRIBUTE X25Dte Peer cugIndex (cI)

Access	Read and write
Description	This attribute specifies the index of the Closed User Group facility to signal. A value of "***DEF***" indicates the use of the value from the *cugIndex* attribute of the *X25Dte* component. A value of null (empty string) indicates no CUG facility is to be signaled. If a *cugIndex* is provisioned to be signaled, the *cugoaIndex* attribute must be null.
Mib	X25Dte
Values	String (0..4, ASCII)
Default	""

ATTRIBUTE X25Dte Peer cugoaIndex (coaI)

Access	Read and write
Description	This attribute specifies the index of the Closed User Group with Outgoing Access facility to signal. A value of "***DEF***" indicates the use of the value from the *cugoaIndex* attribute of the *X25Dte* component. A value of null (empty string) indicates no CUGOA facility is to be signaled. If a *cugoaIndex* is provisioned to be signaled, the *cugIndex* attribute must be null.
Mib	X25Dte
Values	String (0..4, ASCII)
Default	""

ATTRIBUTE X25Dte Peer networkUserIdentifier (nui)

Access	Read and write
Description	This attribute specifies the Network User Identifier facility to signal. A value of null (empty string) indicates no NUI facility is to be signaled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte Peer chargingInformation (cInfo)

Access	Read and write
Description	This attribute specifies whether the charging information facility is signaled in the call request packet. A value of ***default*** indicates the use of the value

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from the *chargingInformation* attribute of the *X25Dte* component. A value of ***notSpecified*** means the facility is not signaled. A value of ***notRequested*** means the facility is signaled but charging information is not requested (that is, the charging info field of the facility is set Off). A value of ***requested*** means the facility is signaled to explicitly request charging information.

Mib X25Dte

Values
default
notSpecified
notRequested
requested

Default notSpecified

ATTRIBUTE X25Dte Peer rpoa (rp)

Access Read and write

Description

This attribute specifies the RPOA facility to signal in a call request packet. A value of "***DEF***" indicates the use of the value from the *rpoa* attribute of the *X25Dte* component. A value of null (empty string) indicates no RPOA facility is to be signaled.

Mib X25Dte

Values String (0..108, ASCII)

Default ""

ATTRIBUTE X25Dte Peer trnstDlySlctnAInd (tdsai)

Access Read and write

Description

This attribute specifies the value of the Transit Delay Selection and Indication facility to signal in a call request packet. A value of ***65536*** indicates no facility is signaled. A value of 65537 indicates the use of the value from the *trnstDlySlctnAInd* attribute of the *X25Dte* component.

Mib X25Dte

Values Decimal (0..65537)

Default 65536

ATTRIBUTE X25Dte Peer callingNetworkFax (clgNFax)

Access Read and write

Description

This attribute specifies the Calling Network facilities to signal in a call request packet. The facilities are encoded here exactly as they are encoded in the call packet. These facilities do not include the marker facility code. A value of null (empty string) indicates the *callingNetworkFax*

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from the *X25Dte* are to be signaled. If that value is also null, no Calling Network Facilities are signaled.

Mib X25Dte

Values String (0..108, Hex)

Default ""

ATTRIBUTE X25Dte Peer calledNetworkFax (cldNFax)

Access Read and write

Description

This attribute specifies the Called Network facilities to signal in a call request packet. The facilities are encoded here exactly as they are encoded in the call packet. These facilities do not include the marker facility code. A value of null (empty string) indicates the *calledNetworkFax* from the *X25Dte* are to be signaled. If that value is also null, no Called Network Facilities are signaled.

Mib X25Dte

Values String (0..108, Hex)

Default ""

ATTRIBUTE X25Dte Peer callUserData (cud)

Access Read only

Description

This attribute specifies the user data to signal in a call request packet. A value of null (empty string) indicates that the *callUserData* from the *X25Dte* is to be signaled. If *callUserData* of the *X25Dte* component is also null and *protocolEncType* of this *Peer* has the value ***IP***, H.CC will be signaled as the call user data of a call request packet. Thus for IP encapsulation according to RFC1356, both the *callUserData* from the *Peer* and *X25Dte* components must be null and the *protocolEncType* set to ***IP***.

Mib X25Dte

Values String (0..128, Hex)

Default ""

GROUP X25Dte Peer Operational (Op)

Properties Operational

Description

This group provides the operational parameters for the *Peer* interface.

Mib X25Dte

ATTRIBUTE X25Dte Peer lcnList (lcn)

Access Read only

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Description	This attribute specifies the local logical channel numbers (*Lcn*) in use for the X.25 calls to the remote host identified by this *Peer* component.
Mib	X25Dte
List of	Decimal (1..4095)
List Size	4095
Default	No default

COMPONENT X25Dte PermLcn (PLcn)

Instance	Decimal (1..4095)
Groups	GROUP X25Dte PLcn Provisioned (Prov)
Scope	Application
Description	*X25Dte/n PermLcn/n* This component defines the parameters required for the Permanent logical channels of an X.25 interface.
Mib	X25Dte
Common Verbs	Help List Display Add DELete

GROUP X25Dte PLcn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable parameters for the permanent logical channels (PLcns) on the X.25 interface (corresponding to Permanent Virtual Circuits (PVCs) provisioned on the Wide Area Network).
Mib	X25Dte

ATTRIBUTE X25Dte PLcn encAddressType (eAddrT)

Access	Read and write
Criticality	Component
Description	This attribute specifies the encapsulation type for the address of the remote host with which this *Peer* component allows communication.

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Mib	X25Dte
Values	none ip
Default	ip

ATTRIBUTE X25Dte PLcn encAddress (eAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the encapsulation address of the remote host with which this *PermLcn* component defines a connection
Mib	X25Dte
Values	String (0..128, ASCII)
Default	No default

ATTRIBUTE X25Dte PLcn protocolEncType (pEnc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the encapsulation method to use when exchanging protocol data units (PDUs) over this channel. ***IP*** and ***Null*** *protocolEncTypes* are as defined in RFC1356. ***NscNull*** is an encapsulation method for carrying IP datagrams which requires removing 3 padding octets of zeroes and the protocol identifier H.CC from the front of each data packet received from the link in order to obtain the PDU. PDUs sent to the link are propounded by a the protocol identifier H.CC. ***NscNull*** should only be set when the remote host is following this same encapsulation method.
Mib	X25Dte
Values	ip null nscNull
Default	ip

ATTRIBUTE X25Dte PLcn linkToRemoteGroup (ITRg)

Access	Read and write
Criticality	Component
Description	This attribute specifies the link to the *RemoteGroup*, indicating the *RemoteGroup* component with which this *PermLcn* component is

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associated. The *RemoteGroup* components logically divide up the X.25 Interface such that a number of Protocol Ports (and consequently a number of Virtual Routers) may share the same X.25 Interface into a Wide Area Network. In particular, the remote host identified by this *PermLcn* component is designated as belonging to the *RemoteGroup* linked by this attribute. The set of all *PermLcn* and *Peer* components which link to a given *RemoteGroup* determine the subset of remote hosts which are accessible to a particular Protocol Port (and ultimately a Virtual Router).

Mib	X25Dte
Values	Link (Service, linkToPermLcn)
Default	No default

ATTRIBUTE X25Dte PLcn inPacketSize (iPktSz)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum receive packet size in octets.
Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

ATTRIBUTE X25Dte PLcn outPacketSize (oPktSz)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum transmit packet size in octets.
Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

ATTRIBUTE X25Dte PLcn inWindowSize (iWdwSz)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum receive window size. A *inWindowSize* greater than ***7*** is only valid when the *packetSequencing* attribute of the *X25Dte* component is set to ***modulo128***.
Mib	X25Dte

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Values	Decimal (1..127)
Default	2

ATTRIBUTE X25Dte PLcn outWindowSize (oWdwSz)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum transmit window size. A *outWindowSize* greater than ***7*** is only valid when the *packetSequencing* attribute of the *X25Dte* component is set to ***modulo128***.
Mib	X25Dte
Values	Decimal (1..127)
Default	2

COMPONENT X25Dte Lcn (Lcn)

Instance	Decimal (1..4095)
Groups	GROUP X25Dte Lcn OsiState (State) GROUP X25Dte Lcn CallParameter (Cp) GROUP X25Dte Lcn LcnStatus GROUP X25Dte Lcn Statistics (Stats)
Scope	Application
Description	*X25Dte/x Lcn/x* This component contains information about a specific logical channel of an X.25 interface.
Mib	X25Dte
Common Verbs	Help List Display

VERB CLEAR X25Dte Lcn

Impact	Service
Description	*CLEAR X25Dte/n Lcn/n* This verb will cause the specified logical channel to close by signaling a clear packet to the link. It only affects SVCs.

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VERB RESET X25Dte Lcn

Impact	Service
Description	*RESET X25Dte/n Lcn/n* This verb will cause the specified logical channel to reset, by sending a reset packet to the link. A reset will cause the data path to be flushed, so data packets in transition will be lost.

GROUP X25Dte Lcn **OsiState (State)**

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte Lcn **adminState (osiAdmin)**

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	X25Dte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE X25Dte Lcn **operationalState (osiOper)**

Access	Read only

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Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	X25Dte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE X25Dte Lcn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	X25Dte
Values	idle active (activ) busy
Default	idle

GROUP X25Dte Lcn CallParameter (Cp)

Properties	Operational
Description	This group contains the call parameters that are in use for this logical channel. For a PVC only the packet size and the window size attributes are meaningful.
Mib	X25Dte

ATTRIBUTE X25Dte Lcn inPacketSize (iPktSz)

Access	Read only
Description	This attribute indicates the maximum receive packet size in octets.

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Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	No default

ATTRIBUTE X25Dte Lcn outPacketSize (oPktSz)

Access	Read only
Description	This attribute indicates the maximum transmit packet size in octets.
Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	No default

ATTRIBUTE X25Dte Lcn inWindowSize (iWdwSz)

Access	Read only
Description	This attribute indicates the receive window size.
Mib	X25Dte
Values	Decimal (1..127)
Default	No default

ATTRIBUTE X25Dte Lcn outWindowSize (oWdwSz)

Access	Read only
Description	This attribute indicates the transmit window size.
Mib	X25Dte
Values	Decimal (1..127)
Default	No default

ATTRIBUTE X25Dte Lcn proposeReverseCharging (pRC)

Access	Read only
Description	Specifies whether local/reverse charging was negotiated for this logical channel. To determine which end of the channel is paying for the call, this attribute must be examined in combination with the *callDirection* attribute. For example, if this attribute is set to ***reverse*** and the *callDirection* attribute indicates ***incoming***, it means the incoming call signaled reverse charging, so the local end of the channel is being charged. On the other, if the value of this attribute is ***reverse*** and the *callDirection* is ***outgoing***, it means that the call request sent to the link signaled reverse charging; so

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the remote end is charged. Similarly, a value of ***local*** must also be interpreted in combination with the *callDirection* to determine which end is being charged. If the value of the *callDirection* attribute is ***plcn***, the *proposeReverseCharging* attribute is meaningless.

Mib X25Dte

Values
reverse
local

Default local

ATTRIBUTE X25Dte Lcn fastSelect (fSel)

Access Read only

Description
This attribute indicates whether the fast select was used in establishing this logical channel.

Mib X25Dte

Values
unrestricted
restricted
no

Default no

ATTRIBUTE X25Dte Lcn outThroughputClassSize (oTpCSz)

Access Read only

Description
This attribute specifies the transmit throughput class.

Mib X25Dte

Values
75
150
300
600
1200
2400
4800
9600
19200
48000
64000
notSpecified

Default notSpecified

ATTRIBUTE X25Dte Lcn inThroughputClassSize (iTpCSz)

Access Read only

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Description	This attribute specifies the receive throughput class.
Mib	X25Dte
Values	75 150 300 600 1200 2400 4800 9600 19200 48000 64000 notSpecified
Default	notSpecified

ATTRIBUTE X25Dte Lcn cugIndex (cI)

Access	Read only
Description	This attribute indicates the index of the Closed User Group facility used in establishing this logical channel.
Mib	X25Dte
Values	String (0..4, ASCII)
Default	""

ATTRIBUTE X25Dte Lcn cugoaIndex (coa)

Access	Read only
Description	This attribute indicates the index of the Closed User Group with Outgoing Access facility used in establishing this logical channel.
Mib	X25Dte
Values	String (0..4, ASCII)
Default	""

ATTRIBUTE X25Dte Lcn networkUserIdentifier (nui)

Access	Read only
Description	Specifies the Network User Identifier used for this logical channel.
Mib	X25Dte

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Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte Lcn chargingInformation (cInfo)

Access	Read only
Description	This attribute indicates whether or not the charging information facility was used in establishing this logical channel. A value of ***notSpecified*** means the facility was not signaled. A value of ***notRequested*** means the facility was signaled but charging information was not requested (that is, the charging info field of the facility was set Off). A value of ***requested*** means the facility was signaled to explicitly request charging information.
Mib	X25Dte
Values	notSpecified notRequested requested
Default	notSpecified

ATTRIBUTE X25Dte Lcn rpoa (rp)

Access	Read only
Description	This attribute indicates the RPOA facility which was signaled in establishing this logical channel.
Mib	X25Dte
Values	String (0..108, ASCII)
Default	""

ATTRIBUTE X25Dte Lcn trnstDlySlctnAInd (tdsai)

Access	Read only
Description	This attribute indicates the Transit Delay Selection and Indication value used for this logical channel. A value of ***65536*** means no facility was signaled.
Mib	X25Dte
Values	Decimal (0..65536)
Default	65536

ATTRIBUTE X25Dte Lcn callingNetworkFax (clgNFax)

Access	Read only

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Description	This attribute indicates the Calling Network facilities which were signaled in the call packet. A value of null (empty string) means no calling network facilities were signaled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte Lcn calledNetworkFax (cldNFax)

Access	Read only
Description	This attribute indicates the called network facilities which were signaled in the call packet. A value of null (empty string) means no called network facilities were signaled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte Lcn callUserData (cud)

Access	Read only
Description	This attribute indicates the user data which was signaled in the call packet. A value of null (empty string) means no user data was signaled.
Mib	X25Dte
Values	String (0..128, Hex)
Default	""

GROUP X25Dte Lcn LcnStatus

Properties	Operational
Description	This group contains the status for an X.25 Logical Channel.
Mib	X25Dte

ATTRIBUTE X25Dte Lcn status

Access	Read only
Description	This attribute indicates the current state of the logical channel.
Mib	X25Dte

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Values	closed calling dataTransfer clearing resetting
Default	No default

ATTRIBUTE X25Dte Lcn callDirection (cDir)

Access	Read only
Description	This attribute indicates the direction of the call that caused the establishment of this channel.
Mib	X25Dte
Values	incoming outgoing permanentLcn
Default	No default

ATTRIBUTE X25Dte Lcn calledAddress (cldAddr)

Access	Read only
Description	This attribute indicates the called X.25 address to which the call is established.
Mib	X25Dte
Values	BCD (0..15)
Default	No default

ATTRIBUTE X25Dte Lcn callingAddress (clgAddr)

Access	Read only
Description	This attribute indicates the calling X.25 address from which the call originated
Mib	X25Dte
Values	BCD (0..15)
Default	No default

ATTRIBUTE X25Dte Lcn originalCalledAddress (oCldAddr)

Access	Read only
Description	This attribute indicates the X.25 address of the originally called DTE to

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	which the call was attempted. This could be different from the value of the *calledAddress* attribute in the case where the original call was redirected.
Mib	X25Dte
Values	BCD (0..15)
Default	No default

GROUP X25Dte Lcn Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for an X.25 Logical Channel.
Mib	X25Dte

ATTRIBUTE X25Dte Lcn inUknownProtocols (iUP)

Access	Read only
Description	This attribute counts the number packets received from link which were discarded because of an unknown or unsupported protocols.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn inDataOctets (iDOct)

Access	Read only
Description	This attribute counts the number of octets of user data received from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn inDataPackets (iDPkts)

Access	Read only
Description	This attribute counts the number of data packets received from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE X25Dte Lcn inRmtInitiatedRsts (iRIRsts)

Access	Read only
Description	This attribute counts the number of reset packets, with a cause code of “DTE initiated”, which were received from the link
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn inPrvdrInitiatedRsts (iPIRsts)

Access	Read only
Description	This attribute counts the number of reset packets, with a cause code other than “DTE initiated”, which were received from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn inInterruptPackets (iIntPkts)

Access	Read only
Description	This attribute counts the number of interrupt packets received from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn outDataOctets (oDOct)

Access	Read only
Description	This attribute counts the number of octets of user data sent to the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn outDataPackets (oDPkts)

Access	Read only

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Description	This attribute counts the number of data packets sent to link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn outInterruptPackets (oIntPkts)

Access	Read only
Description	This attribute counts the number of interrupt packets sent to link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn t22ResetTimeouts (t22Tmo)

Access	Read only
Description	This attribute counts the number of times the t22 reset timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

COMPONENT X25Dte Lapb

Groups	GROUP X25Dte Lapb ControlParam (Cp) GROUP X25Dte Lapb OsiState (State) GROUP X25Dte Lapb Status GROUP X25Dte Lapb Statistics (Stats)
Scope	Application
Description	This component defines the LAPB protocol and its related service options.
Mib	X25Dte
Subcomponents	COMPONENT X25Dte Lapb Framer
Common Verbs	Help List Display

GROUP X25Dte Lapb ControlParam (Cp)

Properties	Provisioned

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Description	X25Dte/n Lapb This group contains the set of configuration parameters for the LAPB interface.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb stationType (type)

Access	Read and write
Description	This attribute specifies the DCE or the DTE role of operation for the LAPB interface. Changing this attribute will cause the lapb link to Reset.
Mib	X25Dte
Values	dte dce
Default	dte

ATTRIBUTE X25Dte Lapb frameSequencing (fs)

Access	Read and write
Description	This attribute specifies the modulo of the frame sequence numbering of the LAPB interface. Changing this attribute will cause the lapb link to Reset.
Mib	X25Dte
Values	modulo8 modulo128
Default	modulo8

ATTRIBUTE X25Dte Lapb n1FrameSize (n1)

Access	Read and write
Description	This attribute specifies the maximum frame size in bits that can be transmitted or received. This value must be greater than or equal to the maximum packet size across the interface(in bits)+ max level 3 header size(in bits)+ max level 2 header size(in bits)+ crc in bits. (max Pkt size + ----------> 4096*8 max level 3 header size + ---> 4*8 level 2 header size + --------> 5*8 crc ----------> 2*8)
Mib	X25Dte
Values	Decimal (40..32856)
Units	bits

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Default	32856

ATTRIBUTE X25Dte Lapb kWindowSize (k)

Access	Read and write
Description	This attribute specifies the window size. This is the maximum number of unacknowledged sequenced frames that may be outstanding from or to this interface at any one time. A window size of greater than 7 is only valid when the sequence numbering of frames is modulo 128.
Mib	X25Dte
Values	Decimal (1..127)
Default	7

ATTRIBUTE X25Dte Lapb n2TransmitLimit (n2)

Access	Read and write
Description	This attribute specifies the maximum number of times a frame can be transmitted before appropriate recovery action is taken.
Mib	X25Dte
Values	Decimal (1..20)
Default	10

ATTRIBUTE X25Dte Lapb t1AckTimer (t1)

Access	Read and write
Description	This attribute specifies the period in milliseconds within which an acknowledgment of a sent frame must be received. The value set for t1 ack timer must be less than the value set for the t4 idle probe timer.
Mib	X25Dte
Values	Decimal (1000..10000)
Units	msec
Default	3000

ATTRIBUTE X25Dte Lapb t2AckDelayTimer (t2)

Access	Read and write
Description	This attribute specifies the maximum period in milliseconds permissible to wait before sending an acknowledgment for a received in sequenced I-frame. A value of 0 means there will be no delay in acknowledgment.

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Mib	X25Dte
Values	Decimal (0..10000)
Units	msec
Default	0

ATTRIBUTE X25Dte Lapb t4IdleProbeTimer (t4)

Access	Read and write
Description	This attribute specifies the time period in milliseconds the link will be permitted to remain idle (that is, no frames are exchanged on the data link). Upon expiry of this timer, LAPB will poll its peer for status. The value set for t4 idle probe timer must be greater than the value set for the t1 ack timer.
Mib	X25Dte
Values	Decimal (1000..65535000)
Units	msec
Default	60000

ATTRIBUTE X25Dte Lapb actionInitiate (ai)

Access	Read and write
Description	This attribute specifies the action to be taken by the LAPB interface to initiate link setup.
Mib	X25Dte
Values	sendSABM sendDM none
Default	sendSABM

ATTRIBUTE X25Dte Lapb actionRecvDM (ardm)

Access	Read and write
Description	This attribute specifies the action to be taken by the LAPB interface when it receives a DM response.
Mib	X25Dte
Values	sendSABM
Default	sendSABM

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ATTRIBUTE X25Dte Lapb txQDegradeThreshold (txdt)

Access	Read and write
Description	This attribute specifies the threshold of the number of higher layer packets queued, beyond which LAPB should initiate a service degrade alarm. A value of 65536 means no threshold.
Mib	X25Dte
Values	Decimal (1..65536)
Default	65536

ATTRIBUTE X25Dte Lapb txQResetThreshold (txrt)

Access	Read and write
Description	This attribute specifies the threshold of the number of higher layer packets queued, beyond which LAPB should initiate an overload alarm and reset the link. A value of 65536 means no threshold.
Mib	X25Dte
Values	Decimal (1..65536)
Default	65536

GROUP X25Dte Lapb OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting

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down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib X25Dte

Values
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE X25Dte Lapb operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib X25Dte

Values
enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE X25Dte Lapb usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib X25Dte

Values
idle
active (activ)
busy

Default idle

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GROUP X25Dte Lapb Status

Properties	Operational
Description	This group contains the status for the LAPB interface.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb currentState (cs)

Access	Read only
Description	This attribute specifies the current state of the LAPB interface.
Mib	X25Dte
Values	disconnected linkSetup frameReject disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE X25Dte Lapb lastStateChangeReason (lscr)

Access	Read only
Description	This attribute specifies the reason for the most recent state change.
Mib	X25Dte
Values	notStarted abmEntered abmeEntered abmReset abmeReset dmReceived dmSent discReceived discSent frmrReceived frmrSent n2TimeOut other
Default	No default

ATTRIBUTE X25Dte Lapb frmrTransmit (frmrtx)

Access	Read only

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Description	This attribute specifies the Information field of the FRMR most recently sent.
Mib	X25Dte
Values	String (0..7, Hex)
Default	""

ATTRIBUTE X25Dte Lapb frmrReceive (frmrrx)

Access	Read only
Description	This attribute specifies the Information field of the FRMR most recently received.
Mib	X25Dte
Values	String (0..7, Hex)
Default	""

ATTRIBUTE X25Dte Lapb currentQueueSize (cqs)

Access	Read only
Description	This attribute specifies the number of packets on the lapb transmit queue.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	No default

GROUP X25Dte Lapb Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for the LAPB interface.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb stateChanges (sc)

Access	Read only
Description	This attribute counts the number of times LAPB state has changed. Refer to the attribute “linkState” for the set of possible states.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

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ATTRIBUTE X25Dte Lapb remoteBusy (rb)

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was un-successful due to a perceived remote busy condition (window closed or remote busy).
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb transmitRejectFrames (txrejs)

Access	Read only
Description	This attribute counts the number of REJ frames sent by the interface.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb receiveRejectFrames (rxrejs)

Access	Read only
Description	This attribute counts the number of REJ frames received by the interface.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb t1AckTimeout (t1Tmo)

Access	Read only
Description	This attribute counts the number of times the T1 timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

COMPONENT X25Dte Lapb Framer

Groups	GROUP X25Dte Lapb Framer Provisioned (Prov) GROUP X25Dte Lapb Framer LinkOptions (Link) GROUP X25Dte Lapb Framer OsiState (State)

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GROUP X25Dte Lapb Framer Statistics (Stats)
GROUP X25Dte Lapb Framer LinkUtilization (Util)

COLLECTED STATS X25Dte Lapb Framer

Scope: Application

Description:

X25Dte/n Lapb Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib: X25Dte

Common Verbs:
Help
List
Display

GROUP X25Dte Lapb Framer Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib: X25Dte

ATTRIBUTE X25Dte Lapb Framer interfaceName

Access: Read and write

Criticality: Process

Description:

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines

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	the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	X25Dte
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP X25Dte Lapb Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb Framer flagsBetweenFrames

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface.
Mib	X25Dte
Values	Decimal (1..16)
Default	1

GROUP X25Dte Lapb Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

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The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib X25Dte

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE X25Dte Lapb Framer operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib X25Dte

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE X25Dte Lapb Framer usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib X25Dte

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Values	idle active (activ) busy
Default	idle

GROUP X25Dte Lapb Framer **Statistics (Stats)**

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb Framer **aborts**

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer **crcErrors**

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer **lrcErrors**

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer **nonOctetErrors**

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Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer **overruns**

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer **underruns**

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer **frmToIf**

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	X25Dte
Values	Long Integer
Default	No default

ATTRIBUTE X25Dte Lapb Framer **frmFromIf**

Access	Read only

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Description	The number of frames received from the link interface by Framer.
Mib	X25Dte
Values	Long Integer
Default	No default

ATTRIBUTE X25Dte Lapb Framer **octetFromIf**

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	X25Dte
Values	Long Integer
Default	No default

GROUP X25Dte Lapb Framer **LinkUtilization (Util)**

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb Framer **normPrioLinkUtilToIf**

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	X25Dte
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE X25Dte Lapb Framer **normPrioLinkUtilFromIf**

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities

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of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.

Mib	X25Dte
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS X25Dte Lapb Framer

Description	The statistics record generated by the X25Dte Lapb Framer component.

ATTRIBUTE X25Dte Lapb Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE X25Dte Lapb Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE X25Dte Lapb Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE X25Dte Lapb Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE X25Dte Lapb Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT X25Dte PacketLayerEntity (Ple)

Groups	GROUP X25Dte Ple Provisioned (Prov) GROUP X25Dte Ple Operational (Op)
Scope	Application

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Description

X25Dte/n PacketLayerEntity

This component provides information that applies to multiprotocol interconnect over an X.25 service.

Mib X25Dte

Common Verbs
Help
List
Display

GROUP X25Dte Ple Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisionable attributes relevant to an interface used to carry Multiprotocol Interconnect traffic over X.25.

Mib X25Dte

ATTRIBUTE X25Dte Ple inactivityTimer (iTmr)

Access Read and write

Description This attribute specifies the period in milliseconds this interface will keep an idle connection open before closing it.

Mib X25Dte

Values Decimal (0..65536000)

Default 180000

GROUP X25Dte Ple Operational (Op)

Properties Operational

Description

This group contains the Operational attributes relevant to an interface used to carry Multiprotocol Interconnect traffic over X.25.

Mib X25Dte

ATTRIBUTE X25Dte Ple encAddrToX25LkupFlrs (enAddrTX25Flr)

Access Read only

Description This attribute indicates the number of times a translation attempt from an Encapsulation address to an X.25 address failed to find a corresponding X.25 address. Such a failure could occur when a Protocol Port, linked to a *RemoteGroup* via the *linkToProtocolPort* attribute of the *RemoteGroup*, requests through the software that a X.25 call be established to a particular Encapsulation address. If the *RemoteGroup* does not have a *Peer* component linked in its *linkToPeer* attribute list, with the *encAddress*

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attribute equal to the Encapsulation address specified, this counter will be incremented, because the corresponding *Peer* component needed to establish an X.25 connection was not found.

Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte PIe lastFailedEncAddr (lFEnaddr)

Access	Read only
Description	This attribute indicates the last Encapsulation address for which no corresponding X.25 address was found and thus caused *encAddressToX25LkupFlrs* to be incremented.
Mib	X25Dte
Values	String (2..128, Hex)
Default	No default

ATTRIBUTE X25Dte PIe x25AddrToEncLkupFlrs (x25AddrTEnFlr)

Access	Read only
Description	This attribute indicates the number of times a translation attempt from an X.25 address to an Encapsulation address failed to find a corresponding Encapsulation address. Such a failure could occur when a incoming call received from the link by the X.25 DTE is directed to a specific *RemoteGroup* because the called address matches the *localAddress* attribute of the *RemoteGroup* component. If the *RemoteGroup* component does not have a *Peer* component linked in its *linkToPeer* attribute list, with the *x25Address* attribute equal to the calling address from the incoming call packet, there is no appropriate *Peer* component, so the call is cleared and this counter is incremented.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte PIe lastFailedX25Addr (lFX25Addr)

Access	Read only
Description	This field specifies the last X.25 address that caused *x25AddressToEncLkupFlrs* to be incremented.
Mib	X25Dte
Values	BCD (0..15)
Default	No default

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COMPONENT X25Dte RemoteGroup (Rg)

Instance	Decimal (1..1023)
Groups	GROUP X25Dte Rg IfEntryProv (IfEntry) GROUP X25Dte Rg Provisioned (Prov) GROUP X25Dte Rg OsiState (State) GROUP X25Dte Rg OperationalStatus (OperStatus) GROUP X25Dte Rg Operational (Op)
Scope	Application
Description	*X25Dte/n RemoteGroup/n* At least one *RemoteGroup* is required for each *X25Dte* component. The *RemoteGroup* allows the X.25 DTE interface to be shared amongst a number of Protocol Ports. This allows separate Virtual Routers to share the same physical X.25 connection into a Wide Area Network.
Mib	X25Dte
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP X25Dte Rg IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	X25Dte

ATTRIBUTE X25Dte Rg ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	X25Dte
Values	up down testing
Default	up

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ATTRIBUTE X25Dte Rg ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	X25Dte
Values	Decimal (1..65535)
Default	No default

GROUP X25Dte Rg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *RemoteGroup* component.
Mib	X25Dte

ATTRIBUTE X25Dte Rg linkToProtocolPort

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	X25Dte
Values	Link (Service, linkToMedia)
Default	No default

ATTRIBUTE X25Dte Rg localAddress (lAddr)

Access	Read and write
Criticality	Component
Description	This attribute contains the unique X.25 address which identifies this *RemoteGroup*. It should correspond to the called address in X.25 incoming call packets which are to be directed to this *RemoteGroup*. This allows calls received from the link to be directed to the appropriate *RemoteGroup* based on the called address in the X.25 call packet. The *RemoteGroup* components allow the X.25 interface to be shared amongst a number of Protocol Ports (and ultimately Virtual Routers) because each *RemoteGroup* is coupled with a specific *ProtocolPort* through its *linkToProtocolPort* attribute.

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Mib	X25Dte
Values	BCD (1..15)
Default	No default

ATTRIBUTE X25Dte Rg mtuSize (mtuSz)

Access	Read and write
Description	This attribute specifies the Maximum Transmit Unit (MTU); that is, the size of the largest datagram (in octets) which can be sent/received on the interface.
Mib	X25Dte
Values	Decimal (576..9188)
Units	octets
Default	1600

ATTRIBUTE X25Dte Rg linkToPermLcn (ltPlcn)

Access	Read and write
Description	This attribute is a list of links to *PermLcn* components. The set of all *Peer* and *PermLcn* components which link to a given *RemoteGroup* determine the subset of remote hosts which are accessible to a particular Protocol Port (and ultimately a Virtual Router).
Mib	X25Dte
List of	Link (Service, linkToRemoteGroup)
List Size	4095
Default	No default

ATTRIBUTE X25Dte Rg linkToPeer (ltPeer)

Access	Read and write
Description	This attribute gives a list of links to *Peer* components. The set of all *Peer* and *PermLcn* components which link to a given *RemoteGroup* determine the subset of remote hosts which are accessible to a particular Protocol Port (and ultimately a Virtual Router).
Mib	X25Dte
List of	Link (Service, linkToRemoteGroup)
List Size	4095
Default	No default

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GROUP X25Dte Rg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte Rg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	X25Dte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE X25Dte Rg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

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Mib	X25Dte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE X25Dte Rg usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	X25Dte
Values	idle active (activ) busy
Default	idle

GROUP X25Dte Rg OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	X25Dte

ATTRIBUTE X25Dte Rg snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	X25Dte
Values	up down testing
Default	up

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GROUP X25Dte Rg Operational (Op)

Properties	Operational
Description	This group gives the operational attributes of the *RemoteGroup* component.
Mib	X25Dte

ATTRIBUTE X25Dte Rg IcnList (Icn)

Access	Read only
Description	This attribute lists the *Lcn* components for the *X25Dte*, which belong to this *RemoteGroup*. There is an *Lcn* component listed here for every lcn connection belonging to this *RemoteGroup*. The lcns were established using either a *Peer* component linked to this *RemoteGroup* (in response to a switched call) or using a *PermLcn* component linked to this *RemoteGroup* (a permanent connection).
Mib	X25Dte
List of	Decimal (1..4095)
List Size	4095
Default	No default

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Nortel Multiservice Switch 7400, 15000, 20000

Components Reference - X25Dte

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